AECOM

BARROW-CUM-DENHAM

Design Guidance and Codes

locality
the power of community

FINAL REPORT

December 2020

Quality information

Prepared by	Checked by	Approved by
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Senior Urban Designer	Director	Director

Revision History

Revision	Revision date	Details	Name	Position
4	December 2020	Review	Annabel Osborne	Neighbourhood Planning Officer Locality
3	November 2020	Review	Ben Castell	Director
2	November 2020	Review	Mark Howard Zigurd Kronbergs	Barrow-cum-Denham Parish Council
1	September 2020	Review, site visit	Ben Castell	Director
0		Research, site visit, drawings	Jing Yuan	Senior 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 Barrow-cum-Denham 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 for new builds. It advises on physical development, helping to create distinctive places that are integrated with the existing built environment and landscape.

1.2. Objective

The main objective of this report is to develop design guidelines that any potential development in Barrow-cum-Denham should follow in order to retain and protect the rural character of the area whilst meeting local housing needs. New development should respect Barrow-cum-Denham's historic character and architecture, its high-quality landscape and setting, retain and enhance a high quality of life for all ages, encourage sustainable life style and improve natural environment.

1.3. Process

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

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

1.4. Area of study

The parish of Barrow-cum-Denham is located in the West Suffolk district of Suffolk. It lies about 6 miles west of Bury St Edmunds, 9 miles east of Newmarket, and 30 miles away from both Cambridge and Ipswich. The Neighbourhood Plan area comprises two distinctive settlements of Barrow and Denham.

Barrow-cum-Denham has a good local road network linking to Bury St Edmunds and Newmarket, and is well served by the A14 which is 2 miles north of the centre of Barrow. The nearest railway stations are Kennet, Bury St Edmunds and Newmarket, which provide connections to the Ipswich-Cambridge line. Public transport also includes buses 312 and 985 with services to Bury St Edmunds, Newmarket and Risby.

At the 2011 census the population of Barrow and Denham were 1, 677 and 171 respectively.[1]

[1] nomis: https://www.nomisweb.co.uk/

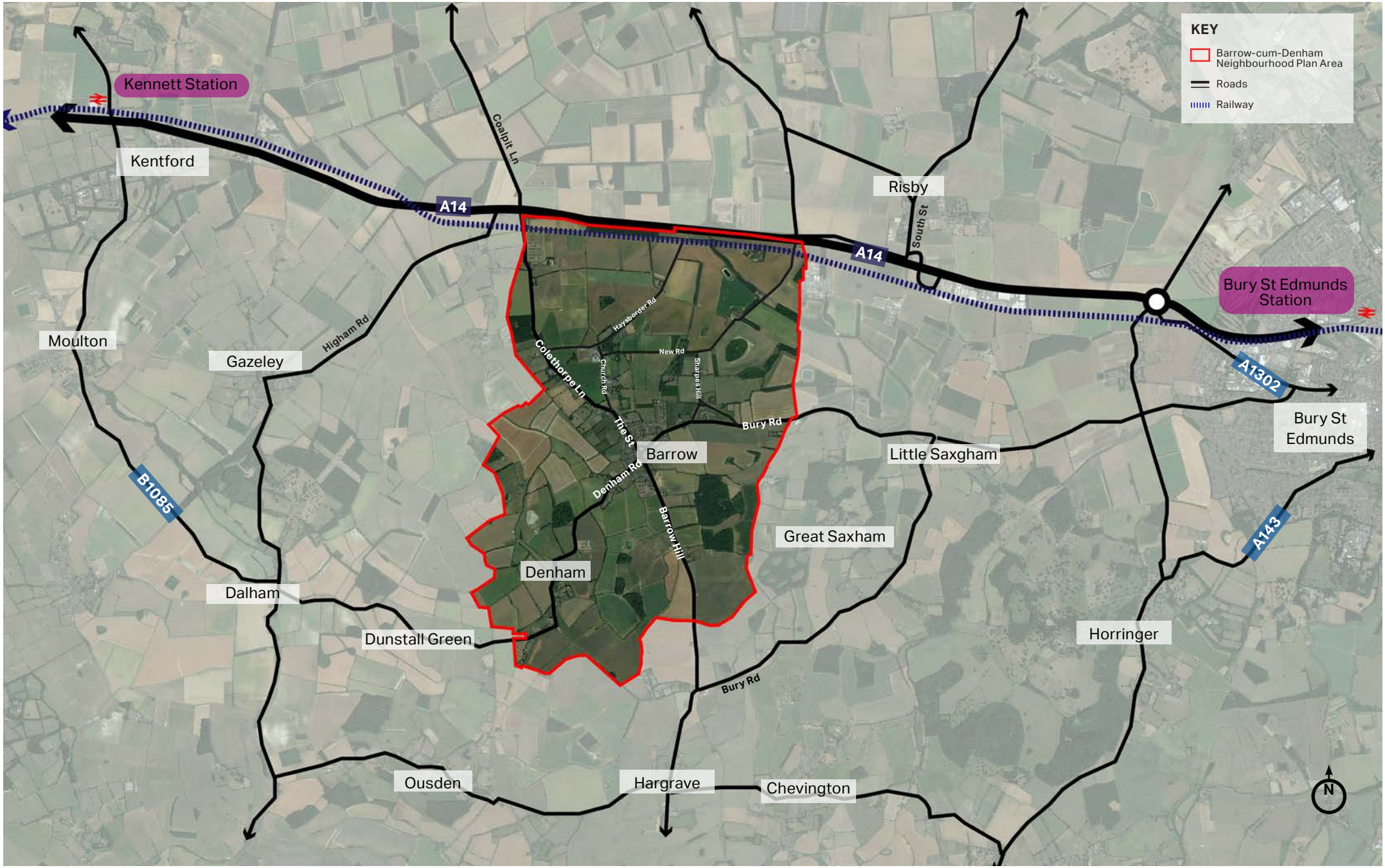


Figure 1: Neighbourhood Plan/Parish area.

Engagement

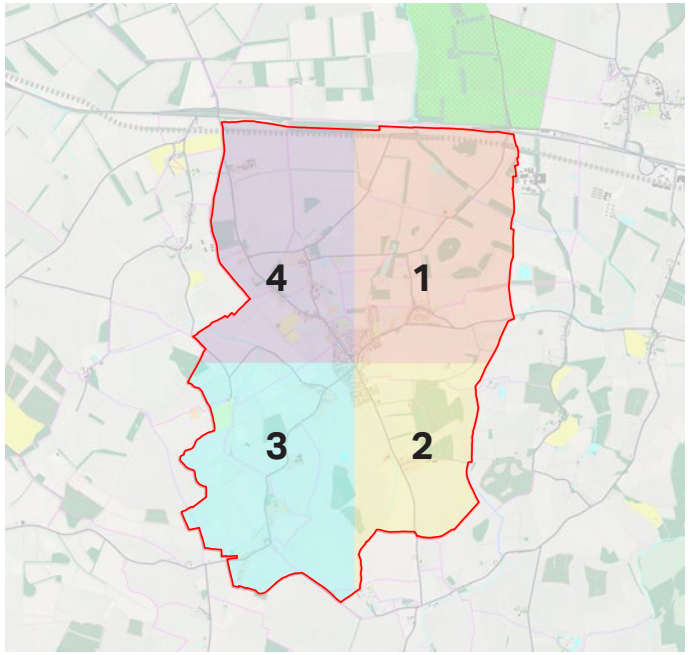
02

2. Engagement

In June 2020, the Parish Council (PC) notified the parish of the consultation via PC web-site, PC notice-boards, on-line postings on Barrow Village and Barrow Life Facebook Pages and delivered a notice of the consultation to households in the parish. Hard copies of the questionnaire were made available from the Parish Clerk, village Post Office and via Barrow Good Neighbours volunteers. In total, 375 responses were received.

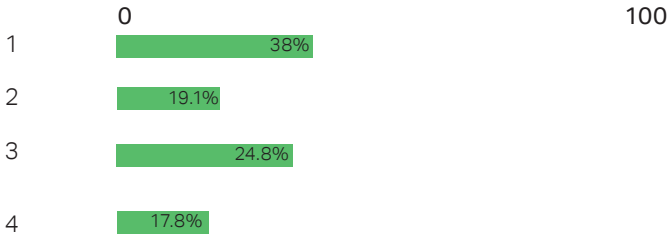
Here, some of the results of the survey are set out graphically to give an understanding of people's views on important issues concerning demographic information, amenities, future development, environment and infrastructure.

These results inform the design guidance.

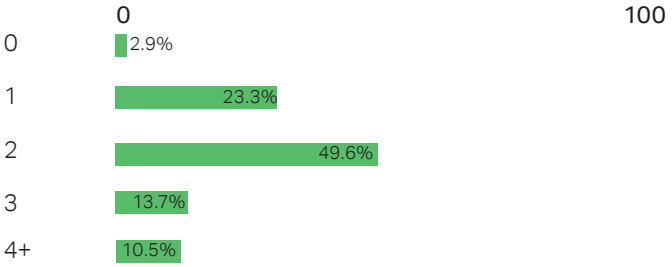


1. Demographic information

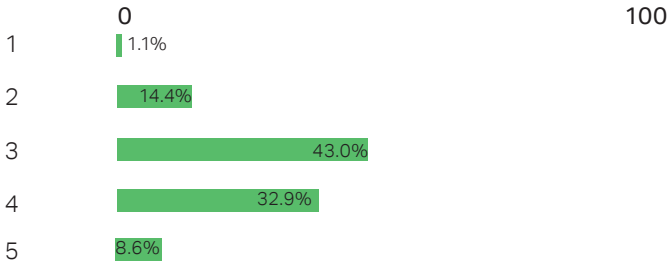
Question 3 - Please refer to the map. Which sector of the parish do you live in?



Question 8 - How many vehicles do you have at your address?

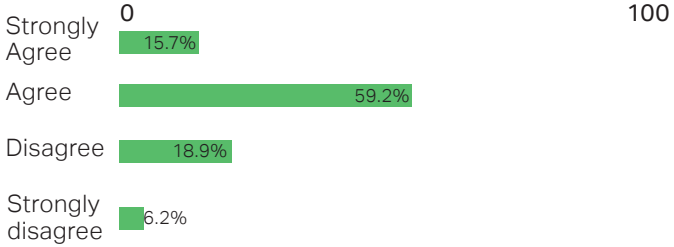


Question 11 - How many bedroom do you have?

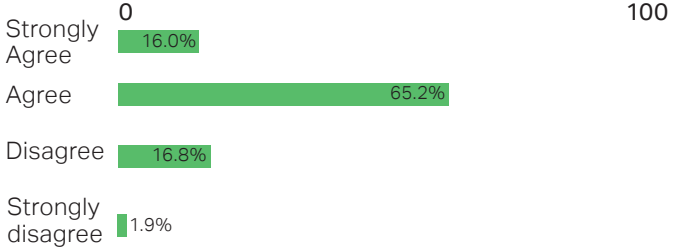


2. Amenities

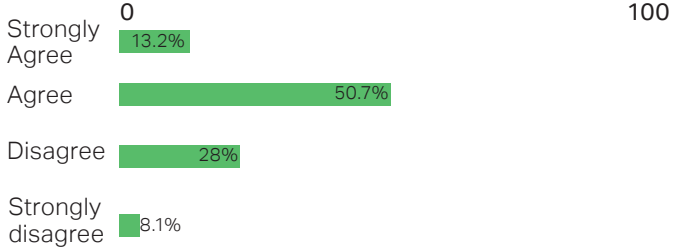
Question 15 - Barrow-cum-Denham has sufficient sports & leisure facilities



Question 16 - Barrow-cum-Denham has sufficient business premises

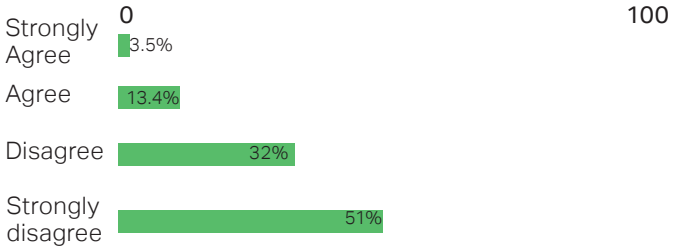


Question 16 - The health centre / surgery facilities in Barrow-cum-Denham are adequate for the current population



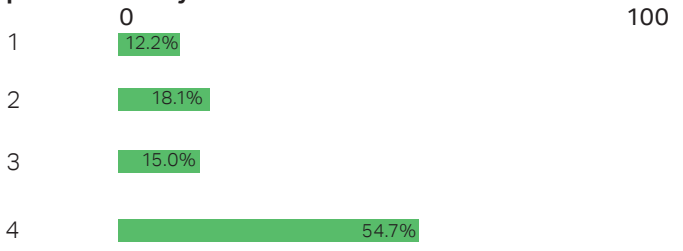
3. Future development

Question 27 - I think Barrow-cum-Denham needs more housing



Question 31 - Choose the best option:

Question 32 - Please refer to the map. If more homes had to be built in the parish, in which of the sectors would you prefer that they were built?



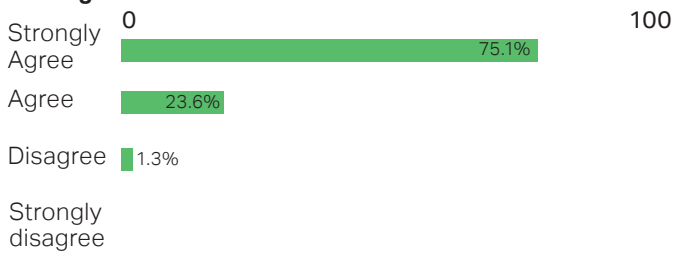
4. Environment

Question 34 - Hedgerows and trees need to be preserved

Question 35 - I value the wildlife in and around Barrow-cum-Denham

Question 34 - Barrow-cum-Denham and its various settlements should retain their individual and rural character

Question 34 - I value the historic buildings and their settings in Barrow-cum-Denham.

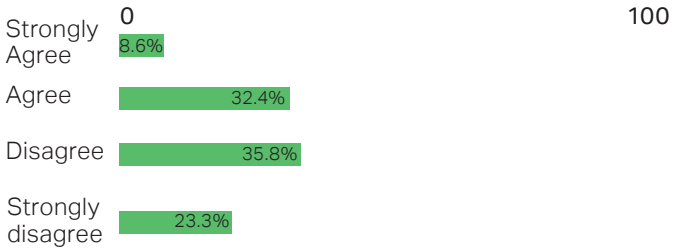


Question 39 - Rural footpaths should not be destroyed or altered in order to build new housing developments

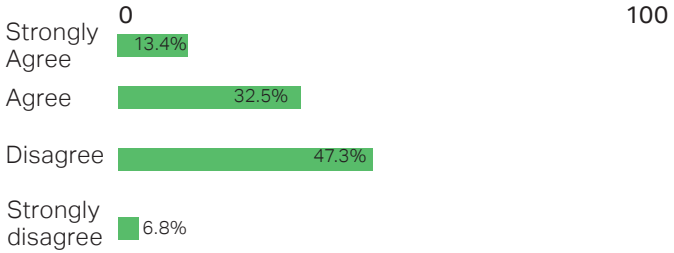
Question 40 - Green spaces around Barrow-cum-Denham should be protected from development

5. Infrastructure

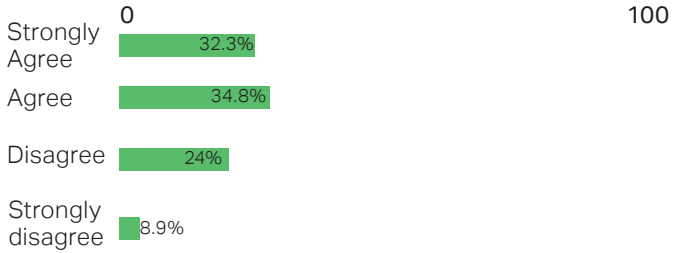
Question 42 - The roads in & around Barrow-cum-Denham are adequate for current levels of traffic.



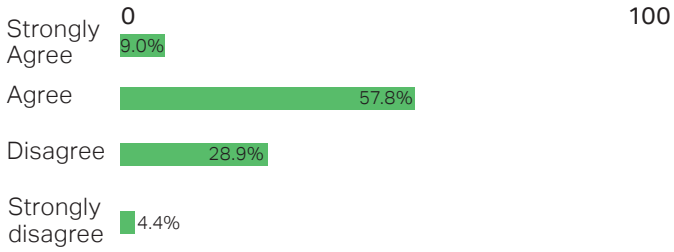
Question 44 - Traffic congestion is an issue in Barrow-cum-Denham.



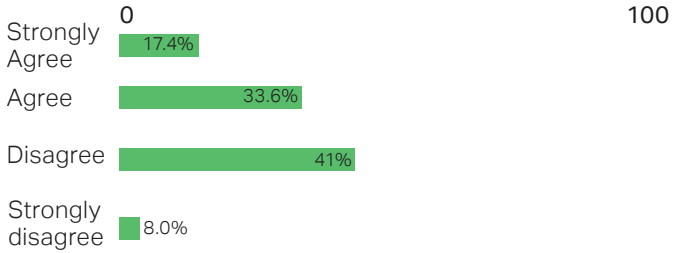
Question 46 - Traffic calming along the main roads in Barrow is required



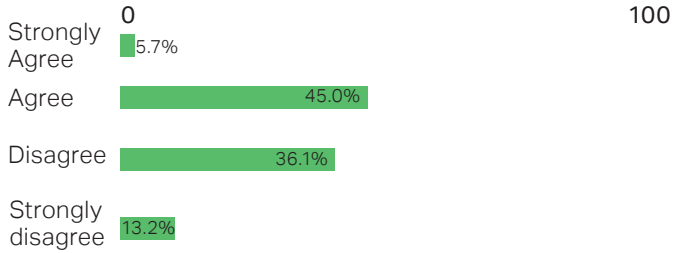
Question 47 - Barrow-cum-Denham has sufficient car parking spaces.



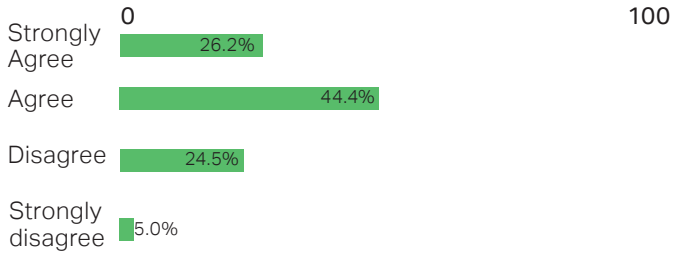
Question 48 - More restriction for on-road parking is required



Question 49 - The pavements in Barrow-cum-Denham are adequate.



Question 50 - There is a need for more cycle paths in and around Barrow-cum-Denham



Local character analysis

03

3. Local character analysis

This section outlines the broad physical, historical, and contextual characteristics of Barrow-cum-Denham. It includes an analysis of the landscape and open spaces, streets and public realm, settlement pattern, pattern and layout of buildings, their heights and rooflines, etc. in the area. The images in this section have been used to portray the built form of Barrow-cum-Denham.

2.1. Landscape character

Barrow-cum-Denham remains a rural tranquil landscape. The built-up areas are surrounded by agricultural fields and woodland with some gently undulating landforms and valleys. It is located within two National Character Areas (NCAs): The Brecks [1] (northern section); South Suffolk and North Essex Clayland [2] (central and southern sections). The Suffolk Landscape Character Assessment (LCA)[3] identified most of the settlements of Barrow and Burthorpe are within the 'Plateau Estate Farmlands' Landscape Typology. The Denham settlement is mainly described as an 'Undulating estate farmlands' Landscape Typology. A corridor of land alongside Cavenham Stream sits under the 'Wooded Chalk Slopes' Typology. This setting strongly contributes to the overall quality and 'sense of place', beauty, history and character of the Parish.

[1] NCA Profile: *85. The Brecks (NE385)*. Available at: http://publications.naturalengland.org.uk/file/5556928761561088

[2] NCA Profile: *86 South Suffolk and North Essex Clayland (NE515)*. Available at: http://publications.naturalengland.org.uk/file/5148978341478400

[3] Suffolk Landscape Character Assessment. Available at: https://suffolklandscape.org.uk/

The Parish contains ancient woodlands, Wilsummer Woodland County Wildlife Sites and Biodiversity Action Plan (BAP) Priority Habitats (including ancient semi-natural woodland). There are a few locations which have been identified as containing protected BAP species[4] within the existing built up area. European designated site buffer zones[5] also cover the Neighbourhood Plan area (particularly for Stone Curlew).

Furthermore, there are several landscape designations directly to the north of the Neighbourhood Plan area, including the Breckland Special Protection Area (SPA)[6] and Breckland Farmland Site of Special Scientific Interest (SSSI);[7] Black Ditches, Cavenham SSSI; Rex Graham Reserve Special Areas of Conservation (SAC);[8] Cavenham Heath National Nature Reserve (NNR).[9]

[4] "BAP priority species were those that were identified as being the most threatened and requiring conservation action under the Biodiversity Action Plan."*JNCC*. https://jncc.gov.uk/our-work/uk-bap-priority-species/

[5] "Buffer zones are areas peripheral to a specific protected area, where restrictions on resource use and special development measures are undertaken in order to enhance the conservation value of the protected area." *biodiversity a-z*. https://www.biodiversitya-z.org/content/buffer-zones

[6] "Special Protection Areas are protected areas for birds in the UK." *JNCC*. https://jncc.gov.uk/our-work/special-protection-areas-overview/

[7] "SSSI are the finest sites for wildlife and natural features in England, supporting many characteristic, rare and endangered species, habitats and natural features." (https://naturalengland-defra.opendata.arcgis.com/datasets/f10cbb4425154bfda349ccf493487a80_0)

[8] "SAC are strictly protected sites designated under the EC Habitats Directive." *JNCC*.https://sac.jncc.gov.uk/

[9] NNRs were established to protect some of our most important habitats, species and geology, and to provide 'outdoor laboratories' for research. *GOV.UK*. https://www.gov.uk/government/collections/national-nature-reserves-in-england

Parts of the Parish fall within Flood Zone 3, although development has avoided areas of flood risk.

Figure 2: View to the open countryside from Bury Road in Burthorpe.

Figure 3: View to the open countryside from St Mary's Church in Denham .

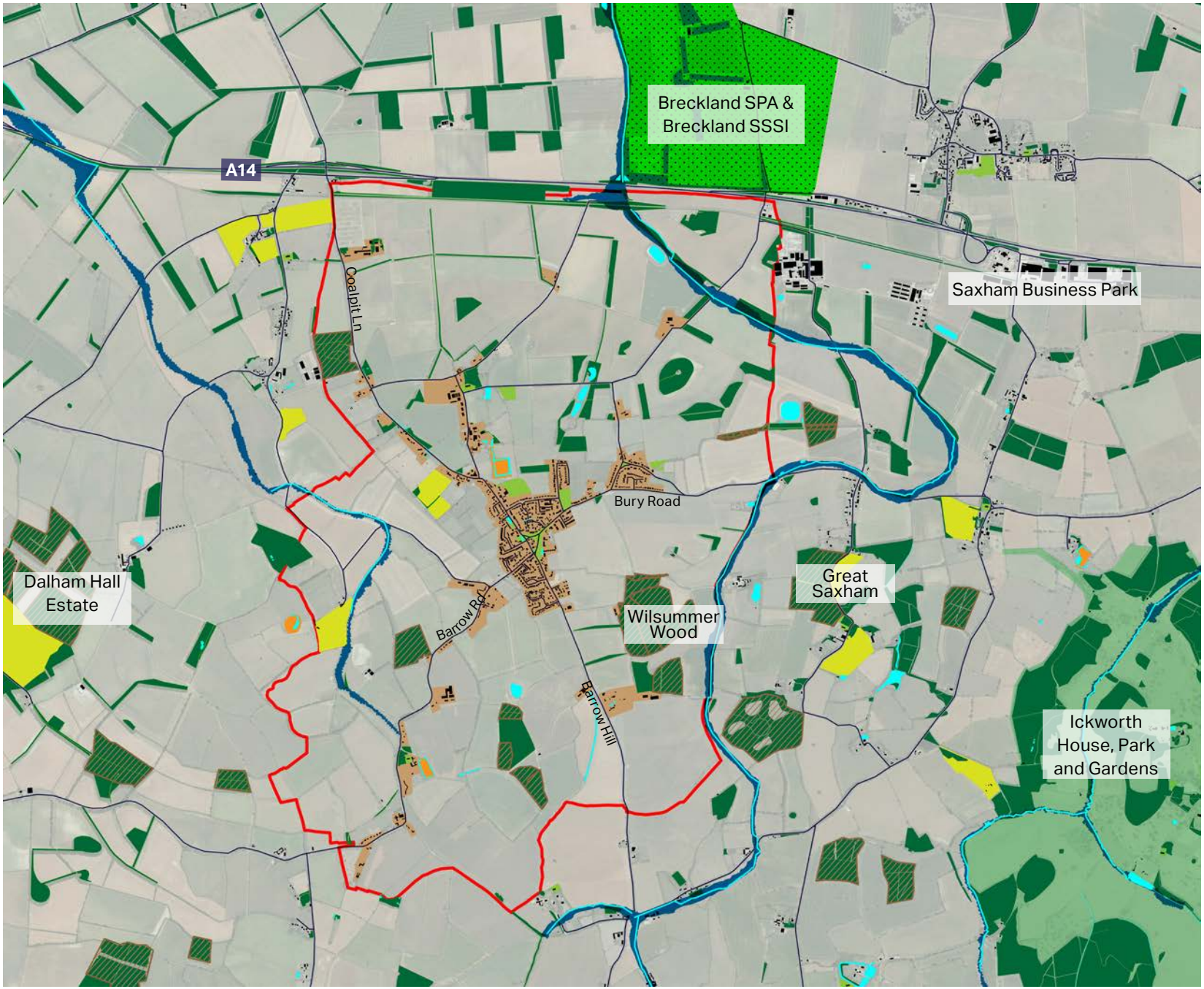


Figure 4: Landscape and Open Spaces

3.1. Streets and public realm

The main access to the village from the A14 is Coalpit Lane. Along the village the north-south route follows Colethorpe Lane into The Street which becomes Barrow Hill. The main east-west roads of the village are Bury Road and Barrow Road which run so that they form a 'triangle' shape in the centre of the Barrow village. Approach roads are narrow and bounded by large hedgerows, providing the areas with a rural atmosphere. Roads in the village are typically enclosed by attractive grass verges, front gardens, buildings and mature trees providing a pleasing character.

Roads and streets in the village are narrow and meandering with organic layouts. Most main roads have pavements on one side or no pavements, especially those that evolved from historic country lanes. 20th and 21st century developments are characterised by a suburban cul-de-sac layouts with pavements on either sides of the road, and regular front gardens.

The road network is supplemented by numerous footpaths that connect the settlements to the surrounding countryside. This helps to promote healthy lifestyles and supports the Parish's natural landscape character.

Figure 5: The Street

Figure 6: Stoney Lane

Figure 7: Ley Road

Figure 8: Church Road

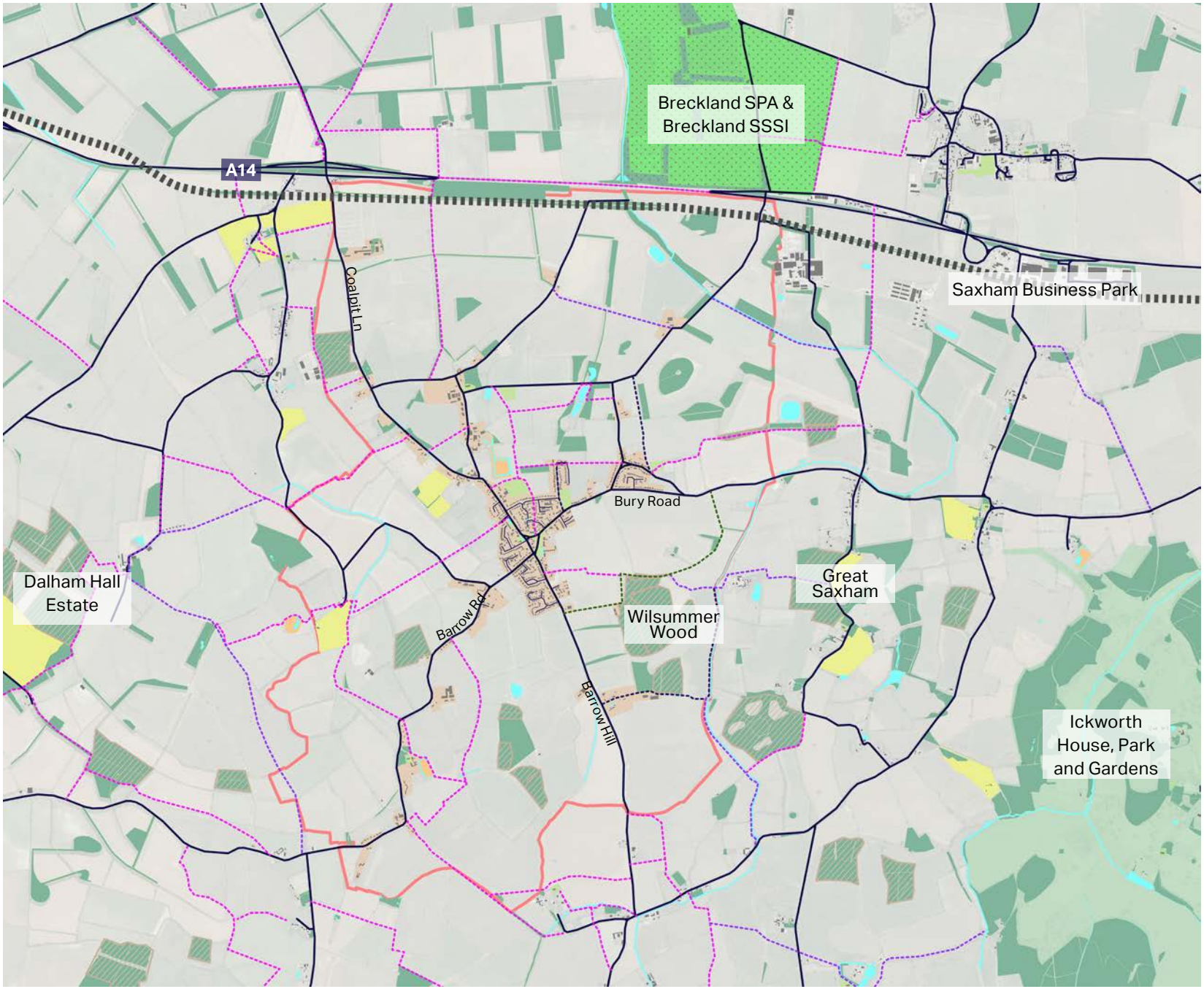


Figure 9: Road Network and Public Rights of Way

3.2. Settlement pattern

3.2.1. The village of Barrow

The village originated along Church Road. Barrow Church (All Saints) is a Grade I listed building, which sits on the edge of the village. Nearby is Barrow Hall, a Grade II listed building, which includes a moat enclosing the site of an ancient manor house.

Over time, Barrow grew southwards along The Street and eastwards along Bury Road. The village's centre drifted along with the developments to the area around the junction of The Street and The Green, forming a triangle of roads and creates what is known as 'nucleated settlement'.

From the mid-20th century, the Parish saw housing developments gradually expanding outwards to the south, north and east, with growth encouraged by the construction of the A14 (former A45). New buildings have largely filled the gaps between existing dwellings and, in many cases, short cul-de-sacs and no-through roads have been used as patterns for neighbourhood developments. These have helped to create a sense of privacy through the absence of passing traffic.

Figure 10: The map showing the settlement pattern in Barrow

3.2.2. The hamlet of Denham

Denham has a linear layout. The majority of the settlement is set along Barrow Road and distributed unevenly.

There has been no significant expansion since the hamlet was formed. Therefore, the settlement remains strongly linked to its wider rural landscape and fields.

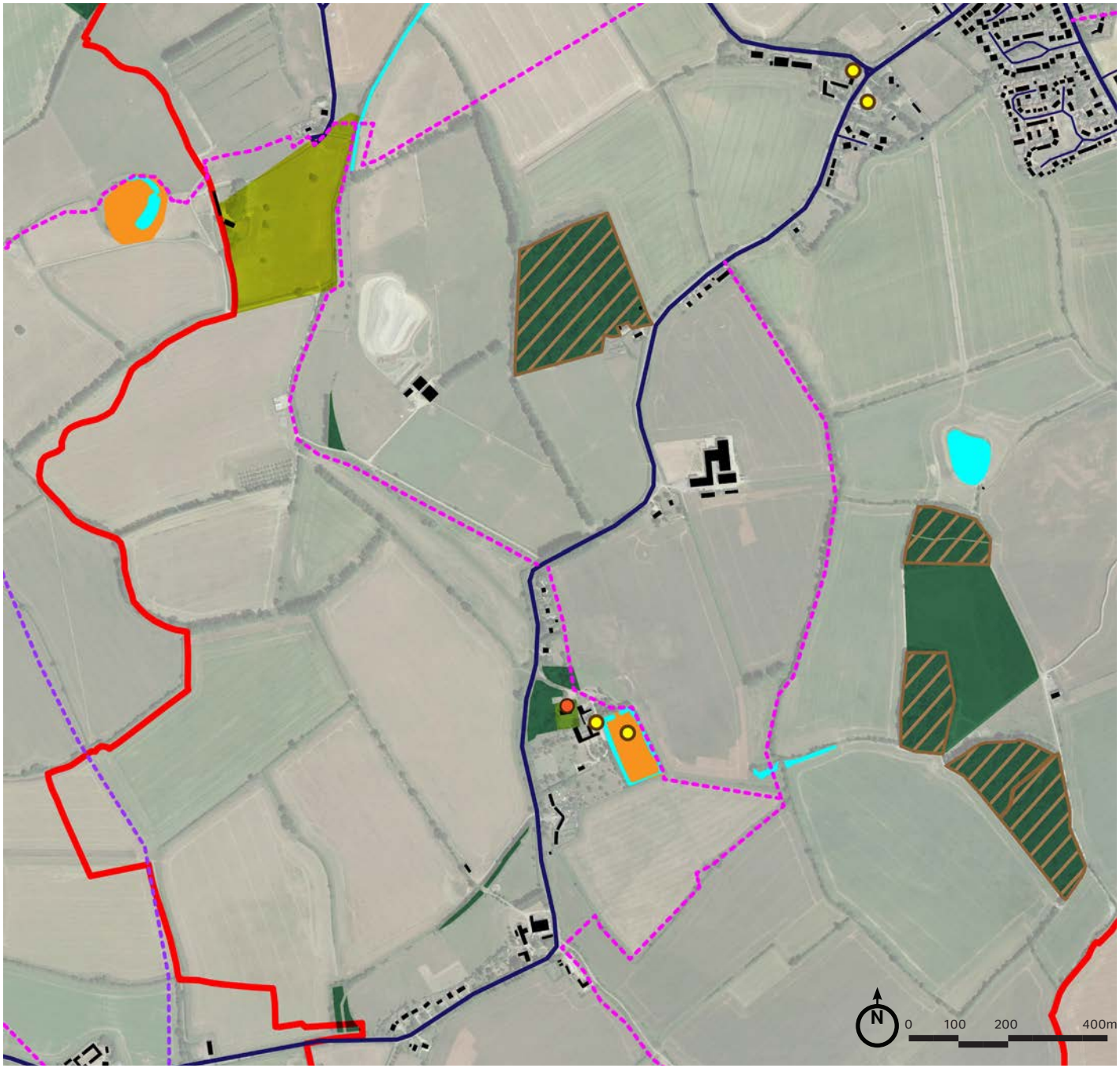


Figure 11: The map showing the settlement pattern in Denham.

3.3. Character sectors

Barrow-cum-Denham Parish was split into 4 sectors for the purpose of the questionnaire. The following pages provide a summary of these sector's characteristics. The centre of Barrow village has been identified as a fifth sector due to its exceptional characteristics.

- CS1: The hamlet of Burthorpe
- CS2: The south of Barrow village
- CS3: The hamlet of Denham
- CS4: The north of Barrow village
- CS5: The centre of Barrow village

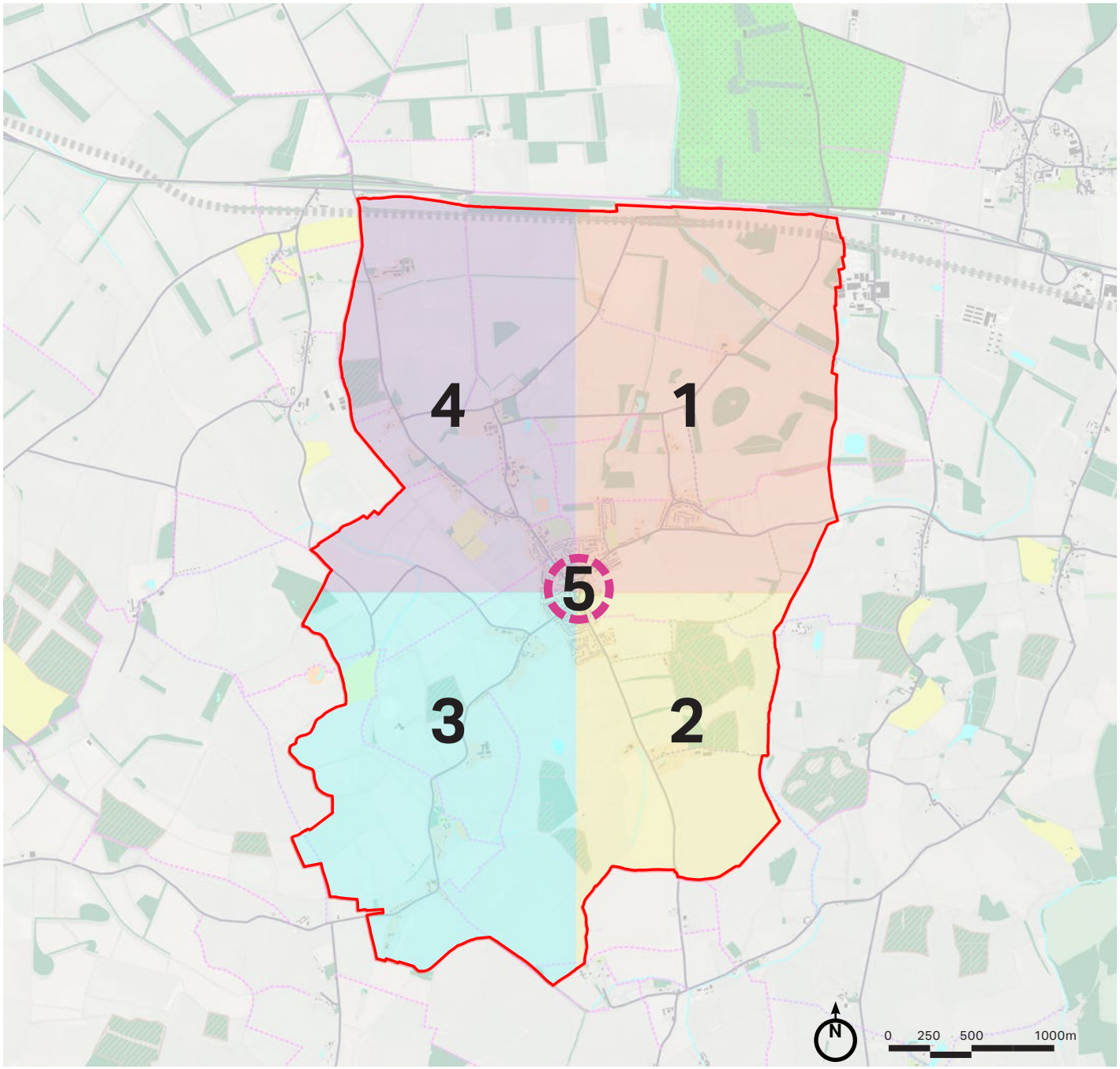


Figure 12: The map showing the 5 character sectors in the Parish.

3.3.1. The hamlet of Burthorpe

This area is characterised by an attractive, highly mixed range of housing – ranging from early 19th century cottages, to a number of 20th century developments.

LAND USE: Predominantly residential.

LAYOUT: Beyond the Allotment Gardens, houses located along Bury Road with sloping front garden.

Following on Bury Road is the outlying 20th century development structured around the Burthorpe Green and Papeley Meadow. Building frontages are set back from roads to create enough space for front gardens, green verges and shrubs.

BUILDING HEIGHTS AND ROOFLINE: Building heights vary mainly between one and two storeys. Gabled roofs are the most common roof type to be found in the sector. Some hipped roofs can be found along Bury Road.

In 20th century semi-detached and detached developments, the more uniform roofline produces regular building patterns. These developments are articulated by gentle bends in the roads and in places by sloping terrain.

BUILDINGS: Variety of housing typologies, mainly between one and two storeys and up to three storeys in height: bungalows, semi-detached and detached houses.

OPEN SPACES: Open spaces located within the two major residential clusters and the countryside are easily accessible from the village.

The edges of the built up areas are defined by tall hedges that partly screens the buildings from the open countryside.

PARKING: Parking in garages, on front drives or on roadside outside the houses.

STREETSCAPE: The western part of Bury Road is enclosed by houses, on one side, and mature tree buffers, on the other, creating a strong green character. The eastern part of Bury Road is more open with views onto open fields.

HERITAGE ASSETS: There are four grade II listed buildings in this area:

- Feltons (NHLE: 1031446)
- Gables Cottage (NHLE: 1031445)
- 18, Bury Road (NHLE: 1031444)
- Old Lamb House and Lamb Cottage (NHLE: 1031443)

Figure 13: Gables Cottage

Figure 14: Old Lamb House and Lamb Cottage

Figure 15: Detached housing on Bury Road

3.3.2. The south of Barrow village

Since the mid-20th century, residential growth has expanded the settlement of Barrow beyond The Green. Parcels of development have added variety to the built fabric of the village.

LAND USE: Residential with a GP surgery.

LAYOUT: Older residential buildings are located along the main roads with large front and spacious back gardens.

The more recent residential developments are organised in a cul-de-sac layout which deviates from the pattern of buildings fronting onto Barrow Hill.

The latest new-build developments form the continuity of the Barrow Hill frontages and create new settlement edges.

BUILDING HEIGHTS AND ROOFLINE: Building heights vary mainly between one and two storeys. Rooflines are generally gabled, with instances of hipped and mansard roofing styles.

BUILDINGS: Mostly two storey, detached, semi-detached, short terraces with a significant number of bungalows.

OPEN SPACES: Some of the smaller green areas located between properties contain ornamental tree planting.

PARKING: In residential areas parking is generally within the residential plot, although newer development include parking courtyards.

STREETSCAPE: A strong sense of enclosure is achieved in places with the traditional buildings abutting Barrow Hill, the boundary treatment and landscaping.

HERITAGE ASSETS: There is no listed building in this sector.

Figure 16: Bungalows on Johnson Road.

Figure 17: New developments on Barrow Hill

Figure 18: New- built developments on Barrow Hill.

3.3.3. The hamlet of Denham

This is a distinct area of housing characterised by a strong rural character derived from both its design and its setting surrounded on all sides by grass, fields or woodland.

LAND USE: The settlement is small and therefore levels of activity are relatively low. Predominantly residential with a church.

LAYOUT: Properties are set back from the road in an irregular pattern. Houses near St Mary's Church are arranged in groups away from the road.

BUILDING HEIGHTS AND ROOFLINE: The village mainly consists of two-storey buildings creating a lower level of roofline, which enables the settlement to sit below the mature tree canopy and integrate it into the surrounding landscape.

BUILDINGS: The village has a majority of detached houses and some semi-detached houses and bungalows.

OPEN SPACES: The countryside is easily accessible from the village.

PARKING: The village is accessible by a single narrow road which prevents the use of on street parking in the area. Private driveways and garages are common.

STREETSCAPE: A rural lane with very green, planted streetscape.

HERITAGE ASSETS: There are eight Grade II listed buildings and one Grade II* listed building within Denham, which comprise:

- St Mary's Church, Denham (NHLE: 1285509)
- Barn 50 Yards West of Denham Hall (NHLE: 1285481)
- Denham Hall (NHLE: 1376828)
- Barn 20 Yards North of Denham Abbots (NHLE: 1031412)
- Denham Abotts (NHLE: 1376884)
- The Old Plough (NHLE: 1376846)
- Denham Priory (NHLE: 1031413)
- Denham End Farmhouse (NHLE: 1031414)
- Denham Vicarage Farmhouse (NHLE: 1376847)

The moated site at Denham Hall (NHLE: 1019803) is a scheduled monument.

Figure 19: Church of St Mary

Figure 20: Denham Hall

Figure 21: Barn 50 Yards West of Denham Hall.

3.3.4. The north of Barrow village

This area contains a large amount of the village's historic fabric and listed buildings.

LAND USE: There is very diverse range of uses within this area. Besides residential buildings, the area is moslty made up of local retail, service and employment uses. There is a cluster of community uses to the north of the village on Church Road (including the Primary School, the Barrow Church and the Post Office).

LAYOUT: Buildings face the roads and lanes with a wide range of setbacks. For the majority of 17th and 18th century houses, buildings directly adjoin the rear of the pavement with no setback, or only have a small front garden or planting strip of insufficient size to include on-site vehicle parking. However houses built in the 19th and 20th century are generally set back from the street with generous gardens. In some locations houses are arranged in groups away from The Street.

BUILDING HEIGHTS AND ROOFLINE: Building heights typically vary between one and two storeys. Usually the roofline is either pitched or hipped. Many buildings have chimneys and on the roofs gabled and dormers are frequently present.

BUILDINGS: The most common housing typologies are detached dwelling and bungalows, followed by semi-detached and terraced buildings - which, for the most part,are situated along The Street.

OPEN SPACES: A children's play area and a sports field are located at the rear of Barrow Village Hall.

PARKING: Parking in garages, on front drives or on roadside outside the houses.

STREETSCAPE: The Street has an open and spacious feel, especially where pocket parks can be found.

As The Street moves north an access road to The Green provides views into the surrounding estate with unobtrusive fencing, open grass areas and mature planting.

Church Road and Colethorpe Lane are narrow and organically arranged with more rural scene.

HERITAGE ASSETS: The Church of All Saints is registered as a Grade I (NHLE: 1376863) and is isolated from the centre of the village. Some examples of Grade II listed buildings, found in the village, are the Barrow Hall (NHLE: 1031448), the Town Estate Room (NHLE: 1031442) and the Barrow VC Primary School (NHLE: 1031449) .

Moated site and associated fishpond to the south east of Barrow Hall is a scheduled monument.

Figure 22: Town Estate Room

Figure 23: Church of All Saints

Figure 24: Barrow VC Primary School

3.3.5. The centre of Barrow village

The triangular junction by the village green includes some of the oldest buildings in the village with traditional cottages. The green space in the centre of the village is an important feature providing amenity and reflecting the local identity.

LAND USE: Residential with convenience shops and a pub.

LAYOUT: Buildings are irregularly arranged, with misaligned roof lines. However, most of buildings fronting the Barrow Green, overall form a complementary cluster.

BUILDING HEIGHTS AND ROOFLINE: Buildings in the centre of Barrow village are typically two and three storeys. Gabled and hipped roofs are commonplace, varying in roof orientation, eaves height and angle. Some roof elements have been included that add interest to the roof line.

OPEN SPACES: The Barrow Green dominates this area. Although it accommodates some minor development in the form of gravel paths, road signs, bins, the war memorial etc., it provides a strong soft landscaped character within the village and offer the most significant public open space.

The space is also accented by distinctive trees and groups of mature trees, which contribute strongly to the well-vegetated character.

BUILDINGS: Barrow Green is framed by mostly two storey, detached, semi-detached houses. The houses vary in sizes, styles, materials and details.

PARKING: Most of the car parking spaces are captured on-plot, but these are inconsistent in design. For houses with limited spaces, on street car parking is generally available.

Overall, on-plot parking is balanced with attractive gardens and boundary treatments, and as such does not conflict with the streetscape.

STREETSCAPE: Roads are enclosed by attractive, raised open spaces laid to grass with mature trees providing a pleasant streetscape.

Private driveways break open spaces but they are usually paved with gravel, which harmonise with the sense of place.

HERITAGE ASSETS: There are nine grade II listed buildings in this area, including the K6 Telephone Kiosk (NHLE: 1252191), Barrow War Memorial (NHLE: 1452044), the Weeping Willow Public House (NHLE: 1376862) and houses with diverse construction periods and architectural styles.

Figure 25: New-built development on Bury Road.

Figure 26: Detached housing on The Green.

Figure 27: Detached housing on Bury Road.

Design principles, guidance and codes

04

4. Design principles, guidance and codes

This section sets out the guidance that will influence the design of potential new development in Barrow-cum- Denham. Where possible, images from Barrow-cum-Denham are used to exemplify the design guidelines. Where these images not available, best practice examples from elsewhere are used.

4.1. General design principles

General questions to ask and issues to consider when presented with a development proposal

A brief reference to general design principles and questions will be mentioned before the main part of the design guidance, with reference to Barrow-cum-Denham.

The guidelines developed in this document focus on the 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 connectivity, 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. Coalescent development 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 the 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, roofline, height, form, and density;
- Enhance and reinforce the property boundary treatments;
- Adopt contextually appropriate materials and details;
- Provide adequate open space for the development in terms of both quantity and quality;
- 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 relate well to each other; and
- Aim for innovative design and eco-friendly buildings while respecting the architectural heritage and tradition of the area and integrating them with future development.

Street grid and layout

- Does it favour accessibility and connectivity over cul-de-sac models? If not, why?
- 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?
- Does the proposal maintain or enhance any identified views or views in general?
- How does the proposal affect the trees on or adjacent to the site?

- Has the proposal been considered within its wider physical context?
- Has the impact on the landscape quality of the area been taken into account?
- 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?
- Can any new views be created?
- 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?
- Is the landscaping to be hard or soft?

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 villagescape?
- 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 extensions, 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

- What is the distinctive material in the area, if any?
- 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?
- Is the proposal in harmony with the adjacent properties? This means that it follows the height massing and general proportions of adjacent buildings and how it takes cues from existing materials and other existing 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?

4.2. Barrow-cum-Denham design principles

There are a set of design principles that are specific to Barrow-cum-Denham. These are based on:

- The analysis of village character, presented in chapter 3; and
- Discussion with members of the Neighbourhood Plan Steering Group on the site visit and meeting.

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

1. Responding to rural character

- Patterns of growth and layout of buildings
- Views and landmarks
- Enclosure
- Gateways and access features

2. Creating an attractive environment for all

- Biodiversity and landscape
- Ponds and ditches
- Open spaces
- Street furniture
- Trees and landscaping
- People friendly streets
- Footpath network
- Vehicle parking

3. Promoting local character

- Building scale and massing
- Roofline
- Building line and boundary treatment
- Materials and building details
- Housing extension and conversions

4. Environmentally responsible

- Sustainable buildings
- Water Management

The objective is to provide a point of reference for design standards in Barrow-cum-Denham. It is expected that all new developments will follow the guidelines set out in this section and applicants will be expected to demonstrate how they have taken account of them, in line with the strategic policies.

Some of the content is more general and is best described as design guidance. Other elements, such as building line and boundary treatment, are codes, being more prescriptive, setting out specific parameters that development proposals will be expected to meet.

4.3. Responding to rural character

4.3.1. Patterns of growth and layout of buildings

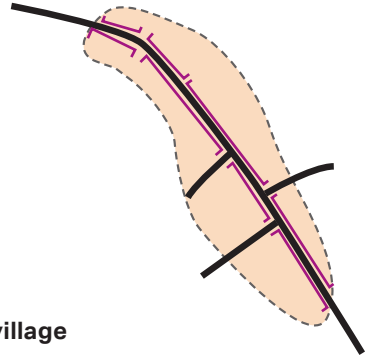
Barrow-cum-Denham owes much of its character to the historic pattern and layout of its buildings and settlements. New developments should respect the particular building and open space patterns of each settlement in order to contribute positively to their character. In particular:

- Development densities should reflect village settlement character.
- Any new development in the countryside should be carefully sited to minimise negative impacts on the appearance of the landscape.
- New developments must demonstrate an understanding of the scale, building orientation, enclosure, and façade rhythm of the surrounding built environment to respect its rural character.
- Where an intrinsic part of the local character, properties should be clustered in small pockets showing a variety of housing types. In the new developments, the use of a repeating type of dwelling within a same cluster or along a same street frontage should be avoided; instead, variations in building heights, widths, and/or depths should be sought to create variety and interest in the streetscape. Renovations or infill housing along a row of terraced or semi-detached houses, however, should respect the greater uniformity of the existing street frontage.
- New development should create a diversified building line which is used to shape views and enclosures;
- Properties should aim to provide rear and front gardens, where appropriate, or at least a small buffer with the public realm, for example, in the form of planting strips for cases where the provision of a front garden is not possible.
- The layout of new development should optimise the benefit of daylighting and passive solar gains as this can significantly reduce energy consumption.
- Mixed-use development, where appropriate, should be encouraged to add variety and character along the street/ in the neighbourhood.
- Interfaces between the existing settlement edges and any new development must be carefully designed to integrate new and existing communities. This is particularly important where new residential buildings will face existing residential properties that until now back onto open fields.
- 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.

More specific design guidances for different kinds of settlement patterns are listed on next page.

Figure 28: Detached housing with landscaped boundary treatments on The Green.

Figure 29: New developments on Barrow Hill .



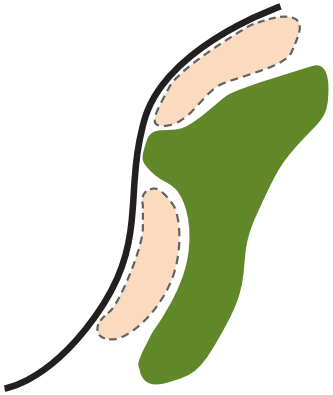
Linear pattern

CS2: The south of Barrow village

CS4: The north of Barrow village

The north and south of Barrow village sectors have traditional linear settlement patterns which have expanded out through post-war development.

- Buildings should orientate towards main street and reinforce the linearity of the street where possible.
- Proposals should maintain the continuity of built form along the main route. However, buildings should not be repetitive, and should provide variety of building types and design with coherent scale, massing and detailing.
- Gateway features could be created at either end of the linear settlement to mark the access or arrival.
- Treatment of main road frontages should include tall trees, hedgerows and the boundary walls typical of Barrow to increase the sense of enclosure and linear form.
- Linear pattern settlement always orientates inwards towards the main road and turns its back towards the landscape. Boundaries on the settlement edge should be planted. The edge should be softened in relation to the adjacent landscape. It should be designed to have a minimal impact on the adjacent undeveloped land.

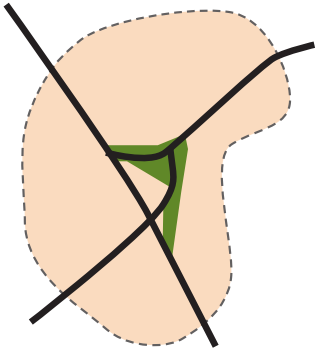


Linear pattern

CS3: The hamlet of Denham

The hamlet of Denham presents a loose linear format. Traditional buildings are typically low density and have a discontinuous building line, with a close relationship to the countryside.

- Proposals should seek to limit expansion, whilst working within the context of the local landscape.
- Large scale developments are considered to be inappropriate within the hamlet. Smaller clusters of development are preferable and are favourable to organic, piecemeal growth of the area.
- Proposal should have irregular soft edges at the interface with the countryside
- Buildings should be informally aligned and avoid forming perimeter blocks.



Central green pattern

CS1: The hamlet of Burthorpe

CS5: The centre of Barrow village

The centre of Barrow village and Burthorpe hamlet are focussed around a green have a recognised centre where activity and uses are concentrated.

- Proposals within these settlements should maintain the density and scale of development at the centre and overlook the green.
- Proposals should maintain the continuity of buildings around the green.
- Developments away from the centre should ensure a good connection with the central green and help orientation around the centre.

4.3.2. Views and landmarks

- New development proposals should not be visually intrusive. This should be achieved through the appropriate scale and design including screening where appropriate.
- Scenic values and tranquillity of the countryside views should be retained and enhanced in future development.
- Where appropriate, future development proposals should incorporate a landscape feature to create a landmark, helping with legibility.
- New development proposals should maintain visual connections to the surrounding landscape and long views out of the settlement. Development density should allow for spaces between buildings to preserve views of countryside setting and maintain the perceived openness of the settlement.
- Creating short-distance views broken by buildings, trees or landmarks helps to create memorable routes. Creating views and vistas allows easily exploitable links between places. New developments should be oriented to maximise the opportunities for memorable views.

Figure 30: View to the Barrow Church from Church Road.

Figure 31: View to the open countryside from Sharpes Hill in Burthorpe.

Figure 32: View to the open countryside from St Mary's Church in Denham .

4.3.3. Enclosure

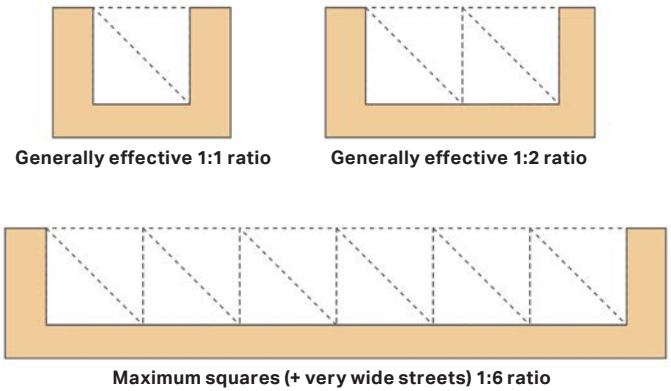
Public realm in new developments should be designed in good proportions and clearly delineated. Defined spaces help to achieve cohesive and attractive urban forms. They also create an appropriate sense of enclosure - the relationship between a given space (lane, street, square) and the vertical boundary elements at its edges (buildings, walls, trees).

The following principles serve as general guidelines that should be considered for achieving satisfactory sense of enclosure:

- When designing building setbacks, there must be an appropriate ratio between the width of the street and the building height (see diagram opposite).
- Buildings should be designed to turn corners and create attractive start and end points of a new street or frontage.
- Generally, building façades should front onto streets. Variation to the building line can be introduced to create an informal character.
- In the case of terraced and adjoining buildings, it is recommended that a variety of plot widths, land use, building heights, and façade depth be considered during the design process to create an attractive streetscape and break the monotony of the street wall.
- Trees, hedges, and other landscaping features can help create a more enclosed streetscape in addition to providing shading and protection from heat, wind, and rain.

Figure 33: The Street has continuous variations in building setbacks but retains a sympathetic level of enclosure.

Figure 34: The 'rules' on enclosure can be suspended when a significant green space is incorporated, for example the settlement along The Green.



Images from Urban Design Compendium (Homes England)

4.3.4. 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 fulfill the same role.

Figure 35: Informal gateway features created by a listed building acting as landmark (left) and a noticeable change in street enclosure (right) mixed-use buildings acting as gateway (right) on The Street.

Figure 36: Barrow village sign and War Memorial acting as a gateway features for the centre of the village.

4.4. Creating an attractive environment for all

4.4.1. Biodiversity and landscape

This landscape within the Parish has a biodiversity interest in providing wildlife corridors. New and existing development must preserve the biodiversity of the area and where possible enhance it.

- Biodiversity and woodlands should be protected and enhanced where possible. Hedges, trees, road verges along The Street and other roads as well as natural tree buffers should be protected when planning for new developments.
- Abrupt edges to development with little vegetation or landscape on the edge of the settlement should be avoided and, instead, a comprehensive landscape buffering should be encouraged.
- New developments and building extensions should aim to strengthen biodiversity and the natural environment.
- Ensure habitats are buffered. Widths of buffer zones should be wide enough and based on specific ecological function. For example "For ancient woodlands, you should have a buffer zone of at least 15 metres to avoid root damage."[1]
- New development proposals should include the creation of new habitats and wildlife corridors. This could be by aligning back and front gardens or installing bird boxes or bricks in walls. Wildlife corridors should be included to enable wildlife to travel to and from foraging areas and their dwelling areas.

Figure 38: Ducks crossing sign

Figure 37: Ducks inhabit near ponds.

4.4.2. Ponds and ditches

When planning for any new development it is important to preserve the Parish's treasured landscape. Barrow-cum-Denham has a variety of areas with landscape interest, including the 41 ponds found within the Parish.

- Ponds and ditches provide habitats for wildlife and plants, as well as acting as wildlife corridors. Existing ponds and ditches should be protected and enhance where possible.
- Ponds and ditches play an important role in sustainable drainage systems. In new developments, attenuation ponds and detention basins (more details are provided in the Code 19) can be introduced to reduce flooding risks, reinforce the local character and provide amenity spaces.
- Dense vegetation and fences can be used to channel people away from sensitive sites and prevent access by young children.

Figure 39: A pond located near the Barrow Hall.

Figure 40: A pond located in the centre of the village.

Figure 41: A linear pond located along Denham Lane.

Figure 42: Roadside ditches on Church Road

4.4.3. Open spaces

Barrow-cum-Denham includes a wide range of attractive green spaces. New developments should take a number of measures to preserve and enhance these assets as well as the local flora:

- Open spaces should offer a variety of spaces that can host a diverse range of activities and accommodate different users.
- Open spaces should respond to local character and encourage civic pride.
- 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 and existing landscapes and open spaces should be located within walking distance from their intended users. If appropriate, these should be linked to form connected green networks. The networks are often more useful to create visual amenity, for recreational use and wildlife corridors than isolated parks. Where direct links are not possible, it may be appropriate to link these together through green routes, shared surfaces and streets. Tree lined avenues can achieve a visual and physical connection to open space.
- New developments should incorporate existing native trees and shrubs and avoid unnecessary loss of flora. 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.

Figure 43: A recreation ground at the back of the Village Hall .

Figure 44: A pocket open space on The Street.

Figure 45: A central green space in the village of Barrow - Barrow Green

Figure 46: A central green space in the hamlet of Burthorpe - Burthorpe Green.

4.4.4. Street furniture and signs

Care should be taken to ensure that street furniture and signage does not "clutter" the public realm or block routes and desire lines.

The following principles should be incorporated into the design of street furniture and signage:

- Materials should be long lasting and easily maintained with components that are easy to replace and reflect the local palette of materials and colour schemes.
- 'Visual clutter' should be reduced and street furniture should be integral to the overall landscape and public realm design.
- Location and routes of street furniture should be considered from the early stages of the design process.
- Street furniture and signage should be designed and placed in a way that contributes to the streetscene and enhances local character.
- Public seating must be provided in convenient locations at regular intervals, especially in high footfall areas.

Figure 47: Wooden bench situated at Burthorpe Green.

Figure 48: A wooden bench situated at road verge.

Figure 49: Barrow village sign

Figure 50: Road sign

4.4.5. Trees and landscaping

The abundance of trees is one of the Parish's greatest assets. They provide shading and cooling properties, absorb carbon dioxide, act as habitats and green chains for species, reduce air pollution and assist water attenuation and humidity regulation. For people, they help to alleviate stress and anxiety, help with ill health recovery, and create a sense of positive mental health and well-being. In addition, they add life to the landscape and enhancing open spaces.

The following guidelines focus on the design aspects and appearance of planting and trees in private gardens as well as public open spaces and streets.

- Aim to preserve existing mature trees. Incorporating in the new landscape design and using as landmarks where appropriate;
- Consider canopy size when locating trees; reducing the overall number of trees but increasing the size of trees is likely to have the greatest positive long term impact;
- Size of tree pit should allow sufficient soil around the tree. Ensure tree stems are in the centre of the verge to provide a 1m clearance of the footway or carriageway;
- Existing tree root zones should be protected to ensure that existing trees can grow to their mature size. Root barriers must be installed where there is a risk of damaging foundations, walls, and underground utilities;
- New trees should be added to strengthen vistas, focal points, and movement corridors while retaining clear visibility of amenity spaces. They should however not block key view corridors and vehicular circulation sight lines;
- New trees should be integrated into the design of new developments from the outset rather than left as an afterthought to avoid conflicts with above- and below-ground utilities;
- To ensure resilience and increase visual interest, a variety of tree species is preferred over a single one. Species must be chosen according to climate change resilience, adaptation to local soil conditions, environmental benefits, size at maturity, and ornamental qualities.
- Regulations, standards, and guidelines relevant to the planting and maintenance of trees are listed below:
- Trees in Hard Landscapes: A Guide for Delivery;[1]
- Trees in the Townscape: A Guide for Decision Makers;[2]
- Tree Species Selection for Green Infrastructure;[3]
- BS 8545:2014 Trees: from nursery to independence in the landscape - Recommendations;[4] and
- BS 5837:1991 Guide for trees in relation to construction.[5]

[1] Trees & Design Action Group (2012). *Trees in Hard Landscapes: A Guide for Delivery.* Available at: http://www.tdag.org.uk/uploads/4/2/8/0/4280686/tdag_trees-in-hard-landscapes_september_2014_colour.pdf

[2] Trees & Design Action Group (2012). *Trees in the Townscape: A Guide for Decision Makers.* Available at: http://www.tdag.org.uk/uploads/4/2/8/0/4280686/tdag_treesinthetownscape.pdf

[3] Trees & Design Action Group (2019). *Tree Species Selection for Green Infrastructure.* Available at: http://www.tdag.org.uk/uploads/4/2/8/0/4280686/tdag_treespeciesguidev1.3.pdf

[4] British Standards Institution (2014). *BS 8545:2014 Trees: from nursery to independence in the landscape - Recommendations.* Available at: https://shop.bsigroup.com/ProductDetail/?pid=000000000030219672

[5] British Standards Institution (1991). *BS 5837:1991 Guide for trees in relation to construction.* Available at: https://shop.bsigroup.com/ProductDetail/?pid=000000000000258384

Figure 51: The open space in the centre of the village is bordered by 19 poplar trees.

4.4.6. People friendly streets

The Parish has a limited road network of mostly narrow, quiet country lanes which contribute to its informal character. The following principles should therefore be taken into account:

- Streets must meet the technical highways requirements as well as being considered a 'place' to be used by all, not just motor vehicles. It is essential that the design of new development should include streets and junctions that incorporate the needs of pedestrians, cyclists, and if applicable, public transport users. It is also important that on-street parking, where introduced, does not impede the access of pedestrians and other vehicles.
- Within the settlement boundaries, streets should not be built to maximise vehicle speed or capacity. Streets and junctions must be designed with the safety and accessibility of vulnerable groups, such as children and wheelchair users, in mind, and may introduce a range of traffic calming measures.
- New streets should tend to be linear with gentle meandering, providing interest and evolving views while helping with orientation. Routes should be laid out in a permeable pattern, allowing for multiple connections and choice of routes, particularly on foot. Any cul-de-sac should be relatively short and provide onward pedestrian links.
- Landscaping and trees act as soft traffic calming whilst maintaining the open feel that is distinct to the village. They create a safer environment for pedestrians and provide visual amenity.
- Streets must incorporate opportunities for landscaping, green infrastructure, and sustainable drainage.

Figure 52: The Street with planted verges, footways, and large front gardens.

Figure 53: Residential street in a 20th century development with an organic layout and continuous building frontages.

Figure 54: New built development with pavements on both sides and small front gardens

4.4.7. Footpath network

Barrow-cum-Denham is characterised by a rich network of footpaths which links settlements with the surrounding countryside, and provides interesting and scenic walks. Footpaths allow people to get closer to nature, enjoy a tranquil environment and do physical exercise by walking and cycling. Protection, improvement and design of footpath network should be considered in new developments.

- Where possible, newly developed areas must retain or provide direct and attractive footpaths 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 Barrow-cum-Denham.
- Where possible, new proposed footpath should link up green spaces to create a network of green walking routes.
- Design features such as gates or barriers to footpaths must be kept at a minimum and the latter must be avoided.
- 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.

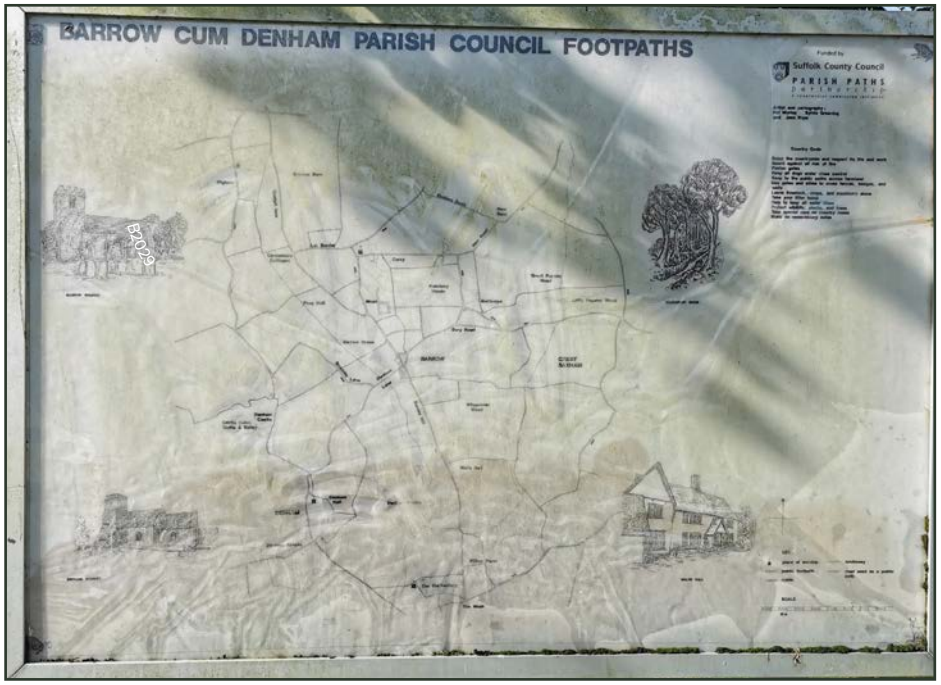


Figure 55: A map showing the footpaths connection in the Parish.

Figure 56: A public footpath connecting Sharpes Hill to Mill Lane

Figure 57: A public footpath connecting The Street to Brockley Lane

4.4.8. Vehicle parking

Parking areas are a necessity of modern development. However, they don't need to be unsightly. Parking provision should be undertaken as an exercise of placemaking.

- When placing parking at the front of a property, the area should be designed to minimise visual impact 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 the use of quality paving materials.
- When needed, residential car parking can be translated into a mix of on-plot side, front, garage, and courtyard parking, and complemented by on-street parking.
- For family homes, cars should be placed at the side (preferably) or front of the property. For small pockets of housing, a rear court is acceptable.
- Car parking design should be combined with landscaping to minimise the presence of vehicles.
- Parking areas and driveways should be designed to improve impervious surfaces, for example, through the use of permeable paving.

Figure 58: Examples of front garden car parking.

4.5. Promoting local character

4.5.1. Building scale and massing

- The majority of buildings in the Parish do not exceed two storeys in height. Therefore, new buildings 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 inclusion of a uniform building type throughout a development must be avoided.
- 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 particularly important in areas of historic character.

Figure 59: Examples of buildings in Barrow-cum-Denham demonstrating a variety in scale and massing.

4.5.2. Roofline

Creating a good variety in the roofline is a significant element of designing attractive places. There are certain elements that can serve as guidelines in achieving a good variety of roofs:

- The scale of the roof should always be in proportion with the dimensions of the building itself.
- Monotonous building elevations should be avoided, therefore subtle changes in roofline should be ensured during the design process.
- Locally traditional roof materials and detailing should be considered and implemented where possible in cases of new development.
- Dormers can be used as a design element to add variety and interest to roofs.
- Front-gable and cross-gable roof can be used to add variety and interest to roofs.

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 aim to keep rooflines below the tree canopy. They must also avoid obstructing key views and landmarks.

Figure 60: Roofs showing a dynamic roofline with a diversity of roof orientations, pitched and materials.

Figure 61: Gable roof with dormers.

Figure 62: Chimney stacks showing variations in roof shapes, heights, and materials, providing an informal character.

4.5.3. Building line and boundary treatment

- Any new developments should front onto, and have access from, the street or public space. Dead frontages should be avoided.
- 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.
- Any new developments should have setbacks that can provide front gardens, or alternatively small areas that offer buffer zones between private and public spaces. Building setbacks should be varied by street level, local character, and type of structure.
- The transition between private and public spaces can vary from a well - defined to a looser boundary. A buffer zone could be defined by the use of railings, fences, plants, walls, etc.
- 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.

More specific design guidances for different character sectors are listed on next page.

Figure 63: A two-storey building facing to the street with hedges as boundary treatment on The Street.

Figure 64: More open front garden treatments with landscaped plants.

Figure 65: Gothick style cottage with low flint wall as boundary treatment on Bury Road.

Figure 66: A front garden boundary marked by landscaped hedges and low masonry walls.

Character Sectors	Principles	Building facing primary roads /open spaces		Materials/planting
		Height	Setback to building	
CS1: The hamlet of Burthorpe	– Front gardens should create an open, spacious feel and also distance the properties from the street network.	Max. 0.6m	Min. 3m	– Soft verges with tree or hedge planting.
CS2: The south of Barrow village	– Boundary features should be encourage to consistent with the character while enabling enough variations for visual interest.	Max. 0.9m	Min. 2m	– Predominantly soft verges with landscaped planting or hedge planting with/without low wall.
CS3: The hamlet of Denham	– Any development should contribute to the richness of rural-style boundary treatment by using locally distinctive landscape features and planting, such as brick boundary walls and hedges of native species.	Max. 1.8m	Min. 3m	– Predominantly Soft verges with tree or hedge planting contribute to a traditional rural characte. – Any materials that is inappropriate for the rural character should be avoided.
CS4: The north of Barrow village	– Provide consistent domestic scale streetscape on streets. – Front gardens should create an open, and spacious feel.	Max. 0.6m	Min. 2m	– Predominantly soft verges with landscaped planting or hedge planting with/without low wall. – Traditional flint walls should be retained and reinforced with the line of other boundary treatments.
CS5: The centre of Barrow village	– Maintain defensible space for those fronting key open spaces. – High wall/hedges along publically visible boundaries are considered inappropriate to the character sector and should be avoided.	Max. 0.9m	Min. 1m	– Predominantly low wall or railing with informal hedge behind. – Low formal hedge fence. – Traditional flint walls should be retained and reinforced with the line of other boundary treatments.

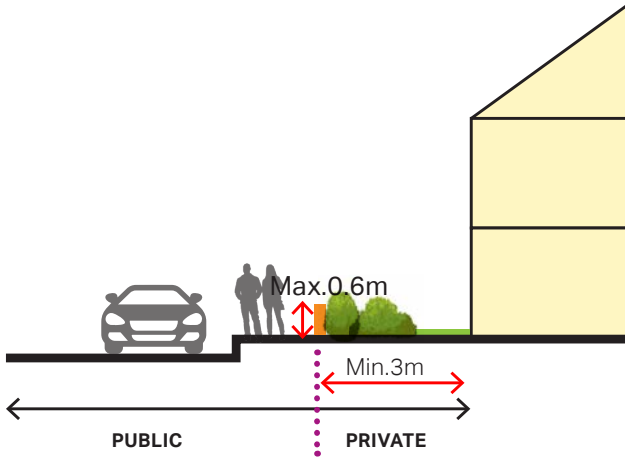


Figure 67: An example section of defensible space in front of houses - CS1: The hamlet of Burthorpe

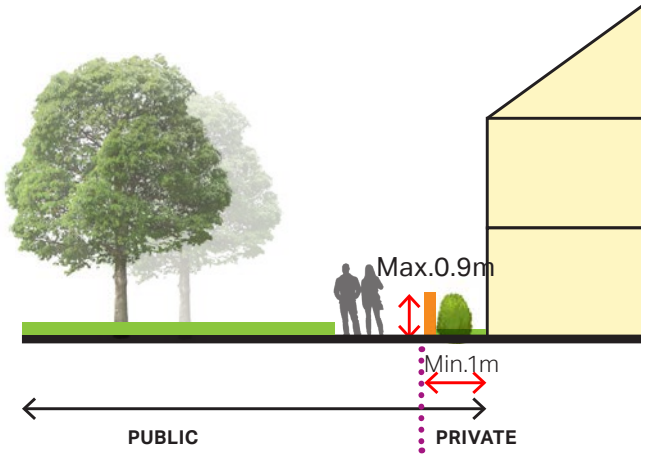


Figure 68: An example section of defensible space in front of houses - CS5: The centre of Barrow village

4.5.4. Building modifications, extensions, and plot infills

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.

There are a number of principles that residential extensions and conversions should follow to maintain character:

- The original building should remain the dominant element of the property regardless the amount of extensions. The newly built extension should not overwhelm the building from any given point.
- Extensions should not result in a significant loss to the private amenity area of the dwelling.
- Designs that wrap around the existing building and involve overly complicated roof forms should be avoided.
- The pitch and form of the roof used on the building adds to its character and extensions should respond to this where appropriate.
- Extensions should consider the materials, architectural features, window sizes, and proportions of the existing building and recreate this style to design an extension that matches and complements the existing building.
- In case of side extensions, the new part should be set back from the front of the main building and retain the proportions of the original building. This is in order to reduce any visual impact of the articulation between existing and new.
- In case of rear extensions, the new part should not have a harmful effect on neighbouring properties in terms of overshadowing, overbearing or privacy issues.
- Many household extensions are covered by permitted development rights, and so do not need planning permission. These rights do not apply in certain locations such as Conservation Areas.
- Any housing conversions should respect and preserve buildings' original form and character.
- Where possible, reuse as much of the original materials as possible, or alternatively, use like-for-like materials. Any new materials should be sustainable and be used on less prominent building parts.

4.5.5. Materials and building details

Within the Parish area there is a wide variety of architectural styles and ages which contribute to its character and appearance. Key architectural features should be considered in future development proposals.

- Generally, for inspiration and appropriate examples, the developers should look at the historical buildings in the surrounding areas. Each development should be designed with the specific location and its immediate surroundings in mind.
- Any new development should use a simple material palette. Richness should be achieved through varied roofscapes, building styles and careful detailings.
- Featured architectural details should be introduced to new development in a appropriate and sustainable way.
- Any new materials should be durable, sourced from eco-friendly, recycled and sustainable supplies when possible.

Grade-II listed Gables Cottage - red brick with gault brick dressings at centre; fish-scale slate- hung, above and on wings at first floor. Slated roofs with carved bargeboards and finials.

Front elevation with red brick laid in stretcher bond and white brick dressings. Fenestration rhythm and window quantity adds character.

Grade-II listed Green Farmhouse - Flint with red brick dressings, hipped slated roof. Sash windows with flat arches, flush frames and small panes.

Grade-II listed Gothic style detached house- red brick with white brick dressings, slated roof with white brick chimneys having circular shafts with moulded cap and base.

Grade- II listed building - timber-framed, rendered, gabled casement dormers. It has two-storey early C19 extension towards Barrow Street; flint with red brick quoins, sash windows.

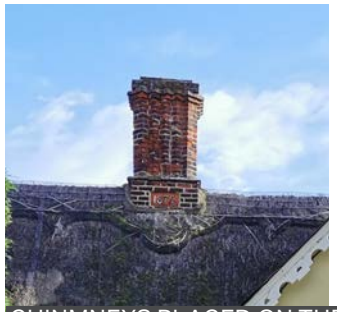
Grade- II listed Denham Hall - red brick wall; Sash windows with flat arches and hood-moulds in red brick above; small panes and arched glazing bars at head.

Grade-II The Weeping Willow Public House - timber-framed, rendered detached house; pantiled roof with axial chimney.

Grade-II listed detached house - timber-framed, rendered, glazed pantiled roof. Sash windows with four large panes, flush frames and architraves. Fielded six panels entrance door with oblong fanlight with radial bars; flat pilasters with sunken panels, open pediment.

Grade-II listed Barrow House- painted brick with full-height flat pilasters, modillion eaves cornice carried over to form open pediment over slightly projecting bay at entrance. Hipped slate roof. Sash windows with flush frames and small panes. The flat-roofed entrance porch has Doric pilasters, pair of glazed doors with margin lights; matching fully-glazed side lights.

Chimneys




CHINMNEYS PLACED ON THE RIDGE


GABLE END CHIMNEY STACKS


CHIMNEYS ON AN END ELEVATION CONNECTING TO THE GROUND

Featured windows


SASH WINDOW


WINDOWS WITH BRICK FLAT ARCHES; FLUSH FRAMES AND SMALL PANELS


BAY WINDOW

Featured porches and entrance


GABLE PORCH


COLUMNS, ENTABLATURE WITH TRIANGULAR PEDIMENT


CANOPY

Stepped gable

Craved barge boards

Brickwork

Materials for consideration:

This section includes some examples of building materials that contribute to the local vernacular within the Parish area, which could be used to inform future development. This list is not exhaustive and each design proposal should explain its material strategy and how it fits within the local context.

Brick

The dominant wall material is brick. These are predominantly rich hues of red and orange, but burnt headers are also characteristic. New development using brick should use a hue that is specific to Barrow-cum-Denham.

Stock brick are less common but add to the overall richness of street scene.

Render

Rendering can be used to protect the walling material underneath. Traditionally, render is a smooth floated finish with a limited range of naturally occurring colours. The local vernacular rendering is recommended to be Suffolk Pink and light cream. The use of coloured render could also be possible as it doesn't require external painting and limits the need for future maintenance.






Flint

Flint buildings/walls finished with red/white brick dressing contribute strong character to the Parish area.

Flint should seek to complement building frontages and boundary treatments.

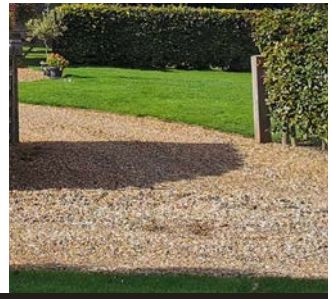
Roofing materials

The variation in roofing materials and pitch is important to the roofscape. The most common of which are slate and clay tiles.

The design of new buildings should incorporate roofing materials and patterns which complement their immediate context

Contemporary new-build development evokes the material palette of the area.

Public realm hard materials

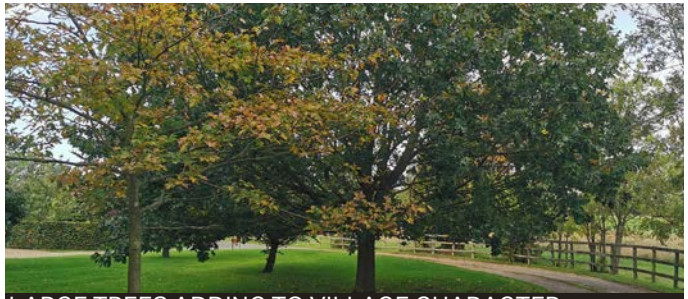



BOUND / LOOSE GRAVEL


BRICK PAVING

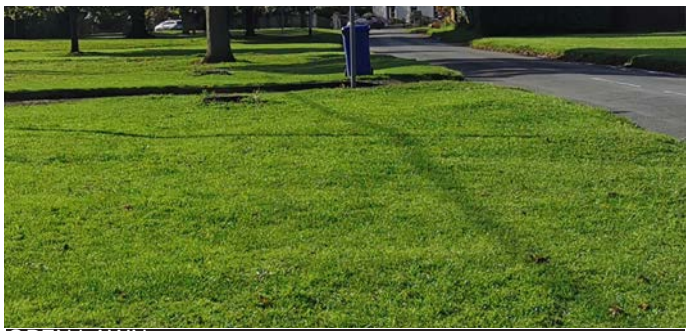
ASPHALT WITH LOW KERBING

Public realm soft materials



LARGE TREES ADDING TO VILLAGE CHARACTER

SOFT ROAD VERGE



OPEN LAWN

Street furniture

WOODEN FENCE

WOODEN FOOTPATH SIGNAGE

BLACK & WHITE BOLLARD

BLACK IRON RAILINGS

SIMPLE TIMBER SEAT

4.6. Environmentally responsible

4.6.1. Sustainable building

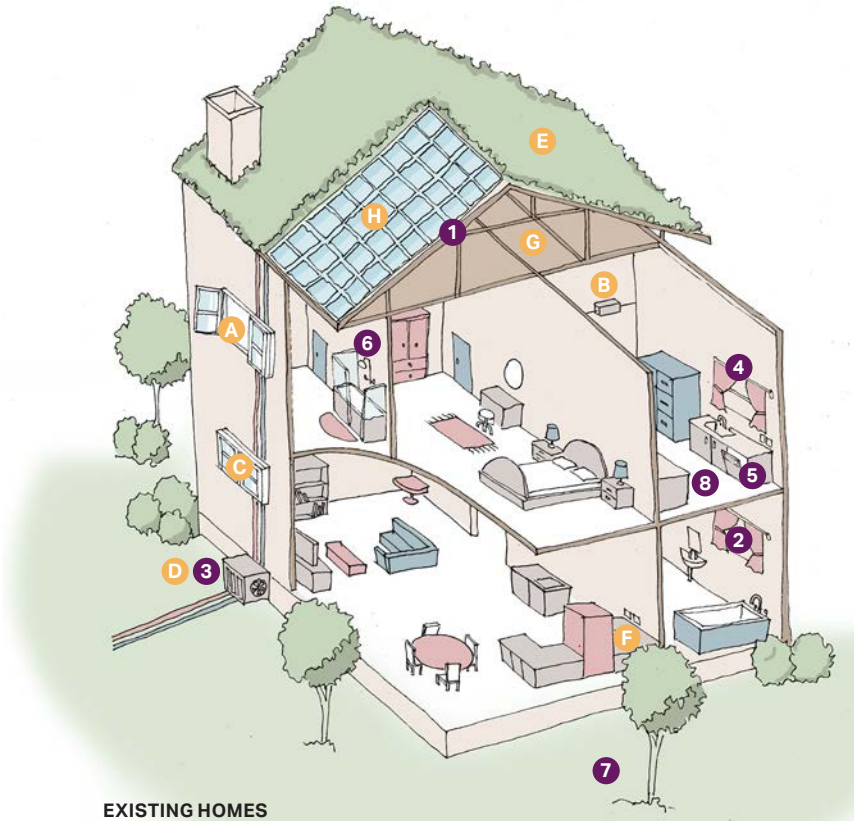
The following section elaborates on energy efficient technologies that could be incorporated in buildings and at broader Parish design scale as principles.

Use of such principles and design tools should be encouraged in order to contribute towards a more sustainable environment

Eco design

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

Starting from the design stage there are strategies that can be incorporated to incorporate technologies such as passive solar heating, cooling and energy efficient landscaping which are determined by local climate and site conditions.



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
- **G** **Construction and site planning** timber frames, sustainable transport options (such as cycling)
- **H** **Solar panel**

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

Figure 69: Diagram showing low-carbon homes in both existing and new build conditions.

4.6.2. Water management

Attenuation ponds and detention basins

Where appropriate, opportunities to integrate attenuation ponds and detention basins into new and existing developments in Barrow-cum-Denham should be examined to reduce the risk and severity of flooding.

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 they can provide.

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 should 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.
- Attenuation 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 70: 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.

Figure 71: Detention basin in Cambridge designed for public access.

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]

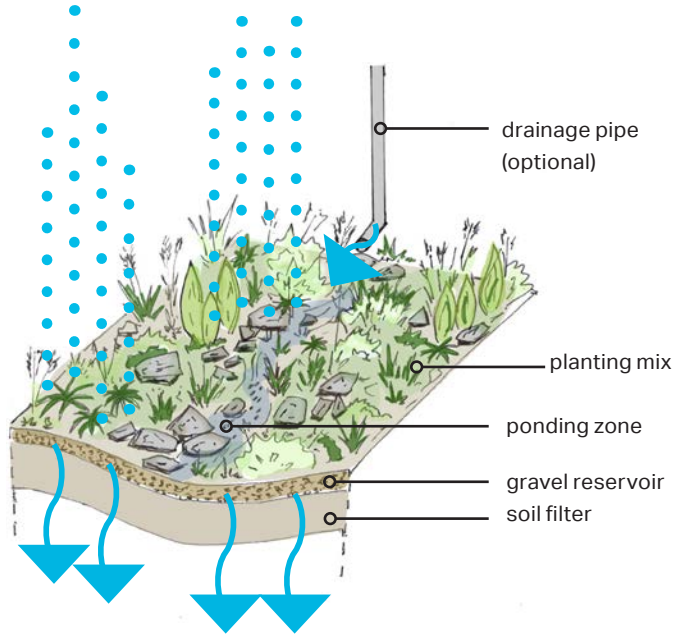


Figure 72: Diagram illustrating the functioning of a rain garden.

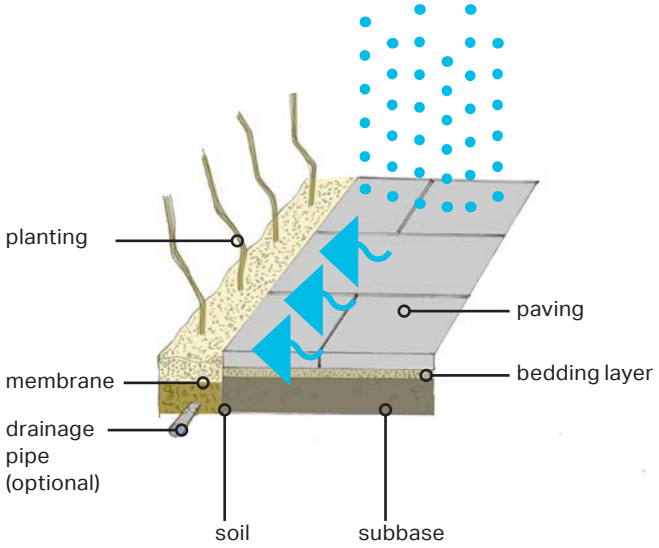


Figure 73: Diagram illustrating the functioning of a soak away garden.

Figure 74: Examples of rain gardens used along verges, Cambridgeshire.

Storage and slow release

Rainwater harvesting refers to the systems allowing the capture and storage of 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 complementary materials;
- Use attractive materials or finishing for pipes;
- Combine landscape/planters with water capture systems;
- Underground tanks; and
- Utilise water bodies for storage.

Figure 75: Examples of water butts used for rainwater harvesting in Reach, Cambridgeshire.

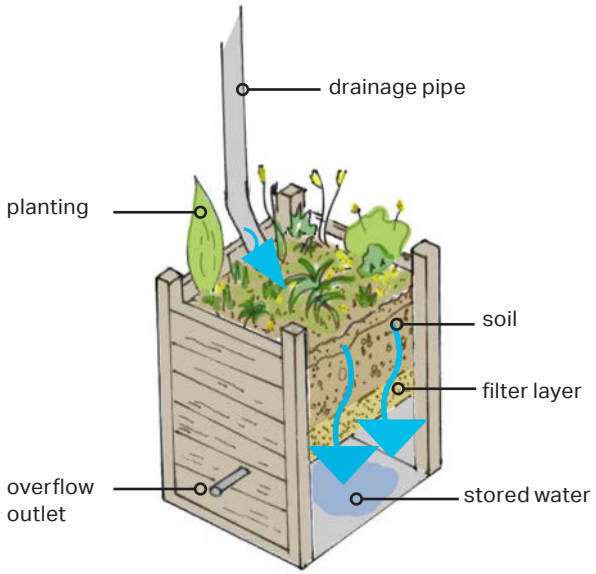


Figure 76: Diagram illustrating the functioning of a stormwater planter.

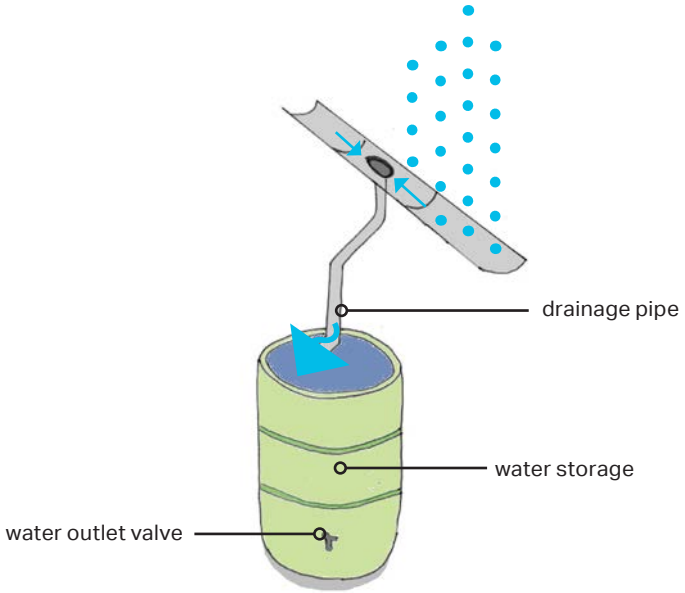


Figure 77: Diagram illustrating the functioning of a water butt.

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]

[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

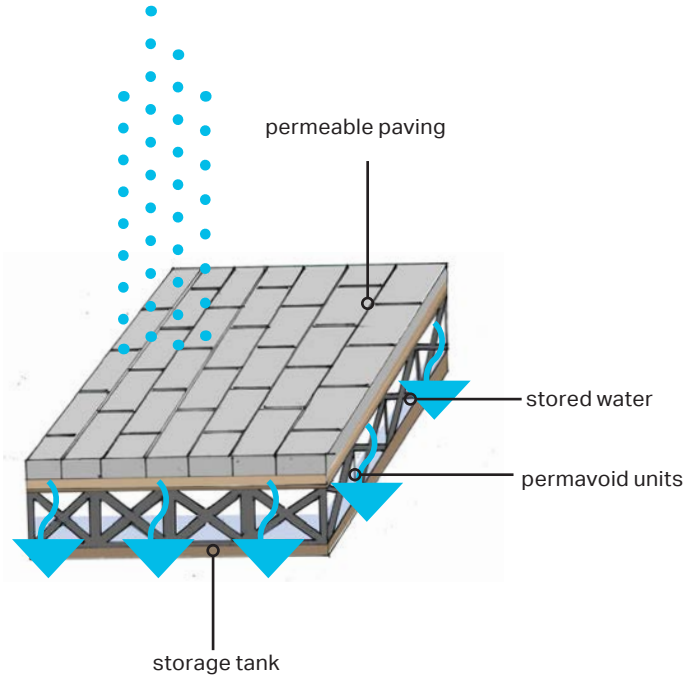


Figure 80: Diagram illustrating the functioning of a soak away

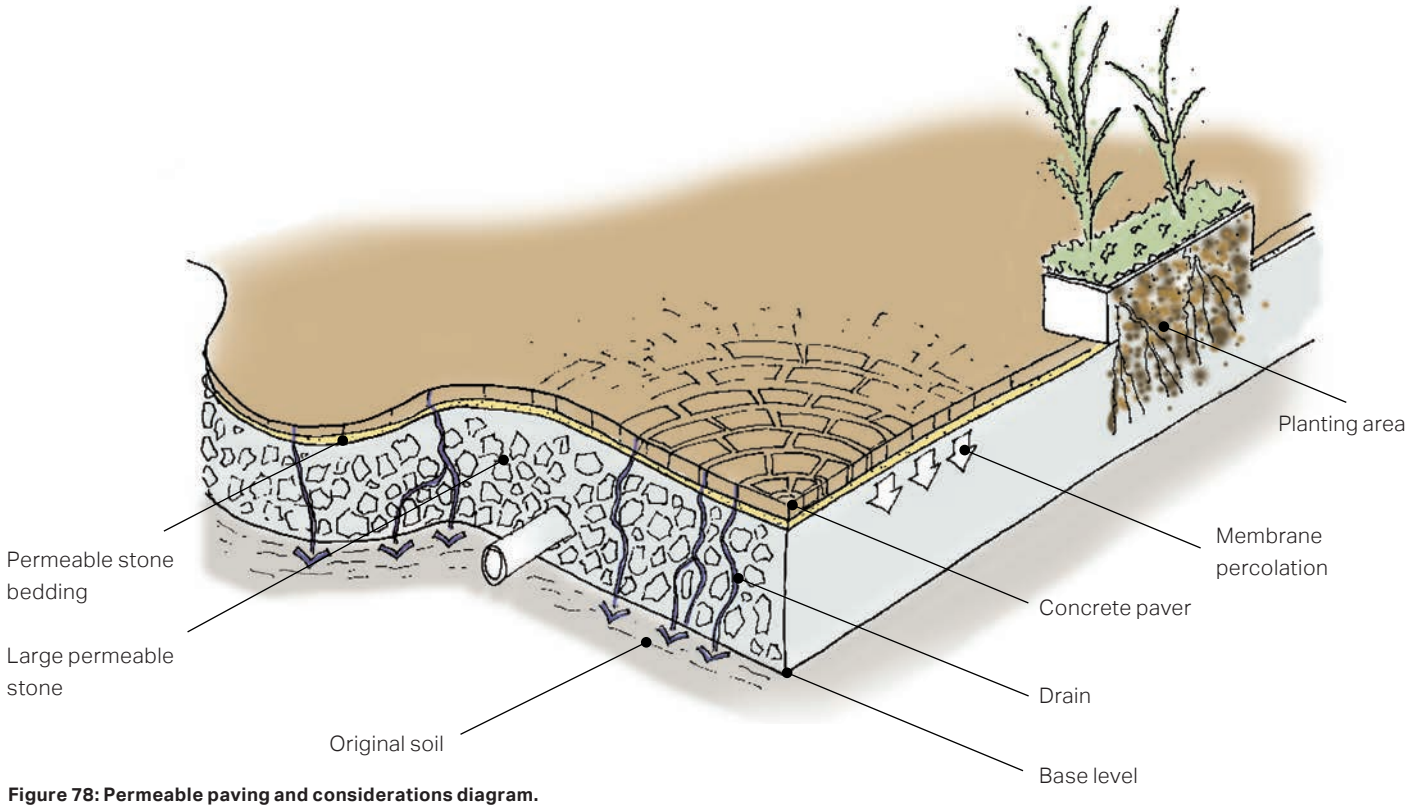


Figure 78: Permeable paving and considerations diagram.

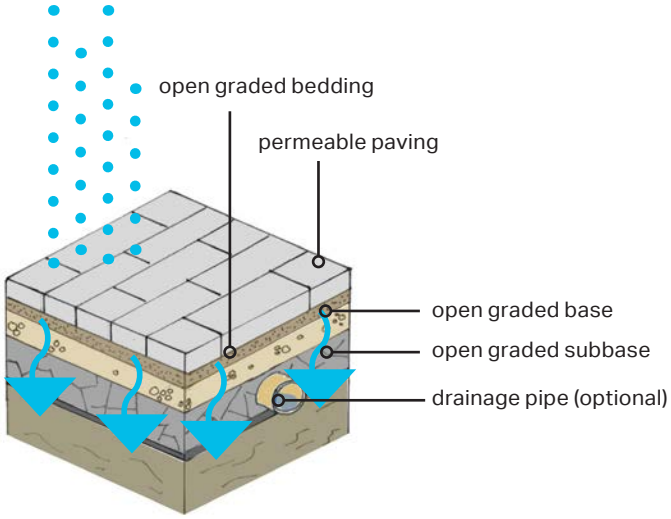


Figure 81: Diagram illustrating the functioning of a soak away

Figure 79: Examples of permeable paving treatments: unbound clay pavers (left), precast concrete setts (centre), and gravel (right).


Delivery
05

5. Delivery

5.1. Delivery

The Design Guidelines will be a valuable tool in securing context-driven, high-quality development in Barrow-cum-Denham. They will be used in different ways by different actors in the planning and development process, as summarised in the following 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 82: Grade-II listed Town Estate Room.

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