AECOM

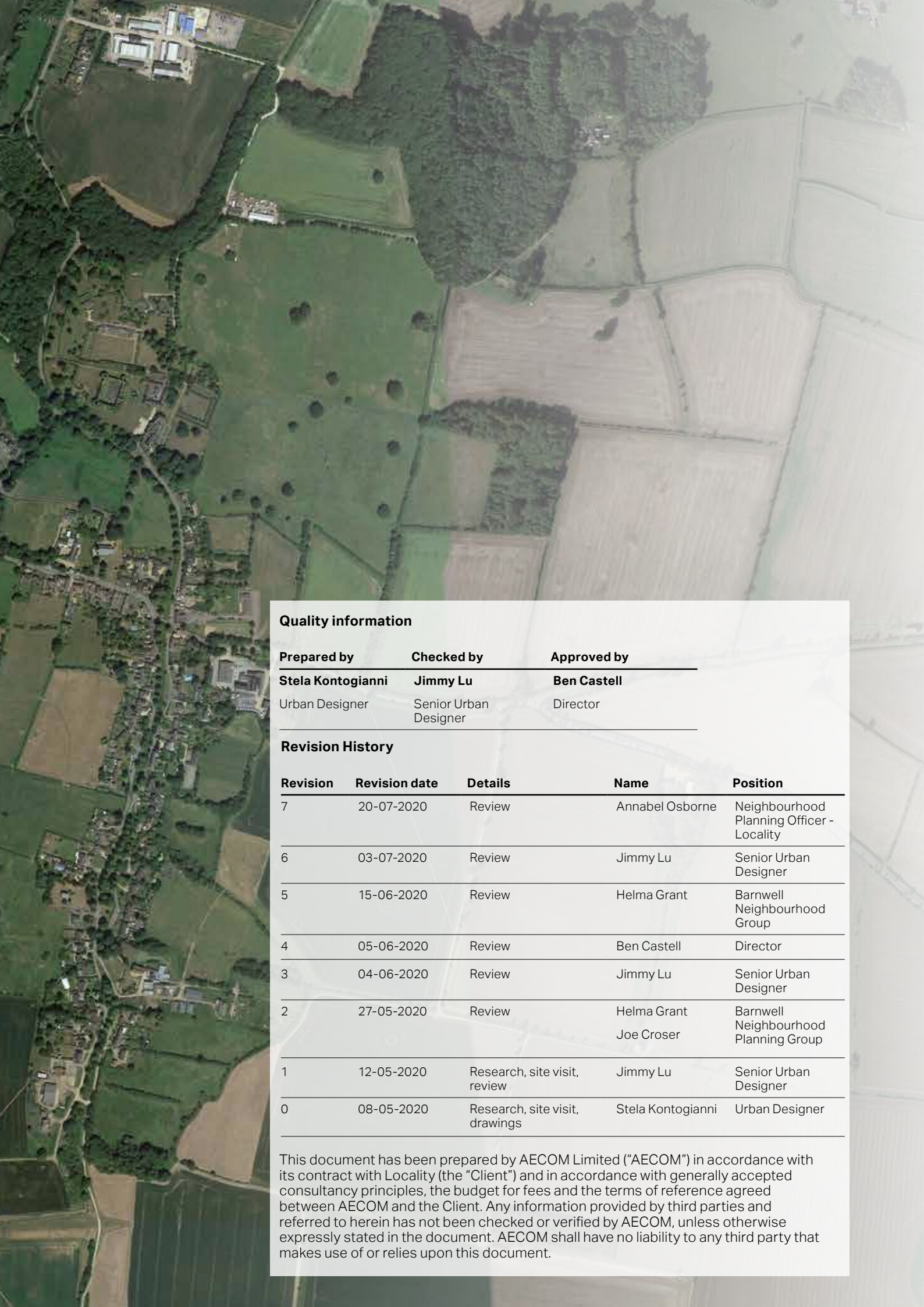
BARNWELL

Neighbourhood Plan

Design Code

FINAL REPORT

JULY 2020



Quality information

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Revision History

Revision	Revision date	Details	Name	Position
7	20-07-2020	Review	Annabel Osborne	Neighbourhood Planning Officer - Locality
6	03-07-2020	Review	Jimmy Lu	Senior Urban Designer
5	15-06-2020	Review	Helma Grant	Barnwell Neighbourhood Group
4	05-06-2020	Review	Ben Castell	Director
3	04-06-2020	Review	Jimmy Lu	Senior Urban Designer
2	27-05-2020	Review	Helma Grant Joe Croser	Barnwell Neighbourhood Planning Group
1	12-05-2020	Research, site visit, review	Jimmy Lu	Senior Urban Designer
0	08-05-2020	Research, site visit, drawings	Stela Kontogianni	Urban Designer

Contents

Introduction

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1. Introduction

1.1. Introduction

Through the Ministry of Housing, Communities and Local Government (MHCLG) Neighbourhood Planning Programme led by Locality, AECOM has been commissioned to provide design support to Barnwell Parish Council.

The Neighbourhood Planning Group is making good progress in the production of its Neighbourhood Plan and has requested to access professional advice on design guidelines for any potential development within the Parish. This document should support Neighbourhood Plan policies that guide the assessment of potential development proposals and encourage high-quality design that respects the local character and heritage. It advises on physical development and building renovations, helping to create distinctive places that are integrated with the existing village and landscape.

1.2. Objective

The main objective of this report is to develop design guidelines that any potential development in Barnwell, including infill development, should follow in order to retain and protect the rural, tranquil character and historic beauty of the area. The public spaces as well as the built heritage are also assets that the Parish seeks to retain and enhance. New development should not threaten the character of Barnwell as a small historic, linear village that is open to the surrounding countryside and landscape.

1.3. Process

Following an online inception meeting and site visit , AECOM and Barnwell Neighbourhood Plan steering group members carried out a high-level assessment of the village. The following steps were agreed with the group to produce this report:

- Initial online meeting and site visit[1];
- Urban design analysis;
- Preparation of design principles and guidelines to be used to assess potential developments;
- Draft report with design guidelines; and
- Final report.

1.4. Area of study

Location

The East Northamptonshire parish of Barnwell lies about 20 km south-west of Peterborough, 16 km east of Corby, and 38 km north-west of Northampton. The Parish shares borders with Oundle and Polebrook to the north; Thurning to the east; Winwick, Clopton, and Lilford-Cum-Wigsthorpe to the south; and Stoke Doyle to the west. The nearest train stations are Corby to the west and Peterborough to the north-east. The village used to be served by the Northampton and Peterborough Railway but the railway is now disused. The Parish is served by the A605 that runs west of the village. There are no bus services in the village; the nearest stop is Oundle.

The village has a pub, the Montagu Arms; a post office co-located with a general store; a village hall; two churches, St Andrew's and All Saints and the 13th century Castle. Local landmarks include Barnwell Country Park, Barnwell Mill, and Barnwell Marina.

Population

At the 2011 census the population of the Parish was 369.

KEY

Parish boundary

A-road

Local roads

1. At the time of writing this report, COVID-19 safety measures and travel restrictions prevented in-person meetings and site visits. Instead, a virtual site visit was conducted on 22.04.2020 with members of the steering group using the Street View feature of Google Maps

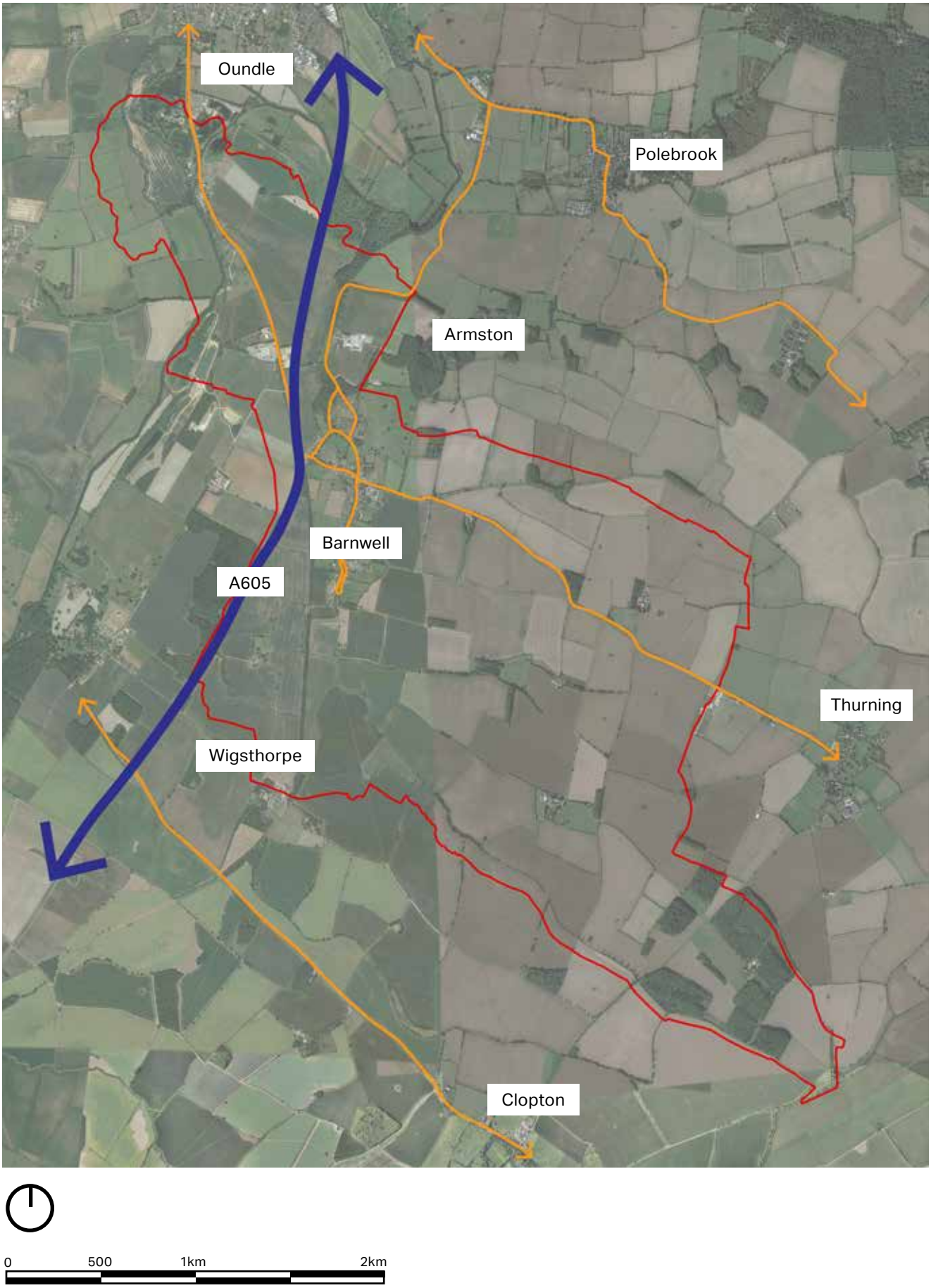

Figure 1: Barnwell parish boundary (Source: Google Earth)

Local character analysis

02

2. Local character analysis

This section outlines the broad physical, historic and contextual characteristics of Barnwell. It analyses the roads and public realm, the pattern and layout of buildings, building heights and rooflines, and parking in the area. The images in this section have been used to portray the built form of Barnwell.

2.1. Introduction

The village of Barnwell is located along Barnwell Brook, which runs in its centre along Main Street and gave the settlement its distinctive elongated linear pattern. Due to the nearby availability of Clipsham and grey cropped stones for construction, most buildings in the village are faced with the local warm yellow limestones that contribute to the settlement's visual character and identity.

The centre of the village which includes Barnwell Castle and Manor, has been protected as a Conservation Area since 1970. The Parish has 35 listed buildings and structures, all Grade-II listed with the exception of Barnwell Castle and the Church of St Andrew (Grade I), and All Saints Chancel (Grade II*). There are also three Scheduled Monuments; Barnwell Castle, the sites of All Saints Manor House and Gardens, and South Bridge (also in Oundle). There are two Registered Parks and Gardens; St Andrew's Manor and All Saints' Manor. In addition, the Parish has a number of noteworthy (unlisted) structures such as the Old School (Princess Alice Centre) and a number of footbridges across Barnwell Brook.

2.2. Landscape and open space

The Parish is located in the valley of the river Nene. Most of its land lies within the Northamptonshire Vales National Character Area (NCA 89), characterised by an open landscape of gently undulating valleys. Arable land occupies most of the unbuilt land in the Parish, with the remaining areas consisting in scattered woodland as well as wetlands and man-made lakes along the river Nene, enabling long-distance views across the open countryside. Owing to its narrow linear configuration, the village of Barnwell retains a high degree of openness to the surrounding countryside. The Meadows, playing fields, Village Green, the church yards of All Saints and St Andrew's, and the banks of Barnwell Brook are the main open and recreational spaces in the village. The latter forms the main feature of the village and creates a green corridor that forms the spine of the settlement. There are also two Registered Parks and Gardens: the church yard of All Saints and the grounds of St Andrew's Manors. The latter encompasses Barnwell Castle but is not publicly accessible. Beyond the settled area, Barnwell Country Park is the largest outdoor recreational area of the Parish with lakes and wetlands located on the eastern bank of the river Nene and forming the Parish's north western boundary.

KEY

- Parish boundary
- Road network
- River
- Conservation area
- Historic parks & gardens
- Local green space
- Scheduled monuments
- Listed buildings: Grade I
- Grade II
- Grade II*

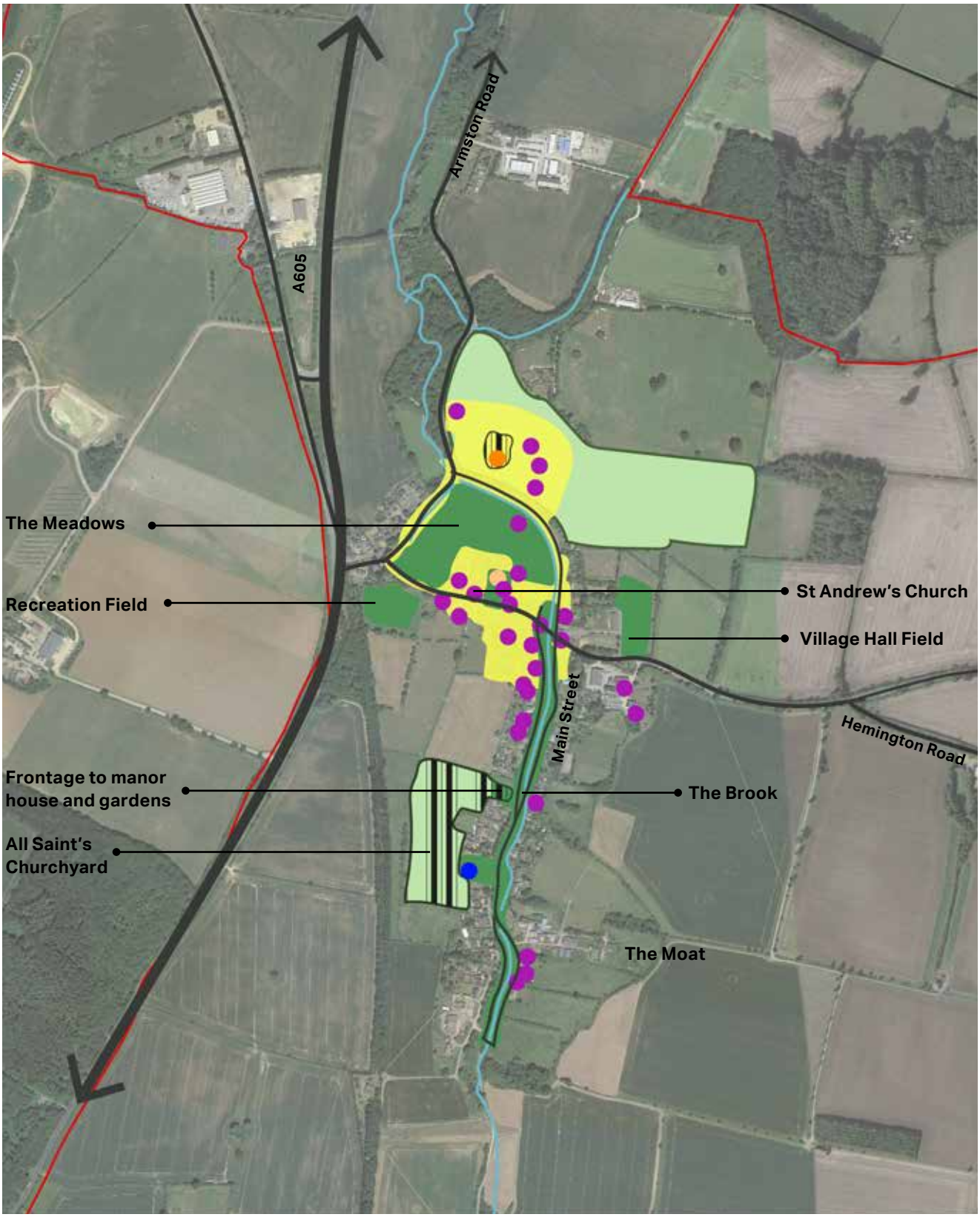

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Figure 2: Landscape designations in Barnwell Village (Source: Google Earth).

2.3. Street and public realm

The Parish has a sparse and organically shaped network of country roads that contribute to its quiet rural character. The street layout is influenced by the local hydrography: Armston Road and Main Street both run along Barnwell Brook, and Main Street forms the backbone of the settlement's linear layout along both banks of Barnwell Brook. The centre of the village is located at the junction between Main Street, Church Lane, and Hemington Road.

Roads in the village are narrow and sinuous with irregular layouts. The absence of pavements along most of the road network reinforces the informal rural character of the settlement. Roads are typically enclosed by attractive low stone walls with vertical stone capping, grass verges, front gardens, and buildings. The most distinctive public realm feature of Barnwell is formed by the configuration of Main Street that splits along both sides of Barnwell Brook, offering a highly attractive environment framed by houses and gardens on one side and the tree-lined riverbank on the other. Roads outside the village are usually fronted by ditches and hedgerows incorporating mature trees.

A number of footpaths, cycle routes, and trails complements the sparse road network and connect Barnwell to the surrounding countryside and neighbouring settlements. In particular, the Nene Way public footpath that passes through the village runs from Lincolnshire to Northampton and is 114 miles long. A resident survey conducted for the Neighbourhood Plan indicates however an interest among residents in improvements to cycle route to Oundle and Barnwell Country Park. Footbridges spanning Barnwell Brook increase pedestrian connectivity in the village and offer pleasant views along the river. The A605 runs along parts of the Parish boundaries west of the village and creates an important severance and obstacle to east-west travels as well as an important source of noise pollution.

KEY

- Parish boundary
- Road network
- River
- Bridleway
- Footpath
- Restricted byway

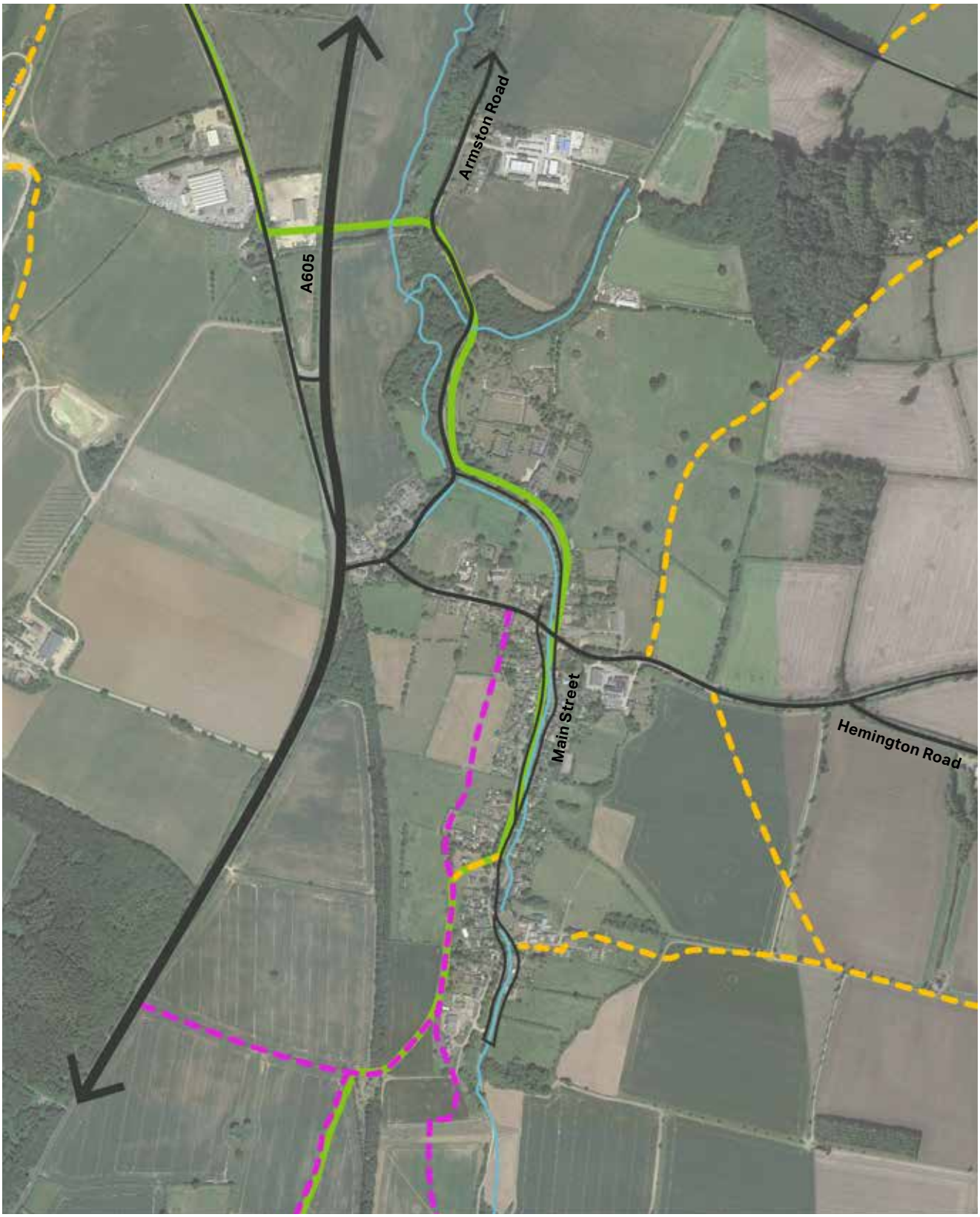

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Figure 3: Public rights of way in Barnwell Village (Source: Google Earth).

2.4. Pattern and layout of buildings

Barnwell is a small and sparsely built-up settlement with an organic layout. The existing structure is partly the result of the merging of two distinct settlements, namely St Andrews to the north and All Saints to the south. The former, which includes Barnwell Castle, has a more open configuration, with sparse groups of buildings encircling a large area of unbuilt land known as the Meadows. All Saints, on the other hand, has distinctive narrow linear configuration shaped by the course of Barnwell Brook which runs in its middle. Most buildings in All Saints front either side of Main Street in a one-plot deep configuration and back onto the open countryside. The predominance of detached and semi-detached buildings, its one-plot deep organisation, as well as the presence of unbuilt plots enable frequent views into the countryside from the village centre and along Main Street. The small cluster around Castleview to the north-west of the village is the only significant area with a suburban cul-de-sac configuration.

Overall, buildings face the roads and lanes with a wide range of setbacks. On a minority of properties, buildings directly adjoin the back of the pavement with not setback, but most houses are set back behind front gardens of varying depths.

Outside of the village, the Parish only has a few clusters of commercial buildings at Barnwell Marina and Barnwell Workshops. The remaining buildings are isolated farmsteads.

2.5. Car parking

Parking is mainly provided off-street in the form of private residential parking. Most plots are large enough to provide parking in the form of front, side, or courtyard parking. Most off-street residential parking spaces are screened by a variety of features including low walls, soft landscaping, hedges, or timber gates, which soften the impact of parking on the general streetscape. A number of properties have garage structures placed at the side of properties; in general, they are recessed from the building line and visually subservient to the main building elevation.

Most roads are too narrow to accommodate on-street parking without impeding vehicle access. Limited sections of Main Street and Church Lane are wide enough to accommodate either unmarked roadside parking or marked echelon parking.

2.6. Building height and roofline

The village has an irregular roofline comprising one- and two-storey buildings. Traditional roof materials typically found in Barnwell include Collyweston and Welsh slate, clay pantiles and plaintiles, and thatch mainly composed of straw and some reed. The irregularity of the roofline, which adds visual interest and contributes to the rural and informal character of the village, is accentuated by the variety of building orientations, setbacks, heights, and widths. One exception is the Castleview cluster, characterised by a more uniform roofline created by the repetition of a limited number of suburban house layouts. In general, roofs have relatively steep pitches and simple shapes consisting in alternations of gables and eaves. A number of gables feature stone or brick stacks, or end with a parapet that protrudes above the roof surface. A minority of roofs feature a variety of dormers types, including gabled dormers.

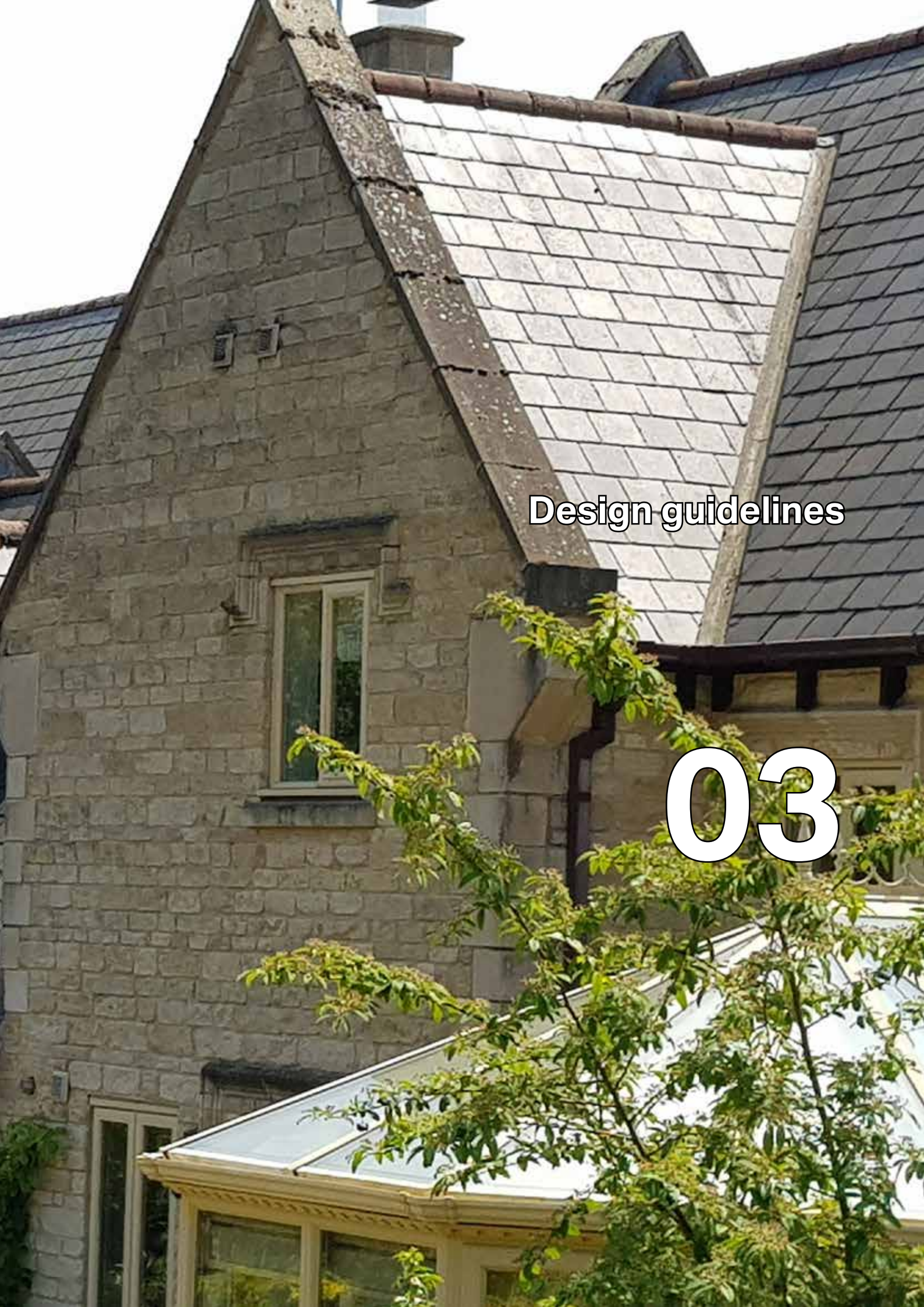
Figure 4: Variations in building orientations and massing contribute to the village's informal character.

Figure 5: The low-density, one-plot deep layout of the village enables easy access to open spaces.

Figure 7: The irregularity of the roofline adds visual interest in the informal and rural character of Barnwell.

Figure 6: Example of a detached house oriented to face the street.

Figure 8: View of Barnwell Brook.



Design guidelines

03

3. Design guidelines

This section sets out the guidance that will influence the design of potential new development and inform the retrofit of existing properties in Barnwell. Where possible, images from Barnwell are used to exemplify the design guidelines. Where these images not available, best practice examples from elsewhere are used.

3.1. General design principles

A brief reference to general design principles will be mentioned before the main part of the design guidance with reference to Barnwell.

The guidelines developed in the document focus on residential environments. However, new housing development should not be viewed in isolation. Considerations of design and layout must be informed by the wider context, considering not only the immediate neighbouring buildings but also the townscape and landscape of the wider locality.

The local pattern of streets and spaces, building traditions, materials and natural environment should all help to determine the character and identity of a development recognising that new building technologies are capable of delivering acceptable built forms and may sometimes be more efficient. It is important with any proposal that full account is taken of the local context and that the new design embodies the 'sense of place' and also meets the aspirations of people already living in that area.

As a first step, there are a number of design principles that should be present in any proposals. As general design guidelines, new development should:

- Respect the existing settlement pattern in order to preserve the character. Developments that contribute to coalescence with neighbouring settlements should be avoided;
- Integrate with existing paths, streets, circulation networks;
- Reinforce or enhance the established character of streets, greens and other spaces;
- Harmonise and enhance existing settlement in terms of physical form, architecture and land use;
- Retain and incorporate important existing features into the development;
- Respect surrounding buildings in terms of scale, height, form and massing;
- Adopt contextually appropriate materials and details;
- Provide adequate open space for the development in terms of both quantity and quality;
- Integrate housing tenures;
- Incorporate necessary services and drainage infrastructure without causing unacceptable harm to retained features;
- Ensure all components e.g. buildings, landscapes, access routes, parking and open space are well related to each other; and
- Aim for innovative design and eco-friendly buildings while respecting the architectural heritage and tradition of the area.

Street grid and layout

- Do the new points of access and street layout have regard for all users of the development; in particular pedestrians, cyclists and those with disabilities?
- What are the essential characteristics of the existing street pattern; are these reflected in the proposal?
- How will the new design or extension integrate with the existing street arrangement?
- Are the new points of access appropriate in terms of patterns of movement?
- Do the points of access conform to the statutory technical requirements?

Local green spaces, views and character

- What are the particular characteristics of this area which have been taken into account in the design; i.e. what are the landscape qualities of the area?
- How does the proposal affect the trees on or adjacent to the site?
- How does the proposal affect the flooding?
- Has the impact on the landscape quality of the area been taken into account?
- How does the proposal affect the local wildlife?

- In rural locations, has the impact of the development on the tranquillity of the area been fully considered?
- How does the proposal affect the character of a rural location?
- How does the proposal impact on existing views which are important to the area and how are these views incorporated in the design?
- Is there adequate amenity space for the development?
- Does the new development respect and enhance existing amenity space?
- Have opportunities for enhancing existing amenity spaces been explored?
- Will any communal amenity space be created? If so, how this will be used by the new owners and how will it be managed?

Gateway and access features

- What is the arrival point, how is it designed?
- Does the proposal maintain or enhance the existing gaps between settlements?
- Does the proposal affect or change the setting of a listed building or listed landscape?

Buildings layout and grouping

- What are the typical groupings of buildings?
- How have the existing groupings been reflected in the proposal?
- Are proposed groups of buildings offering variety and texture to the townscape?
- What effect would the proposal have on the streetscape?
- Does the proposal maintain the character of dwelling clusters stemming from the main road?
- Does the proposal overlook any adjacent properties or gardens? How is this mitigated?

Building line and boundary treatment

- What are the characteristics of the building line?
- How has the building line been respected in the proposals?
- Has the appropriateness of the boundary treatments been considered in the context of the site?

Building heights and roofline

- What are the characteristics of the roofline?
- Have the proposals paid careful attention to height, form, massing and scale?
- If a higher than average building(s) is proposed, what would be the reason for making the development higher?

Household extensions

- Does the proposed design respect the character of the area and the immediate neighbourhood, and does it have an adverse impact on neighbouring properties in relation to privacy, overbearing or overshadowing impact?
- Is the roof form of the extension appropriate to the original dwelling (considering angle of pitch)?
- Do the proposed materials match those of the existing dwelling?
- In case of side extension, does it retain important gaps within the street scene and avoid a 'terracing effect'?
- Are there any proposed dormer roof extensions set within the roof slope?
- Does the proposed extension respond to the existing pattern of window and door openings?
- Is the side extension set back from the front of the house?

Building materials and surface treatment

- Does the proposed material harmonise with the local materials?
- Does the proposal use high-quality materials?
- Have the details of the windows, doors, eaves and roof details been addressed in the context of the overall design?
- Does the new proposed materials respect or enhance the existing area or adversely change its character?

Car parking solutions

- What parking solutions have been considered?
- Are the car spaces located and arranged in a way that is not dominant or detrimental to the sense of place?

- Has planting been considered to soften the presence of cars?
- Does the proposed car parking compromise the amenity of adjoining properties?
- Have the needs of wheelchair users been considered?

Architectural details and contemporary design

- If the proposal is within a conservation area, how are the characteristics reflected in the design?
- Does the proposal harmonise with the adjacent properties? This means that it follows the height massing and general proportions of adjacent buildings and how it takes cues from materials and other physical characteristics.
- Does the proposal maintain or enhance the existing landscape features?
- Has the local architectural character and precedent been demonstrated in the proposals?
- If the proposal is a contemporary design, are the details and materials of a sufficiently high enough quality and does it relate specifically to the architectural characteristics and scale of the site?

3.2. Barnwell design principles

There are a set of design principles that are specific to Barnwell. These are based on the Parish character analysis presented in Chapter 2, and discussions with members of the Neighbourhood Plan Steering Group.

The following principles are intended to guide the design of developments:

- Site layout;
- Street layout and connectivity;
- Open spaces and wildlife;
- Character;
- Building modifications, extensions, and plot fills;
- SuDs; and
- Eco-design.

3.2.1. Site layout

Pattern and layout of buildings

New developments should respect the existing settlement pattern of the village in order to preserve its character. Suburban development patterns characterised by the repetition of uniform house types and patterns and car-dominated road designs should be avoided. Any proposal that would adversely affect the physical appearance of a rural lane or give rise to an unacceptable increase in the amount of traffic, noise or disturbance would be inappropriate.

Barnwell is characterised by a linear settlement pattern that should be retained where possible. Therefore, future developments in the form of in-filling within the existing settlement envelope are preferred over small or large developments spread elsewhere around the village. However, such in-filling must avoid blocking key views into the open countryside or important landmarks. New developments should also respect the character and appearance of the buildings within the Barnwell Conservation Area, the listed buildings, as well as those that contribute positively to the character of Barnwell.

Other issues that should be taken into account when planning for future growth are the provision of additional public rights of way, green spaces and biodiversity net gain; all of which enhance the rural character of the village. The relationship of Barnwell Brook with the village should be retained and, if possible, enhanced. New developments should respect the existing listed buildings in the area and their setting. During the design of new developments, inspiration should be drawn from existing architectural styles, height, scale and materials found within the Parish. These will be discussed in the next pages in more details.

Boundaries such as walls or hedges, whichever is most appropriate to the street, should enclose and define each street along the back edge of the pavement. In addition, properties should aim to provide rear and front gardens or at least a small buffer to the public sphere, for example, in the form of planting strips for cases where the provision of a front garden is not possible.

The layout of new developments should optimise the benefit of daylighting and passive solar gains as this can significantly reduce energy consumption.

Figure 9: Aerial view of Barnwell showing the linear settlement pattern to be preserved (Reference: Google Earth)

Gateways and access features

- Future design proposals should consider placing gateway and built elements to clearly mark the access or arrival to any potential developed sites. This is particularly important for developments at the edge of the settlement due to their location at the interface between the built-up area and the countryside.
- The sense of departure and arrival can often be achieved by a noticeable change in scale, enclosure, or road configuration. The gateway buildings or features should however reflect local character.
- Besides building elements acting as gateways, high-quality landscaping features could be considered appropriate to fulfil the same role.

Figure 10: The sense of arrival into the village centre is highlighted by recognisable landmarks (the telephone box) and a change in building enclosure introduced by the open space.

3.2.2. Street layout and connectivity

Barnwell is linked with A605 through Church Lane and Well Lane, both approaching the village from the north and north-west respectively. In general, the village has a limited road network of mostly narrow, quiet country lanes which contribute to its informal character that must be preserved in the design of future roads and retrofit of existing ones. The following principles should therefore be taken into account:

- New roads, if required, must meet the technical highways requirements as well as be considered a 'space' to be used by all, not just motor vehicles. It is essential for new developments to have roads designed for the needs of pedestrians and cyclists. Existing roads should be retrofitted for the same purpose and to discourage speeding;
- New roads should be linear with gentle meandering to provide interest and evolving views. Subtle variations in width may also be introduced to discourage speeding and reflect the layout of existing country roads in the Parish. New roads and paths should be laid out in a permeable pattern, allowing for multiple connections and a choice of routes, particularly on foot. Any cul-de-sacs should be relatively short and include provision for onward pedestrian links; and
- Vehicle access to properties should be from the road where possible.

Figure 11: Meandering street providing interest and evolving views.

Figure 12: Views to the villages from the public footpaths along Barnwell Brook.

Pedestrian and cycle connectivity

Barnwell Village is characterised by a network of footpaths and cycle routes which provides access to the green assets of the Parish. This allows people to get closer to nature, enjoy a tranquil environment and do physical exercise by walking and cycling. The following principles should be set to protect and even improve the existing network:

- All newly developed areas must retain or provide safe, direct, and attractive pedestrian links between neighbouring streets and local facilities. Establishing a robust pedestrian network a) across any new development and b) among new and existing development, is key in achieving good levels of permeability among any part of the Parish;.
- Vehicle gates at the entrance of new developments that create a gated community character must be avoided. However, speed signs could be used instead to make motorists aware of the speed limits in the village and contribute to the safety of pedestrians and cyclists;
- Footpaths framed by high fences must be avoided because they are unattractive and are perceived as unsafe;
- The various bridges across Barnwell Brook are a key components of the network of footpaths and enhance pedestrian connectivity in the village;
- Strategically placed signposts can assist pedestrians and cyclists with orientation and increase awareness of publicly accessible paths beyond the village. However, new signposts must respect the rural character of the parish and avoid creating visual clutter; and
- The resident recent resident survey highlighted a desire among residents for better and safer bicycle connections to Oundle and Barnwell Country Park.

Figure 13: Signposts and maps indicating pedestrian and cycling routes help make the network more legible.

Figure 14: Bridges across Barnwell Brook are a defining characteristic of Barnwell.

3.2.3. Open spaces and wildlife

Barnwell is a well-served by a various range of attractive green spaces around its edge, as for example historic parks and gardens and many designated local green spaces.

The harmonious insertion of the built environment into the surrounding landscape has created a pleasant environment for residents and visitors and helped preserve the local wildlife. Although there are no nationally designated ecology sites, there are several local wildlife sites in the parish including Barnwell Brook, Barwell Mill Fields, Barnwell Country Park and Barnwell Wold. For that reason, principles should be set to make sure that new development will preserve the treasures of the area. Those are:

- Development adjoining public open spaces and important gaps should enhance the character of these spaces by either providing a positive interface (i.e. properties facing onto them to improve natural surveillance) or a soft landscaped edge;
- New developments should incorporate existing native trees and shrubs and avoid unnecessary loss of flora and fauna. In particular, orchids can be found along the Brook. Water voles, otters, grass snakes and king fishers live in and alongside the Barnwell Brook and in Barnwell country parks. All of these are protected under the wildlife and countryside act 1981. Any trees or woodland lost to new development must be replaced. Native trees and shrubs should be used to reinforce the more rural character of the area;
- Abrupt edges to development with little vegetation or landscaping should be avoided and, instead, a comprehensive landscape buffering should be encouraged;
- Biodiversity and woodlands should be protected and enhanced where possible. In particular, water vole is a priority species on the Northamptonshire Biodiversity Action Plan and its habitats has to be protected under the Wildlife and Countryside Act. In addition, otters has also been found in the Brook;
- New development proposals should include the creation of new habitats and wildlife corridors where possible;
- The layout and spacing of new buildings should reflect the rural character and allow as much as possible for long-distance views of the countryside;
- The village is served with a network of public footpaths. Opportunities to create or enhance theses pedestrian links with green and open spaces must be sought; and
- Landscape schemes should be designed and integrated with the open fields that border the village to avoid coalescence with larger neighbouring settlements.

Figure 15: Water voles, otters, grass snakes and kingfishers can be found along Barnwell Brook.

Figure 16: Designated local green space, the Meadow, north of St Andrew's Church.

3.2.4. Character

Building scale and massing

- The majority of buildings in Barnwell do not exceed two storeys in height. Therefore, new buildings in Barnwell should be sympathetic in mass, height, and scale to the existing context;
- Subtle variation in height is encouraged to add visual interest, such as altering eaves and ridge heights. The bulk and pitch of roofs, however, must remain sympathetic to the tree canopy, the local vernacular, and the low-lying character of the village. Another way to achieve visual interest could be by varying frontage widths and plan forms. The application of a uniform building type throughout a development must be avoided; and
- The massing of new buildings should ensure a sufficient level of privacy and access to natural light for their occupants and avoid overshadowing existing buildings. This is important not only within the conservation area but also outside of it.

Figure 17: Buildings in Barnwell demonstrating diversity in scale and massing.

Roofline

The roofline in Barnwell is characterised by an attractive alternation between gables and eaves. The variety of roof materials including clay tiles, thatch, and Welsh slates also add visual interest to the roofline. Maintaining and enhancing visual interest in the roofline is a significant element of designing attractive places. There are certain elements that serve as guidelines in achieving a well-designed roofline, these include:

- The scale of the roof should always be in proportion with the dimensions of the building itself;
- Subtle changes and variations in the roofline should be ensured during the design process, however buildings must not have overly complex roof designs with too many different roof shapes;
- Locally traditional roof materials and detailing should be considered and implemented where possible in cases of new development; and
- Dormers can be used as a design element to add variety and interest to roofs. They must however be well-proportioned to the size of the roof and the windows on the same elevation, and their style must also be consistent with the local character.

The design of the roofline must also respond to the topography of the site and its surroundings in relation to inward long-distance views. New developments should therefore avoid locating taller buildings on crests and aim to keep rooflines below the tree canopy.

Figure 18: The existing variation in roof heights and building frontages creates visual interest.

Figure 19: The spire of St Andrew's is a recognisable local landmark and is visible from afar due to the low-lying roofline.

Fenestration

- Fenestration on public/private spaces increase the natural surveillance and enhance the attractiveness of the place. Long stretches of blank (windowless) walls should be avoided. Overall, considerations for natural surveillance, interaction, and privacy must be carefully balanced;
- Windows must be of sufficient size and number for abundant natural light;
- Site layout and building massing should ensure access to sunshine and avoid overshadowing neighbouring buildings. New developments should also maximise opportunities for long-distance views;
- A restrained palette of window styles and shapes must be used across a given façade to avoid visual clutter and dissonance; and
- In proximity to historic areas, fenestration must reflect an understanding of locally distinctive features such as scale, proportions, rhythm, materials, ornamentation, and articulation. This should, however, not result in pastiche replicas.

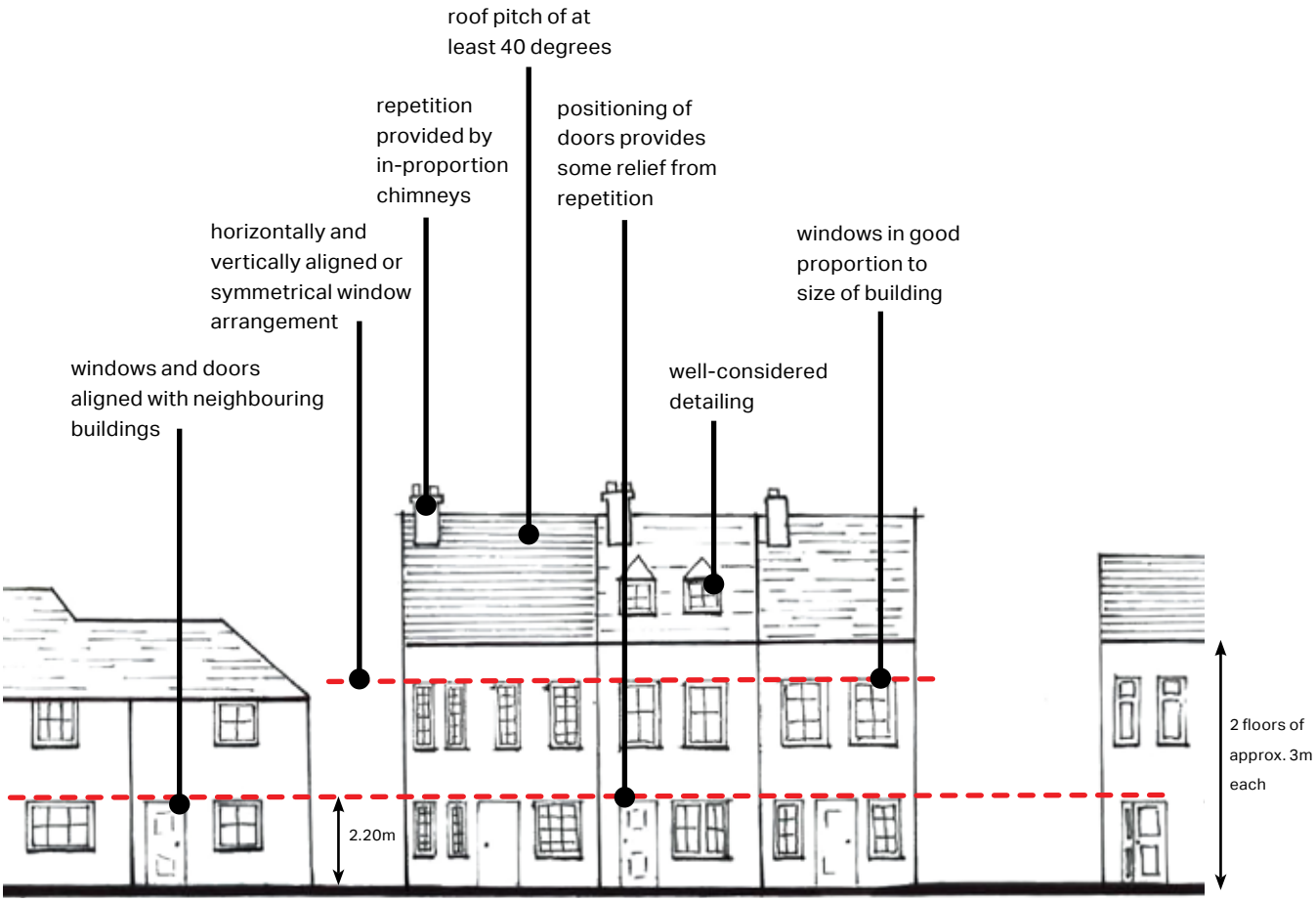


Figure 20: Design features in infill housing (centre), taking cues from existing homes (left and right).

Building line and boundary treatment

- Buildings should front onto streets. The building line should have subtle variations in the form of recesses and protrusions but will generally form a unified whole;
- Buildings should be designed to ensure that streets and/or public spaces have good levels of natural surveillance from buildings. This can be ensured by placing ground floor habitable rooms and upper floor windows facing the street;
- Natural boundary treatments should reinforce the sense of continuity of the building line and help define the street, appropriate to the character of the area. They should be mainly continuous hedges and low walls, as appropriate, made of traditional materials found elsewhere in the village such as local bricks and clunch. The use of either panel fencing or metal or concrete walls in these publicly visible boundaries should be avoided. Natural boundary treatments should not impair natural surveillance;
- Front gardens should be provided in all but exceptional circumstances; and
- If placed on the property boundary, waste storage should be integrated as part of the overall design of the property. Landscaping could also be used to minimise the visual impact of bins and recycling containers.

Figure 21: Well-maintained front building boundary creating an attractive interface between the public and private realms.

Figure 22: A variety in building setbacks illustrated by a house adjoining the back of the pavement (left) and another set behind a front garden (right).

Vehicle parking

In general, the over-provision of parking spaces is detrimental to the character of a place. Measures to ensure that the design of vehicle parking is sympathetic to the public realm are therefore needed. The guidelines presented below are in accordance with the Northamptonshire Parking Standards policies:

- Residential car parking should be a mix of on-plot side, front, garage depending on the most appropriate solution for each location;
- When placing parking at the front, the area should be designed to minimise the visual impact of vehicles and to blend with the existing streetscape and materials. The aim is to keep a sense of enclosure and to break the potential of a continuous area of car parking in front of the dwellings. This can be achieved by means of walls, hedging, planting, and use of differentiated quality paving materials;
- In new developments on-street parking bays can be incorporated into the overall width of the street i.e. demarcated by paving, planting and trees. The use of delineated parking bays using different materials and texture of road surfacing can add to the overall design of the new housing;
- When a residential development parking layout incorporates on-street parking, the street must be wide enough to accommodate parking without compromising access by emergency/waste collection vehicles and must not impair visibility;
- Where provided, garages should reflect or complement the architectural style of the main building rather than forming a distractive mismatched unit. In addition, their massing and placement should be visually subservient to the main building. All garages must be set sufficiently back from the street so that a vehicle can be parked in front of the garage without causing any obstruction to the highway. All garages must therefore be set at least 5.5m from the street; and
- It should be noted that many garages are not used for storing vehicles. For this reason designated parking on new developments is best provided on driveways therefore garages are not included as designated parking within developments. Consideration should also be given to the integration of bicycle parking and/or waste storage into garages.

Figure 23: On-plot parking in Barnwell.

Figure 24: On-street parking in Barnwell.

Architectural details

This section showcases some local building details which should be considered as positive examples to inform the design guidelines.

New development in Barnwell should preserve the existing character not only within the conservation area but also outside of it. There are many elements that contribute to the local character of the village and should be respected when new development comes.

Figure 25: Barnwell's roofline is characterised by a multitude of parapet gables, one- and two-storey buildings, and several dormer styles.

Figure 26: 'Cock and Hen' drystone boundary wall.

Figure 27: Contemporary buildings with small front gardens.

Figure 28: Houses with thatched roofs and casement windows with painted wood lintels. The picture also highlights an informal building line with different recesses and edge treatments.

Figure 29: A footbridge across Barnwell Brook built with the local stones that gives Barnwell its visual identity.

Figure 30: Two-storey house with hood moulds above casement windows. The spire of St Andrew's is visible in the background.

Materials

The materials and architectural detailing used throughout Barnwell contribute to the historic character of the area and reflect the local vernacular.

It is important that the materials used in proposed development are of a high-quality and reinforce local distinctiveness. Any future development proposals should demonstrate that the palette of materials has been selected based on an understanding of the surrounding built environment.

This section includes examples of building materials that contribute to the local vernacular of Barnwell and which could be used to inform future development.

COLLYWESTON STONE ROOF

YELLOW BRICK

CASEMENT WINDOW WITH WOOD LINTEL

GABLED PORCH

GREY CROPPED STONE

CLAY PANTILES

THATCHED ROOF

WELSH SLATE

CLAY PLAINTILES

'COCK AND HEN' LOW STONE WALL

GABLED WALL DORMER

CLIPSHAM STONE
PARAPET GABLE

3.2.5. Building modifications, extensions and plot fills

Extensions to dwellings can have a significant impact not only on the character and appearance of the building, but also on the street scene within which it sits. A well-designed extension can enhance the appearance of its street, whereas an unsympathetic extension can have a harmful impact, create problems for neighbouring residents and affect the overall character of the area.

The Planning Portal contains more detailed information on building modifications and extensions, setting out what is usually permitted without planning permission (permitted development) as well as what requires planning permission. Barnwell, for example, contains designated land in the form of a Conservation Area, where planning permission is required. However, the same principles should be followed outside of the Conservation Area, as these areas also contribute to the distinctive character of the entire village. The following principles should be applied:

- Extensions should be appropriate to the scale, massing, and design of the main building, and complement the streetscape. Generally, they should be designed to look subservient to the original building;
- Alteration and extensions of historic buildings should respect the host building. Replacement of historic and traditional features, such as timber windows and doors with uPVC and other non-traditional materials should be avoided. However, if used, it is important to be of high-quality so as to create a nice aesthetic result;
- Extensions are more likely to be successful if they do not exceed the height of the original or adjacent buildings. Two-storey extensions should be constructed with the same angle of pitch as the existing roof;
- The design, materials and architectural detailing of extensions should be high-quality and respond to the host building and the local character of the neighbourhood plan area; and
- Impacts upon the space surrounding the building such as overlooking and overshadowing should be considered.

3.2.6. SuDs

Definition

The term SuDS stands for Sustainable Drainage Systems. It covers a range of approaches to managing surface water in a more sustainable way to reduce flood risk and improve water quality whilst improving amenity benefits.

SuDS work by reducing the amount and rate at which surface water reaches the combined sewer system. Usually, the most sustainable option is collecting this water for reuse, for example in a water butt or rainwater harvesting system, as this has the added benefit of reducing pressure on important water sources.

Where reuse is not possible, there are two alternative approaches using SuDS:

- Infiltration, which allows water to percolate into the ground and eventually restore groundwater; and
- Attenuation and controlled release, which holds back the water and slowly releases it into the sewer network. Although the overall volume entering the sewer system is the same, the peak flow is reduced. This reduces the risk of sewers overflowing. Attenuation and controlled release options are suitable when either infiltration is not possible (for example where the water table is high or soils are clay) or where infiltration could be polluting (such as on contaminated sites).

The most effective type or design of SuDS would depend on site-specific conditions such as underlying ground conditions, infiltration rate, slope, or presence of ground contamination. However, a number of overarching principles can be applied:

- Manage surface water as close to where it originates as possible;
- Reduce runoff rates by facilitating infiltration into the ground or by providing attenuation that stores water to help slow its flow down so that it does not overwhelm water courses or the sewer network;
- Improve water quality by filtering pollutants to help avoid environmental contamination;
- Form a 'SuDS train' of two or three different surface water management approaches;
- Integrate into development and improve amenity through early consideration in the development process and good design practices;
- The design of SuDS should include vegetation in order to slow and clean the water whilst increasing the biodiversity value of the area; and
- The design of SuDS must be sensitively done to augment the landscape and wherever possible provide biodiversity and amenity benefits.

SuDS are often as important in areas that are not directly in an area of flood risk themselves, as they can help reduce downstream flood risk by storing water upstream. Best practice SuDS schemes link the water cycle to also help make the most efficient use of water resources by reusing surface water.

Figure 31: Examples of SuDs designed as a public amenity and fully integrated into the design of the public realm in Stockholm.

Attenuation ponds and detention basins

Attenuation ponds are permanent bodies of water with stormwater storage capacity above the permanent water level. Detention basins are similar to attenuation ponds, but without a permanent pool of water.

Detention basins provide more attenuation storage per unit surface area than attenuation ponds of the same depth, so may be used when space is more limited. However, attenuation ponds are preferred due to the greater amenity and biodiversity benefits offered.

Attenuation ponds must be of a natural appearance to complement the rural character of the site. They can also be of educational benefit to schools and the local community.

Detention basins will be vegetated to provide greater water quality benefits, such as through the removal of sediment. They should be designed to permit alternative uses when not in use, where appropriate.

Attention ponds and detention basins must actively contribute as new public amenities and green spaces. It must be expected that people will interact with the water and landscaping, therefore they must be designed for safe public access and not fenced off.

Figure 32: Attenuation ponds and detention basins must be integrated into the green space strategy and designed with safe public access in mind so that they do not necessitate fencing. Designs similar to the facility in this picture must be avoided because they are dangerous and have unattractive fencing.

Bioretention systems

Bioretention systems, including soak away and rain gardens, can be used within each development, along verges, and in semi-natural green spaces. They must be designed to sit cohesively with the surrounding landscape, reflecting the natural character of the Parish. Vegetation must reflect that of the surrounding environment.

They can be used at varying scales, from small-scale rain gardens serving individual properties, to long green-blue corridors incorporating bioretention swales, tree pits and mini-wetlands, serving roads or extensive built-up areas.

These planted spaces are designed to enable water to infiltrate into the ground. Cutting of downpipes and enabling roof water to flow into rain gardens can significantly reduce the runoff into the sewer system. The UK Rain Garden Design Guidelines provides more detailed guidance on their feasibility and suggests planting to help improve water quality as well as attract biodiversity[1].

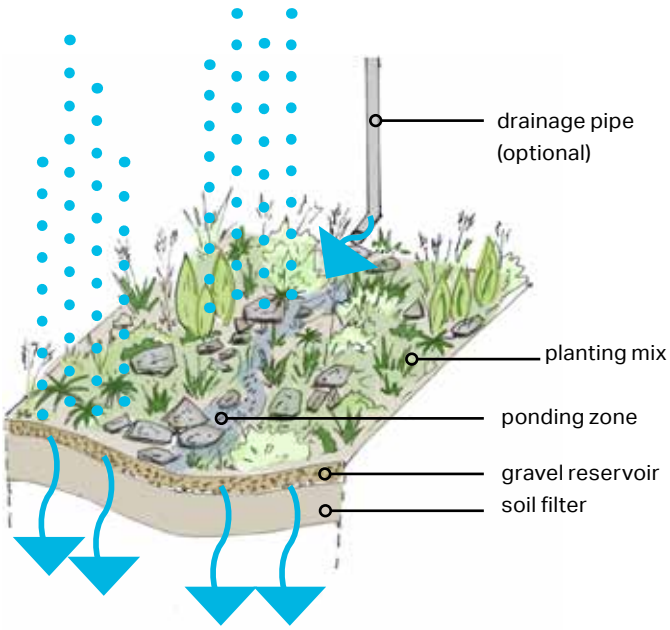


Figure 33: Diagram illustrating the functioning of a rain garden.

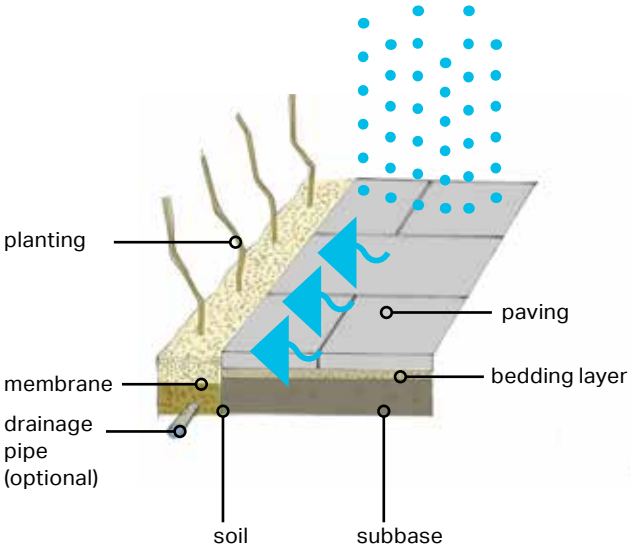


Figure 34: Diagram illustrating the functioning of a soak away garden.

1. UK Rain Gardens Guide. Available at: https://raingardens.info/wp-content/uploads/2012/07/UKRainGarden-Guide.pdf

Storage and slow release

Rainwater harvesting refers to the systems allowing to capture and store rainwater as well as those enabling the reuse in-situ of grey water. Simple storage solutions, such as water butts, can help provide significant attenuation. To be able to continue to provide benefits, there has to be some headroom within the storage solution. If water is not reused, a slow release valve allows water from the storage to trickle out, recreating capacity for future rainfall events. New digital technologies that predict rainfall events can enable stored water to be released when the sewer has greatest capacity to accept it.

These systems involve pipes and storage devices that could be unsightly if added without an integral vision for design. Therefore, some design recommendation would be to:

- Conceal tanks by cladding them in complimentary materials;
- Use attractive materials or finishing for pipes;
- Combine landscape/planters with water capture systems;
- Use of underground tanks; and
- Utilise water bodies for storage.

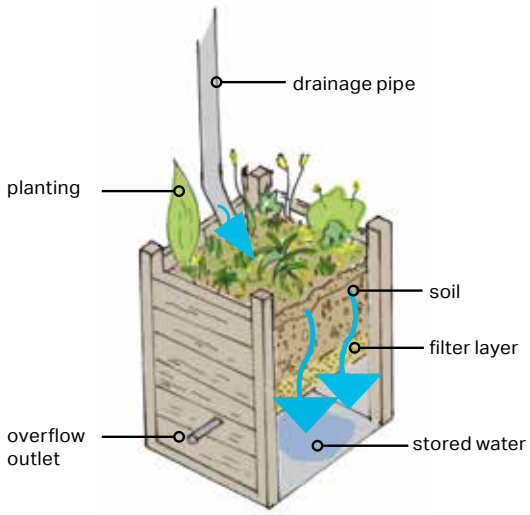


Figure 36: Diagram illustrating the functioning of a stormwater planter.

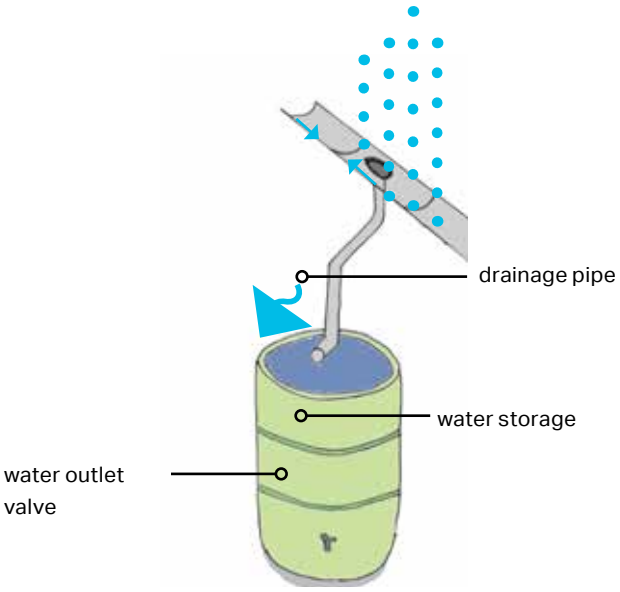


Figure 37: Diagram illustrating the functioning of a water butt.

Figure 35: Examples of water butts used for rainwater harvesting in Reach, Cambridgeshire.

Permeable paving

Most built-up areas, including roads and driveways, increase impervious surfaces and reduce the capacity of the ground to absorb runoff water. This in turn increases the risks of surface water flooding. Permeable pavements offer a solution to maintain soil permeability while performing the function of conventional paving. The choice of permeable paving units must be made depending on the local context; the units may take the form of unbound gravel, clay pavers, or stone setts.

Permeable paving can be used where appropriate on footpaths, public squares, private access roads, driveways, and private areas within the individual development boundaries. In addition, permeable pavement must also:

- Respect the local material palette;
- Help to frame the buildings;
- Create an arrival statement;
- Be in harmony with the landscape treatment of the property; and
- Help define the property boundary.

Regulations, standards, and guidelines relevant to permeable paving and sustainable drainage are listed below:

- Flood and Water Management Act 2010, Schedule 3;[1]
- The Building Regulations Part H – Drainage and Waste Disposal;[2]
- Town and Country Planning (General Permitted Development) (England) Order 2015;[3]
- Sustainable Drainage Systems - non-statutory technical standards for sustainable drainage systems;[4]
- The SuDS Manual (C753);[5]
- BS 8582:2013 Code of practice for surface water management for development sites;[6]
- BS 7533-13:2009 Pavements constructed with clay, natural stone or concrete pavers;[7] and
- Guidance on the Permeable Surfacing of Front Gardens.[8]

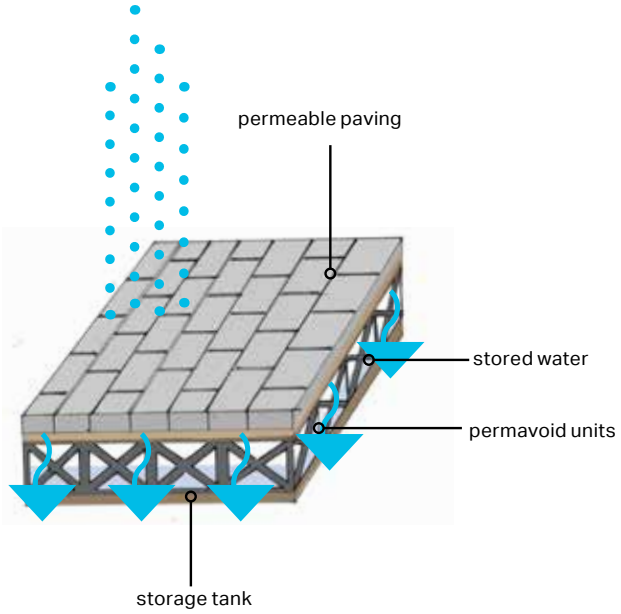


Figure 38: Diagram illustrating the functioning of a soak away.

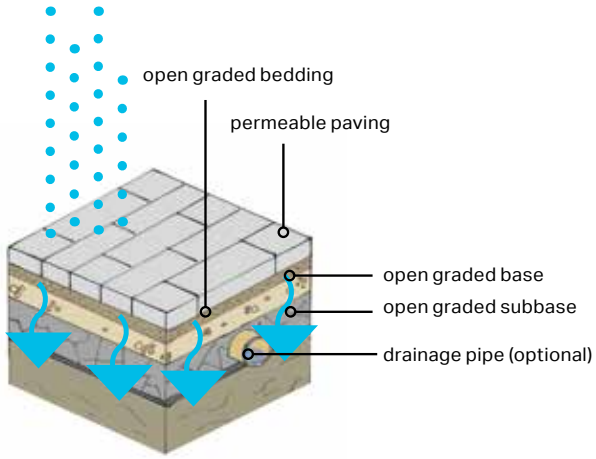


Figure 39: Diagram illustrating the functioning of a soak away.

[1] Great Britain (2010). *Flood and Water Management Act, Schedule 3*. Available at: http://www.legislation.gov.uk/ukpga/2010/29/schedule/3

[2] Great Britain (2010). *The Building Regulations Part H – Drainage and Waste Disposal*. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/442889/BR_PDF_AD_H_2015.pdf

[3] Great Britain (2015). *Town and Country Planning (General Permitted Development) (England) Order 2015*. Available at: http://www.legislation.gov.uk/uksi/2015/596/pdfs/uksi_20150596_en.pdf

[4] Great Britain. Department for Environment, Food and Rural Affairs (2015). *Sustainable drainage systems – non-statutory technical standards for sustainable drainage systems*. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/415773/sustainable-drainage-technical-standards.pdf

[5] CIRIA (2015). *The SuDS Manual (C753)*.

[6] British Standards Institution (2013). *BS 8582:2013 Code of practice for surface water management for development sites*. Available at: https://shop.bsigroup.com/ProductDetail/?pid=000000000030253266

[7] British Standards Institution (2009). *BS 7533-13:2009 Pavements constructed with clay, natural stone or concrete pavers*. Available at: https://shop.bsigroup.com/ProductDetail/?pid=000000000030159352

[8] Great Britain. Ministry of Housing, Communities & Local Government (2008). *Guidance on the Permeable Surfacing of Front Gardens*. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/7728/pavingfrontgardens.pdf

Swales

Swales are the preferred option for water conveyance due to their provision of biodiversity and amenity benefits.

Swales should only be used where they can be integrated with the landscape design and their character will suit the surroundings, with soft, natural features providing contribution to biodiversity.

They can be located within development packages to convey surface water to attenuation features.

Due to their open, linear features, crossing points are required where they intersect with access routes, which will require careful design for future maintenance. Therefore, swales are better suited to locations where fewer crossing points would be required, such as alongside buffer zones or perimeter roads encircling a development plot.

Figure 40: Roadside swale in Stockholm. Note: design and materials to be adapted to the rural and historic character of Barnwell.

Figure 41: Attenuation swale with check dam (@Susdrain). Note: design and materials to be adapted to the rural and historic character of Barnwell.

3.2.7. Eco design

Energy efficient or eco design combines all-round energy efficient construction, appliances, and lighting with commercially available renewable energy systems, such as solar water heating and solar electricity.

Starting from the design stage, there are strategies that can be incorporated towards passive solar heating, cooling and energy efficient landscaping which are determined by local climate and site conditions. The retrofit of existing buildings with eco design solutions should also be encouraged.

The aim of these interventions is to reduce overall home energy use as cost effectively as the circumstances permit. Final step towards a high-performance building would consist of other on site measures towards renewable energy systems.

It must be noted that eco design principles do not prescribe a particular architectural style and can be adapted to fit a wide variety of built characters. A wide range of solutions is also available to retrofit existing buildings, included listed properties, to improve their energy efficiency[1].

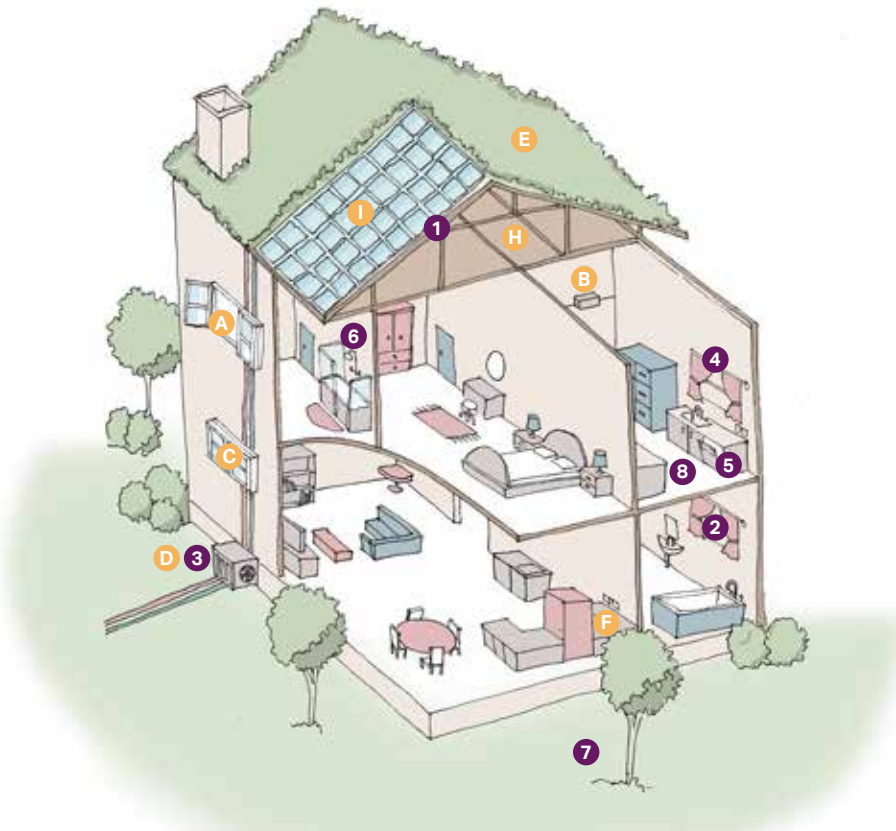


Figure 42: Diagram showing low-carbon homes in both existing and new build conditions.

Existing homes

1. **Insulation** in lofts and walls (cavity and solid)
2. **Double or triple glazing with shading** (e.g. tinted window film, blinds, curtains and trees outside)
3. **Low- carbon heating** with heat pumps or connections to district heat network
4. **Draught proofing** of floors, windows and doors
5. **Highly energy- efficient appliances** (e.g. A++ and A+++ rating)
6. **Highly waste- efficient devices** with low-flow showers and taps, insulated tanks and hot water thermostats
7. **Green space (e.g. gardens and trees)** to help reduce the risks and impacts of flooding and overheating
8. **Flood resilience and resistance** with removable air back covers, relocated appliances (e.g. installing washing machines upstairs), treated wooden floors

New build homes

A. **High levels of airtightness**
B. **More fresh air** with the mechanical ventilation and heat recovery, and passive cooling
C. **Triple glazed windows and external shading** especially on south and west faces
D. **Low-carbon heating** and no new homes on the gas grid by 2025 at the latest
E. **Water management and cooling** more ambitious water efficiency standards, green roofs and reflective walls
F. **Flood resilience and resistance** e.g. raised electrical, concrete floors and greening your garden
H. **Construction and site planning** timber frames, sustainable transport options (such as cycling)
I. **Solar panel**

1. Historic England. https://historicengland.org.uk/advice/technical-advice/energy-efficiency-and-historic-buildings/

Servicing

With modern requirements for waste separation and recycling, the number and size of household bins have increased. The issue poses a problem in relation to the aesthetics of the property if bins are left without a design solution.

Waste and bicycle storage, if placed on the property boundary, must be integrated with the overall design of the boundary. A range of hard and soft landscaping treatments such as hedges, trees, flower beds, low walls, and high-quality paving materials could be used to minimise the visual impact of bins and recycling containers.

The image and diagrams on this page illustrate design solutions for servicing units within the plot.

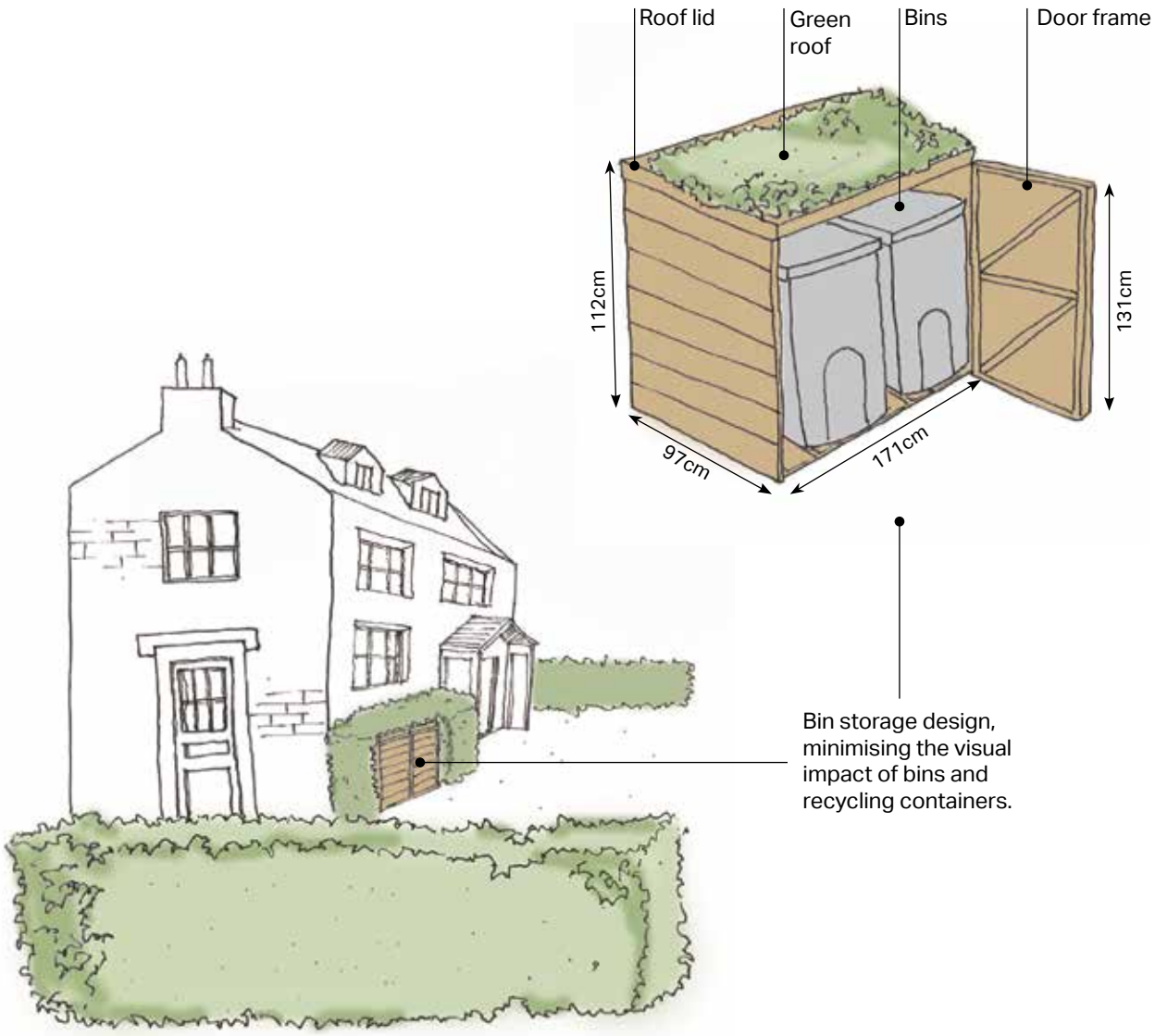


Figure 43: Bin storage design solution.

Solar roof panels

The aesthetics of solar panels over a rooftop can be a matter of concern for many homeowners. Some hesitate to incorporate them because they believe these diminish the home aesthetics in a context where looks are often a matter of pride amongst homeowners. This is especially acute in the case of historic buildings and conservation areas, where there has been a lot of objection for setting up solar panels on visible roof areas. Consequently, some design solutions are suggested below:

On new builds:

- Design solar panel features from the start so that they form a part of the design concept. Some attractive options are solar shingles and photovoltaic slates; and
- Use the solar panels as a material in their own right.

On retrofits:

- Analyse the proportions of the building and roof surface in order to identify the best location and sizing of panels;
- Aim to conceal wiring and other necessary installations;
- Consider introducing other tile or slate colours to create a composition with the solar panel materials; and
- Conversely, aim to introduce contrast and boldness with proportion. For example, there has been increased interest in black panels due to their more attractive appearance. Black solar panels with black mounting systems and frames can be an appealing alternative to blue panels.

Figure 44: Integration of solar panels on the south-facing pane of the roof of a newly built house.

Figure 45: Use of shingle-like solar panels on a slate roof, with the design and colour of the solar panels matching those of the slate tiles.

Delivery

04

4. Delivery

The Design Guidelines will be a valuable tool in securing context-driven, high-quality development in Barnwell. They will be used in different ways by different actors in the planning and development process, as summarised in the table.

Actors	How They Will Use the Design Guidelines
Applicants, developers, and landowners	As a guide to community and Local Planning Authority expectations on design, allowing a degree of certainty – they will be expected to follow the Guidelines as planning consent is sought.
Local Planning Authority	As a reference point, embedded in policy, against which to assess planning applications. The Design Guidelines should be discussed with applicants during any pre-application discussions.
Parish Council	As a guide when commenting on planning applications, ensuring that the Design Guidelines are complied with.
Community organisations	As a tool to promote community-backed development and to inform comments on planning applications.
Statutory consultees	As a reference point when commenting on planning applications.

Figure 46: xxx

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