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Great Denham

Design guidance and codes

Final report
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Delivering a better world

Quality information

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Introduction

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Delivering a better world

1. Introduction

Through the Department for Levelling Up, Housing and Communities (DLUHC) Programme led by Locality, AECOM was commissioned to provide design support to Great Denham Parish Council.

1.1 The importance of good design

As paragraph 126 of the National Planning Policy Framework (NPPF) notes, 'good design is a key aspect of sustainable development, creates better places in which to live and work and helps make development acceptable to communities'.

Research, such as for the Government's Commission for Architecture and the Built Environment (now part of the Design Council; see, for example, The Value of Good Design[1]) has shown that good design of buildings and places can improve health and wellbeing, increase civic pride and cultural activity, reduce crime and anti-social behaviour and reduce pollution.

This document seeks to harness an understanding of how good design can make future development as endearingly popular and the best of what has been done before. Following an analysis of the Parish and good practice, these elements of good design are set out clearly as design principles which any development within Great Denham Parish should follow in order to comply with this Design Guidelines and Codes document.

1.2 What is a design code

The Governments Planning Policy Guidance defines design codes as:

'… a set of illustrated design requirements that provide specific, detailed parameters for the physical development of a site or area. The graphic and written components of the code should be proportionate and build upon a design vision, such as a masterplan or other design and development framework for a site or area. Their content should also be informed by the 10 characteristics of good places set out in the National Design Guide. They can be …appended to a Neighbourhood Plan…'.[2]

Those 10 characteristics are: the identity; built form; movement; nature; public spaces; uses; homes and buildings; resources, and lifespan.

This design guide will aim to address the above characteristics in relation to Great Denham, which is a new Parish, with a view for any new development to enhance what is already coherent in design.

1. https://www.designcouncil.org.uk/sites/default/files/asset/document/the-value-of-good-design.pdf

2. Paragraph: 008 Reference ID: 26-008-20191001 - Revision date: 01 10 2019.

1.3 The purpose of this document

The National Planning Policy Framework (NPPF) 2021, paragraphs 127-128 states that:

'*Plans should… set out a clear design vision and expectations, so that applicants have as much certainty as possible about what is likely to be acceptable. Design policies should be developed with local communities so they reflect local aspirations, and are grounded in an understanding and evaluation of each area's defining characteristics. Neighbourhood plans can play an important role in identifying the special qualities of each area and explaining how this should be reflected in development…*'

'To provide maximum clarity about design expectations at an early stage, plans … should use visual tools such as design guides and codes. These provide a framework for creating distinctive places, with a consistent and high quality standard of design. However their level of detail and degree of prescription should be tailored to the circumstances in each place, and should allow a suitable degree of variety where this would be justified.'

The Government is placing significant importance on the development of design codes in order to set standards for design upfront and provide firm guidance on how sites should be developed.

The Bedford Borough Local Plan allocates three sites for 185 homes within the Great Denham Neighbourhood Plan Area - two sites on Mercia Road and one in the Country Park. Planning applications have been submitted for 101 of the homes which are currently pending approval, whilst there is no application submitted yet for the remaining site (84 dwellings).

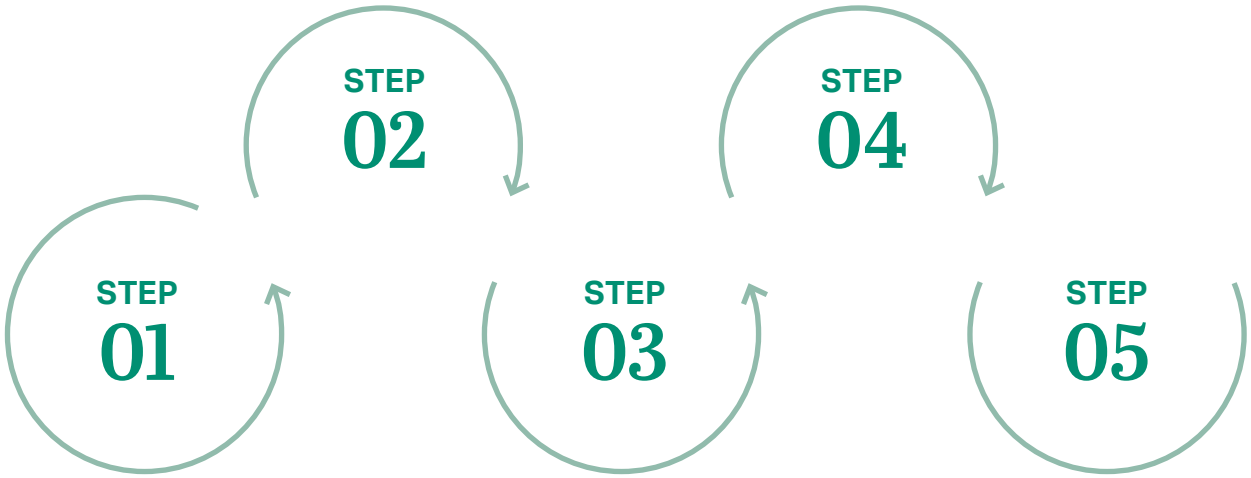
Thus, this Design Guidelines and Codes report will provide a detailed framework to make sure any design proposal, on that site as well as any other speculative development which comes forward, contributes to a distinctive place with a consistent and high quality standard of design.

In doing so, it draws on the lessons of the recent phases of development that have transformed Great Denham.

It is intended that the Design Guidelines and Codes report becomes an integral part of the Neighbourhood Plan and be given weight in the planning process.

1.4 Preparing the design code

The following steps were agreed with the Group to produce this report:



STEP 1

Initial virtual meeting between AECOM and the Great Denham Neighbourhood Plan Steering Group followed by a site visit.

STEP 2

Review of existing baseline documents.

STEP 3

Urban design and local character analysis.

STEP 4

Preparation of the design guidelines and codes based on the community engagement that took place on the 11th of September 2021.

STEP 5

Draft report with the design guidelines and codes and submission of the final report.

1.5 Planning and design guidance

The following documents have informed this document. Some of these guidelines have been produced at national, district or parish level.

Any new development application should be familiar with these documents and make explicit reference to how each of them is taken into account in the design proposals.

NATIONAL LEVEL

2021 - National Model Design Code
Department for Levelling Up, Housing and Communities (DLUHC)

This report provides detailed guidance on the production of design codes, guides and policies to promote successful design. It expands on 10 characteristics of good design set out in the National Design Guide.

2020 - Building for a Healthy Life
Homes England

Building for a Healthy Life (BHL) is the new (2020) name for Building for Life, the government-endorsed industry standard for well-designed homes and neighbourhoods. The BHL toolkit sets out principles to help guide discussions on planning applications and to help local planning authorities to assess the quality of proposed developments, but can also provide useful prompts and questions for planning applicants.

2019 - National Planning Policy Framework

Department for Levelling Up, Housing and Communities (DLUHC)

Development needs to consider national level planning policy guidance as set out in the National Planning Policy Framework (NPPF) and the National Planning Policy Guidance (NPPG). In particular, NPPF Chapter 12 sets out a number of principles that planning policies and decisions should consider ensuring that new developments are well-designed and focus on quality.

2019 - National Design Guide

Department for Levelling Up, Housing and Communities (DLUHC)

The National Design Guide illustrates how well-designed places that are beautiful, enduring and successful can be achieved in practice.

NATIONAL LEVEL

2007 - Manual for Streets

Department for Transport

Development is expected to respond positively to the Manual for Streets, the Government's guidance on how to design, construct, adopt and maintain new and existing residential streets. It promotes streets and wider development that avoid car dominated layouts but that do place the needs of pedestrians and cyclists first.

DISTRICT LEVEL

2021 - Local Plan 2040 (Draft-consultation stage)

Bedford Borough Council

2021 - Bedford Borough Design Guide SPD

Bedford Borough Council

This is still a work in progress with adoption before the end of March 2022. The Council is preparing a design guide which would provide general advice for future residential development in the Borough.

2020 - Local Plan 2030

Bedford Borough Council

The purpose of this document is to plan for Bedford Borough's growth needs to 2030 laying out the vision, objectives and strategies as well as site allocations.

DISTRICT LEVEL

2018 - Sustainable drainage systems SPD (Supplementary Planning Document)

Bedford Borough Council

This document addresses sustainable development across Bedford Borough by defining the requirements for the implementation of Sustainable Drainage Systems (SuDS) in future developments.

2014 - Adopted parking standards for sustainable communities SPD (Supplementary Planning Document)

Bedford Borough Council

This document provides guidelines on residential, non-residential and disabled car parking, as well as cycle parking.

2013 - Open Space SPD (Supplementary Planning Document)

Bedford Borough Council

This document provides guidance to enable landowners, developers and applicants to calculate the requirements for making provision for open space in new developments, assisting them in assessing development capacity and the value of land and making planning applications.

PARISH LEVEL

2009 - Great Denham Design Guide and Code SPD (Supplementary Planning Document)

Bedford Borough Council

This report aims to facilitate a higher quality development as a key part of creating sustainable communities for the future. It includes design and development principles, site development framework and design codes on street typologies, open space, building form and community facilities.

1.6 Area of study

Great Denham Parish is located on the western outskirts of Bedford, south of Biddenham and north of Kempston, in a loop created by the Great Ouse River. The Parish was the location of Bedford Golf Course which closed recently since October 2020.

The Parish is serviced by the A6 to the west providing additional connections to A4280 and A421 connecting the area to nearby towns and cities, for instance Northampton, Milton Keynes, Cambridge, Luton and Stevenage.

In addition, a Bus Gate located between Greenkeepers Road/Old Ford End Road connects Great Denham to Bedford but it is limited to bus access only. There are Public Rights of Way within the Parish, with some paths, either Public Rights of Way or permissive paths, along the former Golf Course providing connections to Biddenham and Kempston.

In terms of public transportation, a railway line runs through Bedford, which is the closest station to Great Denham, approximately 2km distance. There are also bus services running along the main spine road - Greenkeepers Road and King Alfred Way/Anglia Way.

There are a number of local facilities located along Kingswood Way and Saxon Way including a Primary School, an NHS medical centre, a private medical facility, The Village Pharmacy, a post office, Sainsbury's, a convenient store, a cafe and some shops, whilst there is not a pub in the area. For wider variety, however, locals visit Bedford Town Centre and out of town retail parks (e.g. Interchange).

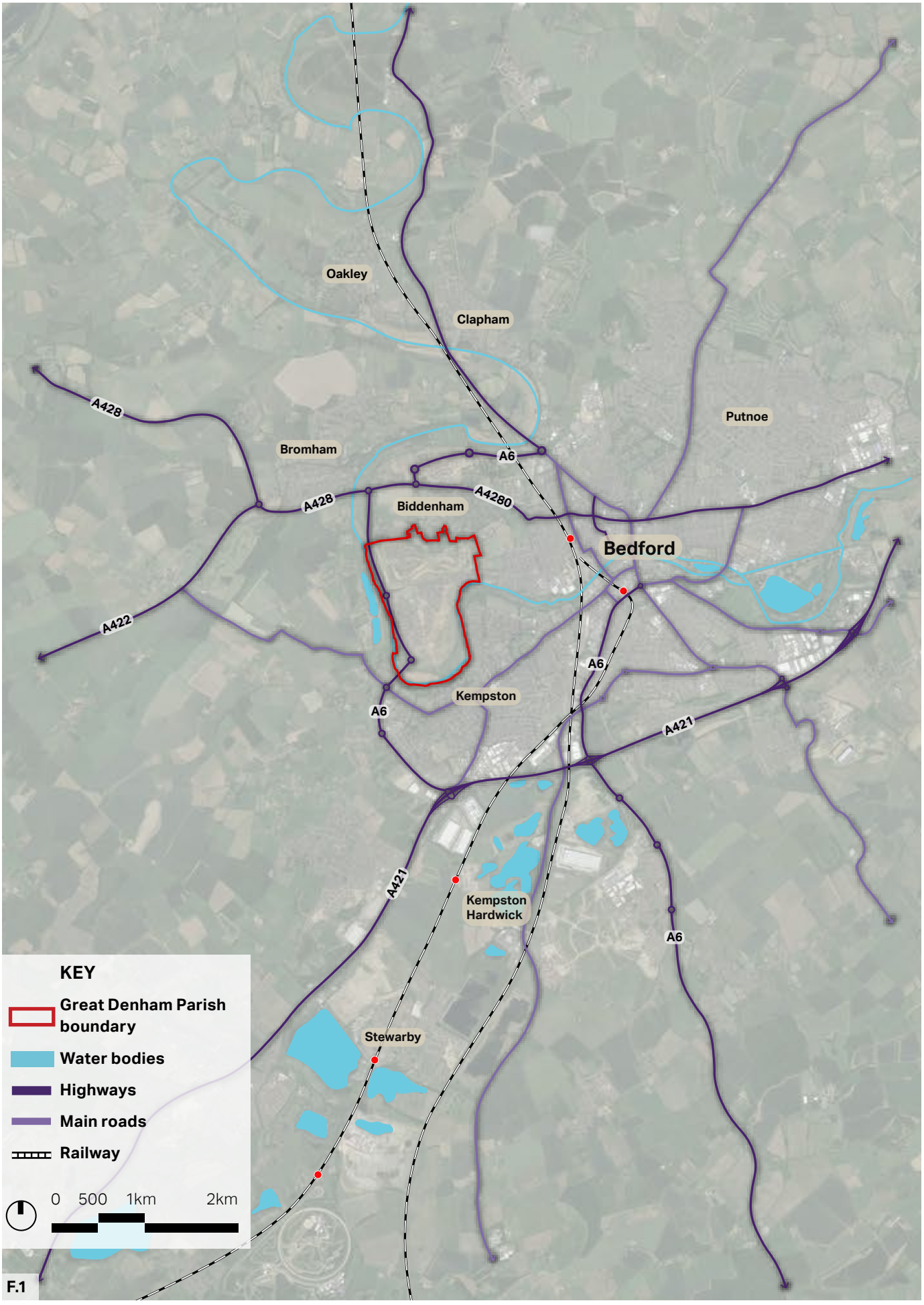


Figure 01: Great Denham Parish in a context.

Baseline study

02

2. Baseline study

This chapter describes the local context and key characteristics of Great Denham Parish related to history, built environment, streetscape and landscape.

2.1 Origins of Great Denham[1]

Great Denham has a long and interesting history. In particular, archaeological evidence indicates evidence of human activity and settlement during the new stone age period.

By the seventh century AD, the Great Denham area was in the Saxon kingdom of Mercia. By the time Alfred became King of the neighbouring Saxon Kingdom of Wessex in 871, the Danes had already conquered Mercia and by 876 were on the verge of taking Alfred's fiefdom. During the following spring Alfred led a surprise attack on the Danish army. Within 10 years Alfred had re-conquered large swathes of lost Saxon territory including London which was retaken in 886. However, the Danes still controlled a large part of eastern England and Alfred decided to conclude a peace treaty with the Danish king Guthrum. According to the treaty, the border would be defined by the rivers Thames, Lea and Ouse. The Great Denham loop of the Ouse was therefore the front line between the two hostile kingdoms.

The present day Parish of Great Denham was therefore on the front line in a situation some historians have equated to a 9th century Berlin Wall.

Among the Norman Barons of note was one Falkes de Breaute, referred to in some texts as 'the most hated man in England'. Holding land in seven counties, de Breaute controlled the Great Denham loop and other estates around Bedford. As a result of his many illegal forages and seizures, de Breaute was declared an outlaw and fled to France where he was poisoned in 1226.

Much fascinating information has come to light during the archaeological digs which took place before building was allowed to start. Most interesting of all was the discovery of the remains of a Bronze Age archer complete with the guard which protected his arm from the bow. A full size model of the archer is on display at The Higgins Museum and Gallery in Bedford.

1. Source: https://greatdenhamparishcouncil.gov.uk/the-parish/parish-history/.

2.2 Historic growth pattern and built form

Great Denham is a relatively recent Parish. To describe the existing layouts and growth patterns, it is useful to split the area into three different phases based on the construction phases.

Phase 1 (Date: 1990s)

Residential neighbourhoods to the north, along Carnoustie Drive and St Mellion Drive. All properties were built around the former Golf Course

The properties, all detached large houses, are set back from the meandering road and building rotations are relatively irregular. This creates irregular building lines offering interesting views along the streetscene. The gaps between buildings are generous, the building plots are large and the well-sized front and back gardens are equipped with rich vegetation, trees and flowers. The available parking typologies are on-plot and garages.

Residential neighbourhoods to the west of Kingswood Way

The properties are laid out along cul-de-sac streets which have the character of private drives with no pavement. Along those private lanes there is a sense of a shared space and enclosure with limited front gardens. However, the properties along the main road, Great Portway, are set back with rich vegetation and green verges in between to create a buffer. Building lines are slightly irregular, whilst building rotations vary creating a visual interest. There are gaps between buildings and well-sized back gardens bordered with physical boundary treatments. The available parking typologies are on-plot and garages.

Figure 02: Phase 1 of the historic growth of Great Denham.

Figure 03: Local examples of both the residential neighbourhood to the north (image above) and the south (image below).

Phase 2 (Date: 2010s) & Phase 3 (Date: 2020s)

The second phase, shown in Figure.4, along Greenkeepers Road, Saxon Way and roads off, comprises a comprehensive development including housing, employment, schools, community facilities and open space provision. This phase also includes the sites adjacent to Mercia Road, for which planning permission has not been granted yet. The growth pattern is substantially different to phase 1 area in terms of density, plot sizes and layout of buildings. The high density in this area is translated into minimal or no gaps between buildings, continuous building frontages, as well as a great number of rear parking courtyards; the latter creates large areas of hard landscaping. However, along the green edges, where density reduces, the gaps between buildings become bigger and the relationship with the adjacent nature and open green spaces is more apparent.

The third phase, shown in Figure.5, along King Alfred Way/ Anglia Way and roads off, includes the southern part of Great Denham. Again, density is higher than phase 1 area, which is translated into limited gaps between buildings and smaller plots. However, in contrast to phase 2 area, courtyard parking is limited in this area and it has been replaced by on-street parking and carports.

In general, there is substantially less vegetation in both phase 2 and 3 areas, compared to phase 1, with little or no front gardens and small rear gardens. The building lines are more regular, with small variations in building setbacks, creating a consistent frontage, whilst phase 1 area offers a variety of building setbacks and rotations that add greatly to the streetscene.

Figure 04: Phase 2 of the historic growth of Great Denham.

Figure 05: Phase 3 of the historic growth of Great Denham.

2.3 Access and street hierarchy

The main accesses to Great Denham are located along the A6 road which runs along the western boundary. Secondary roads are linked to the A6 providing connections throughout the area; Anglia Way runs from the south to the north, whilst Kingwood Way/ Greenkeepers Road runs from west to east connecting Great Denham to Bedford town centre for buses and pedestrians (but no direct vehicle access for drivers). In addition, Carnoustie Drive provides connection to the residences located at the former Golf Course to the north. Lastly, tertiary roads, most in the form of cul-de-sac streets, create additional connections within the residential neighbourhoods.

There is a network of footpaths running along the southeastern Parish boundary and across the former Golf Course. These footpaths lead to the neighbouring settlements of Bedford town centre, Biddenham, Bromham and Kempston, whilst also improving walkability within Great Denham.

Figure 06: Roundabout by the north entrance to Great Denham along Kingswood Way leading to Greenkeepers Road.

Figure 07: King Alfred/ Anglia Way is the south entrance to Great Denham.

Figure 08: Footpath connecting Greenkeepers Road to the residential neighbourhoods to the north crossing the former Golf Course.

Figure 09: Built form and street hierarchy in Great Denham Parish.

2.4 Green space, public realm and streetscape

The streetscape varies throughout the area presenting visual interest. In particular, the main road spines, like Greenkeepers Road or Kingswood Way, are characterised by green verges, footpaths, street trees, street lighting and occasional on-street parking. In addition, the carriageway is slightly meandering creating visually interesting curves. The cul-de-sac streets leading to the residential neighbourhoods have the character of private drives with narrower carriageway and with limited or no pavements. In the case of no pavements, the front gardens of the properties, where these exist, indicate the separation between private and public space. The neighbourhoods to the north have a more rural character with meandering streets with pavement, bordered with rich vegetation and open spaces.

The quality of the public realm is good with well-dimensioned pavements. The use of tarmac for pavements is consistent throughout the area. The use of permeable paving, patterns of setts, is found on some private drives and it is a positive element that adds to the character of the area. However, the issues of excessive on-street parking, that does not follow the anticipated earlier planning, clutters the streetscene.

In terms of open spaces, the area is benefited by a large amount of green space to the south, which lies within a flood plain, and to the north, location of the former Golf Course. In addition to this, there are also other examples of open spaces throughout the area providing opportunities for resting, socialising and play. Street furniture, found in some areas, includes benches, green elements and bins. However, there is a lack of facilities within those open spaces that could potentially attract people from all ages, for instance a skate park or a sports centre.

F.10

Figure 10: Map of Great Denham to indicate the location of the images presented on the next page.

Streetscape

On-street parking

Green verges & street trees

Meandering streets & rich vegetation

Connection with green links

Permeable paving in private drives

Private lanes with no pavement

Public realm

Provision for people with disabilities

Different materials in the public realm

Street furniture and green elements

Open spaces

Green links and sitting areas

Large green areas for sitting, walking & playing

Green spaces overlooked by properties

2.5 Landscape and flooding

A large part of Great Denham consists of green spaces. As mentioned in the previous sections, the green space to the north is a former Golf Course, whilst the green space to the south is a landscaped area with footpaths, street furniture, play and sports areas and the Archers Rest Cafe.

The flatness of the landscape makes particular elements stand out, for instance the belt of trees marking the course of the River, the individual trees and hedgerows around the area, the long-distance views across the green spaces and the water features and basins.

The south of Great Denham as well as the western side of the Parish boundary is susceptible to flooding. This area is designated as a Country park with a biodiversity plan managed by Bedford Borough Council and for the benefit of the wider community beyond Great Denham.

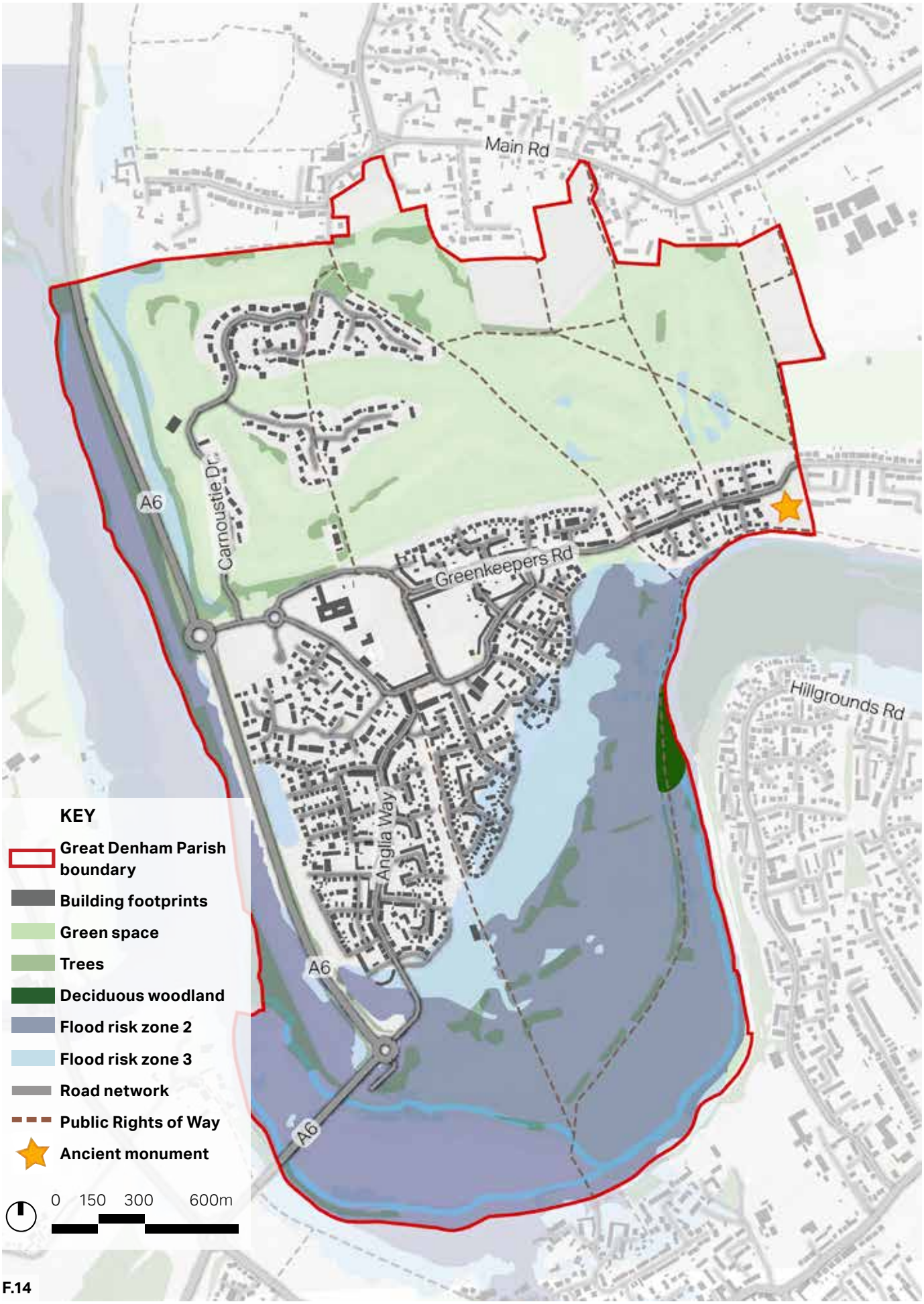
There are not many landscape designations within Great Denham, apart from a part of land to the eastern side of the Parish designated as deciduous woodland.

Lastly, there is a designation for a scheduled monument, which is an oval barrow, to the eastern corner of the Parish south of Greenkeepers Road.

Figure 11: View towards the former Golf Course.

Figure 12: View towards the green space to the south which is equipped with street furniture, trees, benches and footpaths.

Figure 13: Flooded south part of Great Denham during December 2020 (Source: Twitter).



F.14

Figure 14: Landscape and flooding in Great Denham Parish.

2.6 Building typology

There is a variety of building typologies in Great Denham including detached, semi detached, terraced housing, town houses, apartments, as well as some bungalows.

To the north, along Carnoustie Drive, only detached houses can be found, whilst to the south there is a mixture of the above mentioned typologies.

Figure 15: Local example of a detached housing typology in Carnoustie Drive, Great Denham.

Figure 16: Local example of an apartments typology in Great Denham.

Figure 17: Local example of a semi-detached housing typology in Great Denham.

Figure 18: Local example of terraced housing typology in Great Denham.

2.7 Building heights

The building heights in Great Denham ranges between 1 to 3 storeys; there are very few single storey properties.

In particular, the heights within the residential neighbourhoods to the north, along Carnoustie Drive, and to the west of Kingswood Way, the first phases of the development in Great Denham, range between 2-2.5 storeys, whilst 2.5 and 3-storey properties predominate in the later phases 2 and 3 of the development.

Figure 19: The average height to the north is about 2-2.5 storeys integrating nicely into the surrounding vegetation and landscape.

Figure 20: The average height in the residential neighbourhood west of Kingswood Way is 2-2.5 storeys and in combination with the physical elements creates an enclosed and friendly environment.

Figure 21: There are examples of 3-storey buildings within the recent development to the east and southeast that increase the average height of the area.

2.8 Building density

There are areas within Great Denham with great discrepancies in housing density. In particular, the approximate density in the residential neighbourhoods to the north, shown in Figure.22, is below 15 dph (dwellings/hectare). This is translated into a quite sparse layout, with a detached typology of housing and generous gaps between buildings, where nature prevails.

Towards the south, the approximate density in the residential neighbourhood west of Kingswood Way, shown in Figure.23, is below 25 dph (dwellings/hectare). This is translated into a layout with a mixture of detached, semi-detached and terraced housing typologies combined with open spaces, front gardens and rich vegetation.

In the later phases, the average density rises to the eastern and southeastern part of Great Denham, shown in Figure.24, above 50 dph (dwellings/hectare), creating a striking difference with the rest of the residential neighbourhoods where density is much lower. This is translated into a quite dense layout, with minimum or no gaps between buildings, a great number of parking courtyards resulting in small-sized back gardens, as well as limited or no front gardens.

SUMMARY

The table on the next page summarises the main elements of each development phase in Great Denham, as analysed in the previous sections, in terms of street hierarchy, building lines, boundary treatments, building density, typology, heights, open spaces and parking provision.

Figure 22: Approximate density is below 15 dph (dwellings per hectare).

Figure 23: Approximate density is below 25 dph (dwellings per hectare), in contrast to the neighbourhood to the south highlighted in pink) where density goes higher around 45.

Figure 24: Approximate density is above 50 dph (dwellings per hectare).

	Phase 1	Phase 2	Phase 3
Street hierarchy	Carnoustie Drive is the main access road to the area leading to a cul-de-sac street, same as St Mellion Drive. Carnoustie Drive is connected with Kingswood Way to the south end, which is in close proximity to the north entrance to Great Denham. The area to the south is accessed by Kingswood Way via Great Portway and Muirfield cul-de-sac roads.	Greenkeepers Road is the main vehicular spine of this area offering immediate connections to the north entrance to Great Denham from the west. Greenkeepers Road also provides connections to the east towards Bedford town centre for buses, cyles and pedestrians only. Mercia Road and Saxon Way are secondary, permeable, roads, whilst the rest of the tertiary roads in this area lead to cul-de-sac streets.	King Alfred/ Anglia Way is the main vehicular spine of this area offering immediate connections to the south entrance to Great Denham. Anglia Way also offers access to the residential developments to the east and west which are mainly serviced by cul-de-sac streets.
Building lines	The north area includes meandering streets with a variety of building setbacks and rotations, whilst the south area presents less irregularity in building setbacks and rotations. This offers visual interest along the streetscene for both drivers and pedestrians.	Less irregular building lines compared to phase 1 area. No or slight variations in building setbacks and general continuity of facades, due to the limited or no gaps between buildings. However, building lines along the edge lanes show a meandering character and offer more visual interest.	Same as phase 2.
Boundary treatments	There is rich vegetation in the north area including trees, hedges, hedgerows and bushes which enhances the rural feel. The south area, on the other hand is less vegetated, yet, the green coverage is adequate and offers a positive feel along the streets.	Significantly less vegetation in this area compared to phase 1 area. However, there are green verges and street trees along the roads, whilst the existing small-sized front gardens are decorated with flowerbeds and bushes. Along the edge lanes there is more vegetation, as well as the traditional style railings which is an important feature of Great Denham.	Same as phase 2.
Building density	Low building density (approximately between 15-25 dph).	Higher building density compared to phase 1, approximately 50 dph.	Slightly lower building density than phase 2, yet, still higher than phase 1, approximately around 40 dph.
Building heights	The heights in phase 1 area, north and south, range between 2-2.5 storeys.	2.5 and 3-storey properties predominate in this area, the later phase of the development.	2.5 and 3-storey properties predominate in this area, the later phase of the development.
Building typology	The north area only includes detached large properties, whilst the south area offers a mixture of detached, semi-detached and terraced housing.	This area includes a mixture of flats, terraced, detached and semi-detached typologies.	This area includes a mixture of flats, terraced, detached and semi-detached typologies.
Open spaces	The north area is adjacent the former Golf Course, where paths offer connections to the north and south of the Parish. The south area includes playground facilities and recessed open spaces.	This area is adjacent the former Golf Course to the north and the Country park to the south. There are green corridors running from the north to the south offering connections. In addition, the existing footpaths provide access to those green spaces, as well as to the River Great Ouse.	This area is adjacent the Country park to the south, whilst a green corridor offers immediate connections to it from Anglia Way. In addition, there are some examples of open green spaces within the residential area.
Parking provision	On-plot front parking or on-plot garages.	Parking courtyards are the prevailing typology creating issues on on-street parking, of anti-social behaviour and maintenance difficulties. On-street parking, which due to the lack of markings is confused for either parallel or echelon parking impeding sight lines. There are also some examples of on-plot parking.	Less parking courtyards compared to phase 2 area. Those have been replaced with on-street parking and carports.

Community engagement

03

3. Community engagement

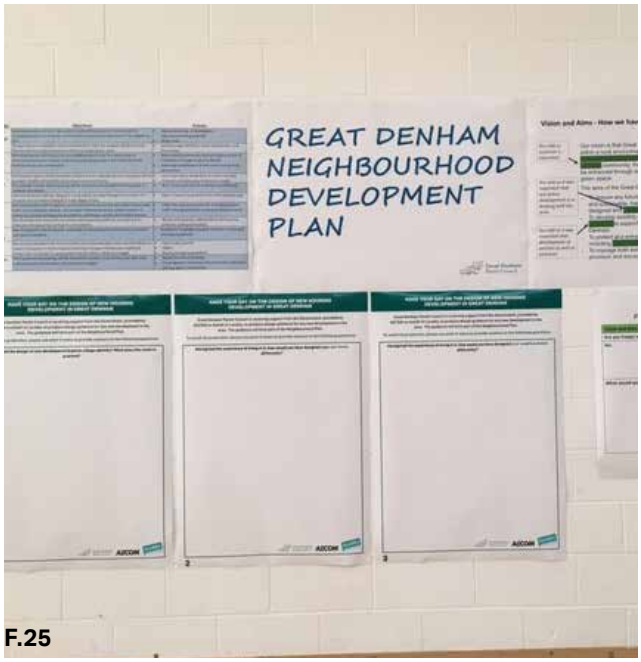
This chapter presents a summary of the feedback gathered during a community event that was held in September 2021.

3.1 Questions

A community event took place in September 2021 to seek views and opinions concerning the design of housing in Great Denham Neighbourhood Plan Area.

A set of posters were presented including three questions and people had the opportunity to add their comments. Those questions were:

- How should the design of new development build on **village identity**? What does this mean in practice?
- Having had the experience of living in it, how would you have designed your **own home** differently?
- Having had the experience of living in it, how would you have designed y**our neighbourhood** differently?



F.25

F.26

Figure 25: Posters from the community event.

Figure 26: People interacting and adding comments on the posters.

3.2 Findings

These findings, that represent people's views and needs, will be considered to shape the Design guidelines and Codes in Chapter 4.

Village identity

Need for **on-street parking** provision. Parking areas should have **greenery** and provide ground **soak areas** too.

Need for **local amenities**, i.e. new Primary School, Secondary School, a toy shop, a pub, a restaurant, a library.

Development should not be permitted on flood plain, whilst houses on edge need to be built/ modified to withstand limited **flooding**.

Provision for more **green open spaces** in new development. Easy access within less than 3 min walking distance.

Village centre that you want to **stop and stay** in rather than a car park.

Provision for **facilities for young people** and teenagers (e.g Youth Club, sports centre in the former Golf Course location, skate park).

Neighbourhood

Prevent development at the land adjacent to the Country Park by the running track, as it is a flood plain.

Retain the **pedestrian-friendly** layout to discourage car use. Pedestrian and cycle routes to school and other points of interaction should be included.

Formalise on-street parking and **1-way road** systems on some roads.

Pedestrian crossing by the school and local shops.

Enforcement of **double parking** near the school.

Fibre Broadband should be run to every new property and existing properties.

Courtyard parking - it is not clear to owner-occupiers who is responsible for the maintenance of the spaces.

Housing

Any new houses must reflect the existing **architecture** and **local vernacular.**

Physical boundary treatments and holes at the bottom of the fences to enhance biodiversity and movement of species.

Ensure **maximum space** of bedrooms in town houses and better **storage**.

Parking garages are supported by the community.

Sustainable homes (solar panels, renewable heating, better cooling/ airflow on the top floors during summer, ground source heat pumps etc.)

Wheelie bin storage and an on-pavement site for collection days.

All new homes should have **gardens.**

Design Guidance & Codes

04

4. Design guidance & codes

This chapter provides guidance on the design of development, setting out the expectations that applicants for planning permission in the Parish will be expected to follow.

4.1 Place making

What urban designers and planners call 'placemaking' is about creating the physical conditions that residents and users find attractive and safe, with good levels of social interaction and layouts that are easily understood.

The placemaking principles set out in the following pages should be used to assess the design quality of future development or regeneration proposals.

These key principles should be considered in all cases of future development as they reflect positive place-making and draw on the principles set out in many national urban design best practice documents.

F.27

Figure 27: The 10 characteristics of well-designed places. (Source: National Design Guide, page 8).

4.2 General principles

The design guidelines and codes, with reference to Great Denham Neighbourhood Plan Area, will follow a brief introduction of the general design principles.

The guidelines and codes developed in the document focus on residential environments including the site allocation (84 dwellings), as well as any other potential in-fill or small scale development within Great Denham.

In any case, considerations of design and layout must be informed by the wider context, considering not only the immediate neighbouring buildings, but also the landscape and character 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.

It is important 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.

Therefore, the general design principles that should be present in any design proposal are:

- Respect the existing settlement pattern of the area to preserve the local character;
- Respect and preserve the landscape and the flood plains in the Parish;
- Aim for high quality design that reflects and respects the local vernacular of the area;
- Integrate with existing paths, streets, circulation networks and 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;
- Ensure all components e.g. buildings, landscapes, access routes, parking and open space are well related to each other;
- Incorporate necessary services and drainage infrastructure without causing unacceptable harm to retained features; and
- Aim for innovative design and eco-friendly buildings while respecting the architecture of the area.

4.3 Great Denham design guidelines and codes

This section introduces a set of design principles that are specific to Great Denham Parish. These are based on:

- Baseline analysis of the area in Chapter 2;
- Understanding national design documents such as National Design Guide, National Model Design Code and Building for Healthy Life 12 Documents which informed the principles and design codes; and
- Discussion with members of the Neighbourhood Plan Steering Group and feedback from the community event and previous community surveys.

The codes are divided into **4 sections**, shown on the next page, each one with a different number of subsections. Each section and subsection is numbered (e.g DC.01) to facilitate its reading and consultation.

Theme	Code	Title
DC.01 Placemaking and local identity	1	Patterns of growth
	2	Legibility and wayfinding
	3	Boundary lines and boundary treatments
	4	Social and community infrastructure
	5	Materials and architectural details for buildings and public realm
	6	Housing sizes and storage space
DC.02 Access and movement	7	Prioritise walking and cycling
	8	People-friendly streets
	9	Parking and servicing
	10	Cycle parking
DC.03 Landscape, nature and open space	11	Create a green network
	12	Biodiversity
	13	Trees and open spaces
DC.04 Sustainability and energy efficiency	14	Sustainable buildings
	15	Minimising construction waste
	16	Recycling materials and buildings
	17	Water management (SuDS)

DC.01 Placemaking and local identity

Learning from earlier phases: Integrate new phases with previous ones, whilst applying lessons from them.

Code.1 Patterns of growth

New developments in Great Denham should respect the building and open space patterns of the existing settlement to contribute positively to its character and create a consistent scene. Guidelines for new development are:

- Any new development in Great Denham should be carefully designed to minimise negative impacts on the landscape. In particular, as stated in section 2.5, the flatness of the landscape, the long-distance views, the trees and hedgerows as well as the water features, all need to be taken into account during the design process;
- New developments must demonstrate an understanding of the scale, building orientation, enclosure, and façade rhythm of each phase of the development. The different densities, patterns of growth, heights and plot sizes, as analysed in sections 2.2-2.8, need to be carefully considered during the design process. However, any future development should aim to lower rather than increase the housing density experienced by the residents;
- Perimeter blocks must be employed consistently throughout the new developments in Great Denham. Their sizes and shapes should respond to the uses, existing landscape features, topography and residential density. Mews should be used within large blocks to create interesting and efficient arrangements;
- In the case of infill development, it should complement the street scene into which it will be inserted. It needs to reflect the materials, scale, massing and layout of the surrounding properties;
- New properties should provide a variety of house types. The use of a repeating type of dwelling along the entirety of the street should be avoided to create variety and interest in the streetscape;
- Physical boundaries such as hedgerows, bushes and flower beds, should enclose and define each street along the back edge of the pavement, adhering to a clear building line;
- Developments should avoid car-dependent layouts based on the monotonous repetition of a uniform building typology arranged along cul-de-sac streets;
- The layout of new development should optimise the benefits of daylighting, through the use of electric PV solar panels, and passive solar gains, through building orientation, as this can significantly reduce energy consumption; and
- New developments should have regard to the future climate change implications as well as the flood sensitivity in the area.

Figure 28: Properties are set back overlooking green links that create a buffer with adjacent countryside and provide shortcuts to surrounding neighbourhoods promoting walking and cycling.

DC.01 Placemaking and local identity

Settlement edges

Great Denham settlement area is surrounded by large green areas and therefore, those edges need to be treated properly to allow for a smooth transition. Thus, some design guidelines for future developments are:

- Any existing vegetation needs to be retained and integrated into new development;
- New green verge with trees could be added to serve as an additional buffer between new and existing developments or new development and the surrounding countryside. Some successful local examples can be found along Garyn Lane and Wortham Close; and
- Edges must be designed to link rather than segregate existing and new neighbourhoods. Where physical boundaries are found, those must be retained and integrated into new green corridors between existing and new neighbourhoods. Those corridors can provide an additional pedestrian and cycle links that will contribute to the successful integration with the town.

The illustration on this page present design principles to connect the new and existing settlements with a green space and edge lane which provide space for walking and cycling.

1. Retained green hedges at the back of existing properties.
2. New green verge with trees on both sides of the green link serving as an additional buffer (width varies).
3. New private drive or edge lane used by vehicles and cyclists.
4. New residential frontage with boundary hedges and front gardens.

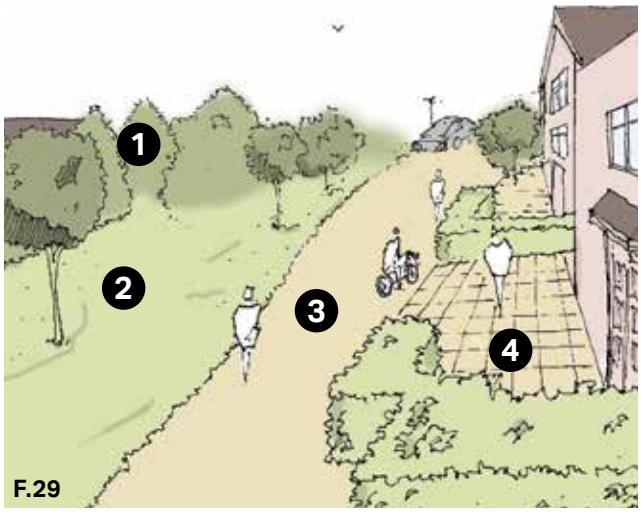


Figure 29: Sketch of potential edges with the new settlement.

Figure 30: Local example of an edge lane to the south of Great Denham bordered with green features that create a buffer with the adjacent countryside.

DC.01 Placemaking and local identity

Learning from earlier phases: Retain pedestrian- and cycle-friendly approach.

Code.2 Legibility and wayfinding

When places are well signposted, they are easier for the public to comprehend. It is easier for people to orientate themselves when the routes are direct, particularly for people with dementia and related cognitive and sensory challenges. Guidelines for new development are:

- A familiar and recognisable environment makes it easier for people to find their way around. Obvious and unambiguous features should be designed in new development;
- New development should use road names that promote the history of the former golf and Great Denham area;
- Buildings which are located at corners, crossroads or along a main road could play a significant role in navigation;
- At a local level, landmark elements could be a distinctive house, public art, or even an old and sizeable tree;
- New signage design should be easy to read. Elements likes languages, fonts, text sizes, colours and symbols should be clear and concise, and avoid confusion;
- Signage can also help highlight existing and newly proposed footpaths and cycle lanes, encouraging people to use them more;
- Signage should be strategically located to signalise gateways and access points, creating connections with important places and destinations; and
- Signage elements and techniques should be appropriate to the character of the area and be a nice fit to the existing architectural style and details.

Figure 31: Buildings with a distinct style or architectural detail stands out and can act as a landmark for the area, Great Denham.

Figure 32: Signage posts should have a consistent style to avoid confusing the users and help them find their way around, Great Denham.

Figure 33: Small open spaces within the built environment occupied with street furniture and green features can act as landmark for the area creating a memorable route, Great Denham.

DC.01 Placemaking and local identity

Learning from earlier phases: Continue street-based perimeter block design, with secure rear gardens.

Code.3 Boundary lines and boundary treatments

Building line and boundary treatments vary across Great Denham. To respect the existing context, both the building and the boundary features should be consistent with neighbouring properties while enabling enough variations for visual interest. Guidelines for new development are:

- Buildings should front onto streets. The building line should have subtle variations in the form of recesses and protrusions but should 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, whilst still enabling adequate natural surveillance; and
- Hard boundary treatments like the traditional style railings, that are a notable feature across Great Denham, should also be promoted. The use of either panel fencing or metal or concrete walls in these publicly visible boundaries should be avoided.

Figure 34: Limited physical boundary treatments with relatively regular building lines and setbacks creates a consistent streetscene with no variations, Greenkeepers Road, Great Denham.

Figure 35: Rich vegetation and physical boundary treatments with irregular building lines and setbacks. This creates the image of a 'greener' place close to the countryside, Great Portway, Great Denham.

Figure 36: Rich vegetation and physical boundary treatments with irregular buildings lines and low density which gives the impression that natures prevails, St Mellion Drive.

DC.01 Placemaking and local identity

Learning from earlier phases: More facilities for young people in particular, and people-friendly local centres.

Code.4 Social and community infrastructure

Although there is a number of local amenities in the area located along Kingswood Way and Saxon Way, there is not a great variety to meet the needs of the wider group of people. It is a consensus that more local amenities are needed to make the area a place to stop and stay offering a high level of engagement. Guidelines related to social and community infrastructure are:

- Existing and proposed social and community infrastructure should be sympathetic with the existing architectural style of the surrounding buildings;
- Any new social and community infrastructure should be designed in high standards to act as a focal point and landmark for the area and improve the civic pride and the character of Great Denham;
- New development should propose green space provision between any new residencies and the commercial centre;
- New development should propose facilities for young people and teenagers. For instance, the former Golf Clubhouse and Course could be used as a Youth Club including a skate park and other facilities to attract young people;
- Proposals for new local amenities could include a pub, a restaurant and a library;
- In terms of parking provision, new facilities should not create additional congestion in the area and parking dominance should be avoided. Ideas like sharing parking areas with existing facilities in the local centre, like Sainsbury's Local, should be considered; and
- Signage and wayfinding should be used to highlight options for sustainable transport modes and promote walking and cycling. This could potentially increase movement and activity in the streets enhancing natural surveillance and therefore, minimising any possibility of antisocial behaviour.

Figure 37: Existing local centre in Great Denham with facilities on the ground floor and housing on the first floor, along Saxon Way.

Figure 38: Land of former Golf Course which is currently not utilised for sport could be transformed into sporting ground to attract a wider group of people, whilst improving its existing condition, Great Denham.

DC.01 Placemaking and local identity

Learning from earlier phases: Reflect local built forms that generally work well.

Code.5 Materials and architectural details for buildings and public realm

Building forms

The materials and architectural detailing used throughout Great Denham can be a positive reference point for new development and contribute to its character. Guidelines for new development are:

- The materials should be of a high quality and reinforce local distinctiveness. Development proposals should demonstrate that the palette of materials has been selected based on an understanding of the surrounding built and natural environment;
- Locally sourced bricks or bricks that match the buildings in the surrounding area would be the most appropriate. Particular attention should be given to the bonding pattern, size, colour, and texture of bricks; and
- Any future phase must be sympathetic to the area closest to it, whilst addressing issues identified as learnings from all the work that has been done to date.

This section includes examples of architectural details and building materials that contribute to the local vernacular of Great Denham Parish and which could be used to inform future development.

DC.01 Placemaking and local identity

Roofing

Gabled roof

Hipped roof

Dutch roof

Grey slate tiles

Red slate tiles

Clay tiles

Gabled dormer

Hipped dormer

Shed dormer

Walling (windows, facades, doors etc.)

Sash window

Casement window

Sash window in wooden frame

DC.01 Placemaking and local identity

Walling (windows, facades, doors etc.)

Red brick combined with dark red

Combination of coloured bricks

Yellow brick & decorative brick work above windows

Painted brick

Timber framing with off white render infills & brick

Red brick and vegetation on facades

Render - off white

Door with gabled porch and vegetation

Door with glass openings & stone faux pillars

Physical boundaries

Well maintained front garden

Rich vegetation along boundary lines

Bushes and flower beds on front gardens

DC.01 Placemaking and local identity

Public realm

Streets are the most important components of public space and these are referenced in the hierarchy of movement section.

Paved areas are a major element within most developments and their design has a significant impact on the overall appearance, quality and success of a scheme. Care must be taken when choosing appropriate materials and when detailing paved areas as part of the overall design.

High quality materials such as stone, gravel and brick can provide a durable and attractive hard surface, although there is an extensive range of modern materials that can contribute positively to the quality of outdoor spaces if chosen with care. The laying pattern and materials used should make a significant contribution to the overall appearance, quality and success of a scheme. If laying patterns used random bond, broken bond, gauged width, and the European fan should be preferred. Overall design guidelines on good quality of public realm are:

- The public realm should provide high quality paving sensitive to the surrounding context using sustainable and durable materials;
- Permeable paving is encouraged to contribute to rain water infiltration;
- Street trees and grass verges, where appropriate, should be integrated into the design of the public realm;
- Street furniture should be added in the public realm only if they serve a purpose, whilst unnecessary features should be avoided; and
- Large unbroken areas of a particular surface material should be avoided, especially tarmac. Areas can be made distinctive by using materials of a similar colour but with different textures.

Figure 39: Examples of quality materials and visually pleasing layout patterns that could be considered for public realm surfacing.

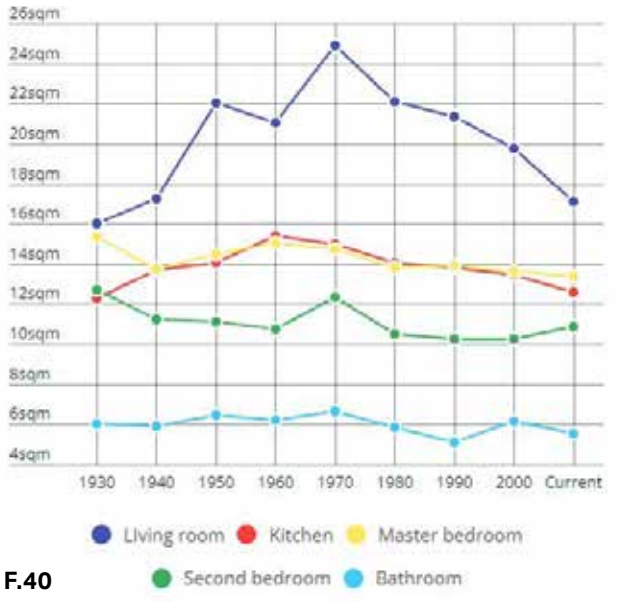
DC.01 Placemaking and local identity

Learning from earlier phases: Address perceived shortfalls in storage space.

Code.6 Housing sizes and storage

New homes being built in the current decade are smaller than before with the average house size now below the low of the 1930s. In the 1980s the average housing size was around 75 m^2. By the 1990s, the average UK house had shrunk to 73.4 m^2 and then to 72.38 m^2 in the first decade of this century. After 2015, minimum space standards were introduced. However, even though the rules were laid down, the Local Authorities could choose whether or not to enforce them. Design guidelines for new development are:

- Ensure that the minimum space standards of bedrooms are met by design;
- Ensure that minimum space standards for interior storage are met. In particular, 1.5 m^2 built-in storage is required for 1 bedroom, 2 m^2 for 2 bedrooms, 2.5 m^3 for 3 bedrooms and 3 m^2 for 4 bedrooms; and
- Innovative design can propose ideas for maximising the storage space. Some indicative examples are shown in Figure.41. However, those examples should not undermine the importance of adequate housing sizes.



F.40

F.41

Figure 40: Graph to illustrate how room sizes have changed over time from 1930-2018. Source: LABC Warranty.

Figure 41: Innovative ideas for built-in storage spaces (Source: https://homesthetics.net/under-stair-storage/., https://www.familyhandyman.com/article/built-in-storage-solutions-for-small-spaces/., https://www.housebeautiful.com/home-remodeling/diy-projects/how-to/g2037/diy-storage-solutions/.

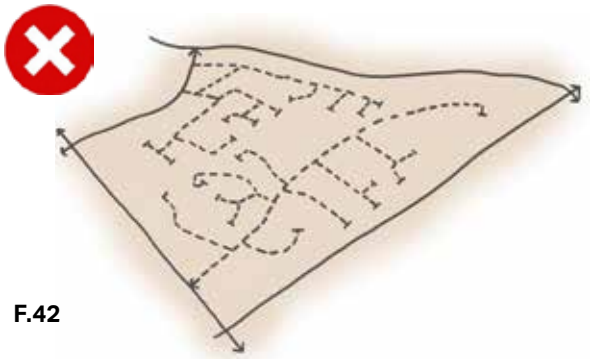
DC.02 Access and movement

Learning from earlier phases: Retain pedestrian- and cycle-friendly approach.

Code.7 Prioritise walking and cycling

There is a network of footpaths within Great Denham creating connections from the south to the north and the surroundings settlements. New developments should introduce well connected and attractive pedestrian and cycling routes to encourage residents to use walking and cycling as their preferred way of traveling within the area. Guidelines for future development are:

- Varied links should be enabled and created to favour pedestrian and cycle movement. This means that streets should be connected with each other and different travel options and routes should be considered. Good practice favours a generally connected street layout that make it easier to travel by foot, cycle, and public transport. These routes should benefit from natural surveillance, activity and paths with good sightlines and unrestricted views which make people feel safer;
- In the cases where there are fences or railings acting as barriers for vehicle movement between ends of closes, gaps should be proposed to allow walking and cycling. In addition, fences should not be higher than 0.8m;
- All newly developed areas must provide direct and attractive footpaths between neighbouring streets and local facilities. Streets must be designed to prioritise the needs of pedestrians and cyclists;
- A connected street network at all levels provides people with a choice of different routes and generally allows traffic to be distributed more evenly across the network rather than concentrated onto heavily trafficked roads; and
- Short and walkable distances are usually defined to be within a 10 minute walk or a five mile trip by bike. If the design proposal calls for a new street or cycle/pedestrian link, it must connect destinations and origins. In addition, connected streets must provide a safe and pleasant environment at all times.



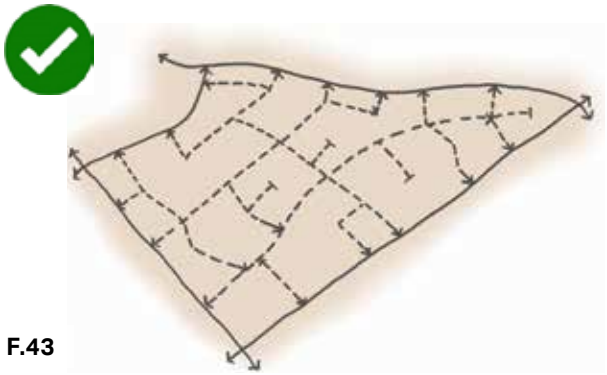


Figure 42: A layout dominated by cul-de-sac streets encourages reliance on the car for even local journeys.

Figure 43: A connected layout, with some cul-de-sac streets, balances sustainability and security aims in a walkable neighbourhood.

DC.02 Access and movement

Learning from earlier phases: Retain pedestrian- and cycle-friendly approach.

Code.8 People-friendly streets

It is essential that the design of new development includes streets and junctions that incorporate the needs of pedestrians, cyclists, and, if applicable, public transport users. Guidelines for future development are:

- Streets must meet the technical highways requirements, as well as being considered a 'place' to be used by all. It is essential that the design of new development includes streets and junctions that incorporate the needs of pedestrians, cyclists, and if applicable, public transport users;
- Vehicular and pedestrian permeability between roads and phases of development should be prioritised. Examples such as dead-ends on Woodville Road must be avoided;
- It is important that on-street parking is more formalised, does not impede the access of pedestrians and other vehicles and it is well vegetated with ground soak areas;
- Within the development boundaries, streets should not be built to maximise vehicle speed or capacity. A range of traffic calming measures could be introduced by design;
- New streets should be linear with gentle meandering, while also providing evolving views to the surrounding countryside;
- Routes should be laid out in a permeable pattern, allowing for multiple choices of routes, particularly on foot. Any cul-de-sac streets should be relatively short and well-overlooked by onward pedestrian and cycle links;
- Streets must respect the existing vegetation, while also incorporating new opportunities for landscaping, green infrastructure, and sustainable drainage; and
- Any new development should provide well-connected streets of varied character. A legible street hierarchy should include primary, secondary, tertiary roads and edge lanes. The next pages present illustrations and examples of those street typologies.

DC.02 Access and movement

Primary streets

- Primary streets are the widest neighbourhood roads and they are also the main routes used for utility and emergency vehicles, as well as buses;
- Primary streets must be defined by strong building lines. Primary frontages alongside the road should include taller and more dense developments; and
- Street trees and/or green verges along the road should be provided to contribute to local biodiversity, and provide cooling and shading.

F.44

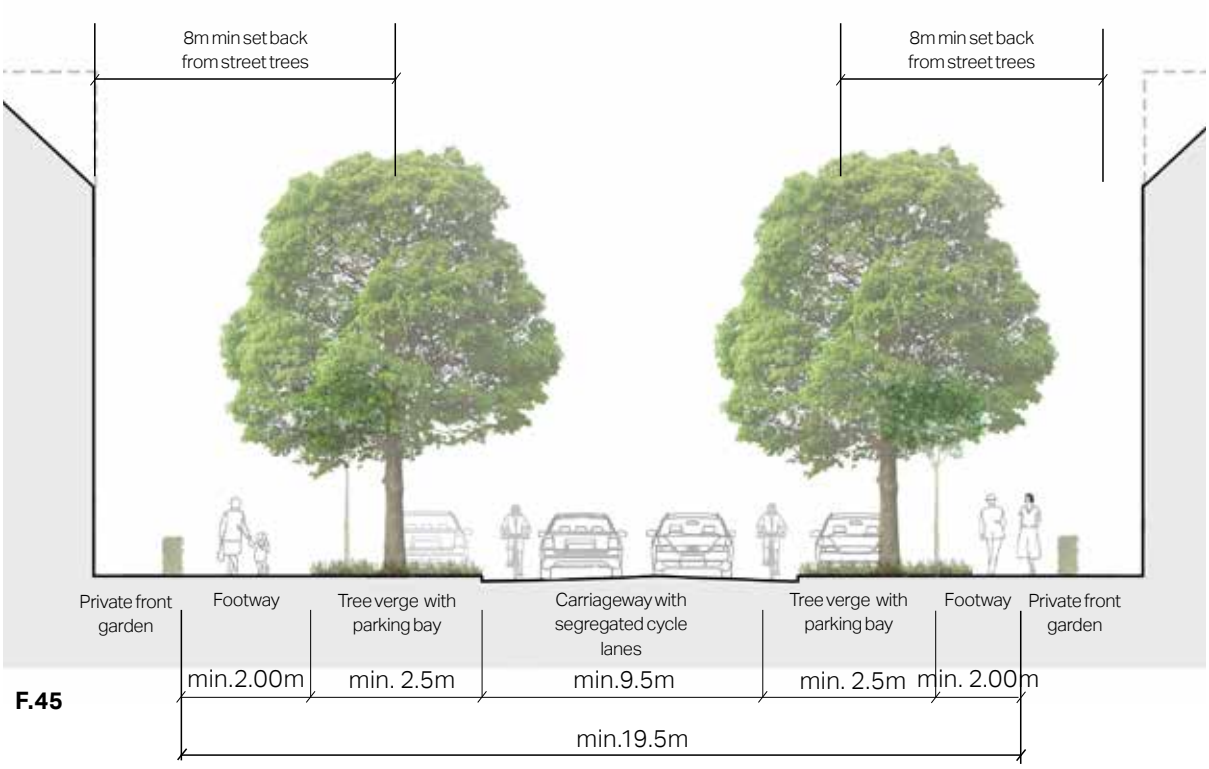


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Figure 44: Local example of a primary street in Great Denham.

Figure 45: Cross-section to illustrate some guidelines for primary streets.

DC.02 Access and movement

Secondary streets

- Secondary streets should accommodate carriageways wide enough for two-way traffic. On-street parking may be on or accommodated on the street or inset into green verges;
- Carriageways should be designed to be shared between motor vehicles and cyclists. Vertical traffic calming features such as raised tables may be introduced; and
- Where possible, secondary streets should be tree-lined on both sides.

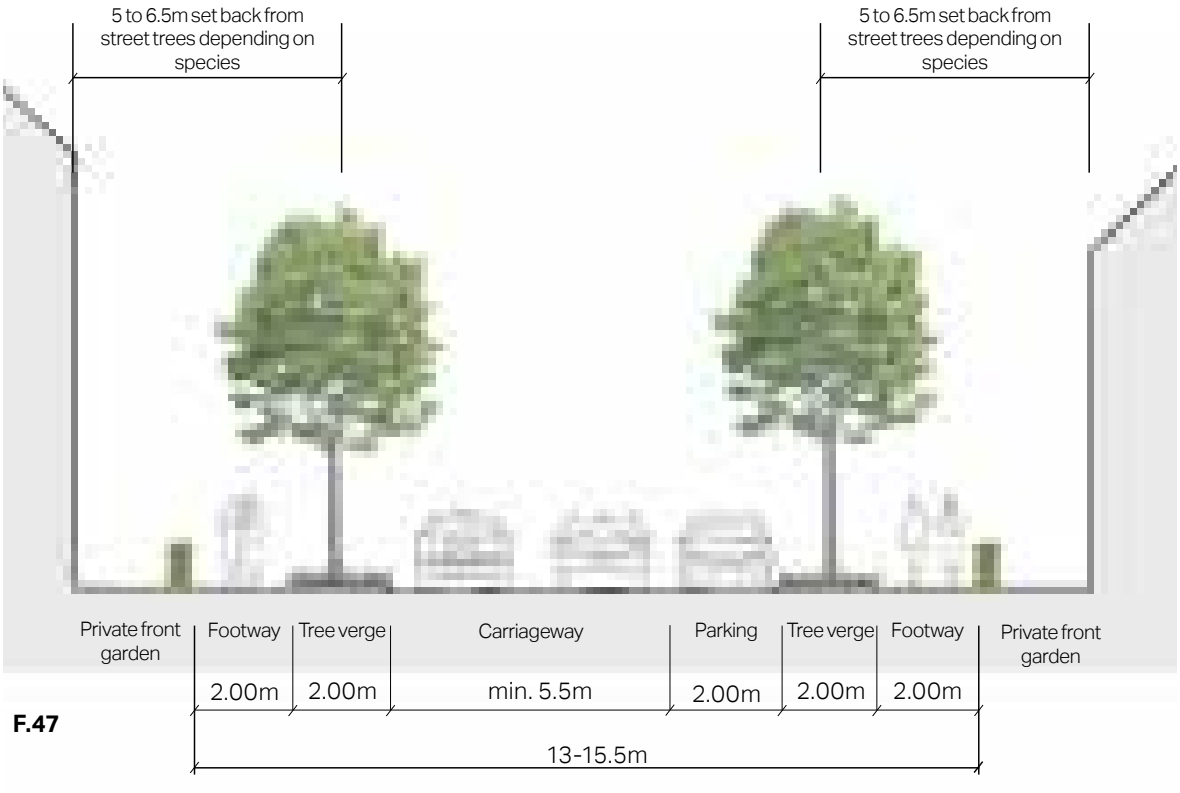


Figure 46: Example of a tree-lined secondary street elsewhere in UK.

Figure 47: Cross-section to illustrate some guidelines for secondary streets.

DC.02 Access and movement

Edge lanes

- All the edges of new development areas should be served by continuous edge lanes to provide high level of connectivity;
- Shared surfaces are recommended in this street typology to facilitate movement for all users;
- Edge lanes are low-speed streets that front houses with gardens on one side and a green space on the other. Carriageways typically consist of a single lane of traffic in either direction, and are shared with cyclists;
- In the cases where the edge lanes lead to private driveways, connections with footpaths can help maintain pedestrian movement; and
- Variations in paving materials and textures can be used instead of kerbs or road markings.

F.48

F.49

Figure 48: Local example of an edge lane where properties with well vegetated front gardens overlook the adjacent park, Great Denham.

Figure 49: Cross-section to illustrate some guidelines for edge lanes.

DC.02 Access and movement

Reducing anti-social behaviour

Reducing anti-social behaviour does not only imply a case of designing better locks and bolts, but also proposing measures and tools in the built environment which influence choices and behaviour and therefore, help prevent crime.

In particular, in order to create safe environments for the residents, the following suggestions related to the public realm, streetscape and built form shall be taken into account:

- Promote active frontages to bring life and vitality to streets and public spaces. Introducing regular doors, windows, front gardens and front parking will stimulate activity and social interactions;
- Maximise natural surveillance addressing the corner buildings. When a terrace, detached or semi-detached house faces out onto the corner, the buildings should have the main entrance and habitable room windows facing both sides to create activity, and should overlook the street; and
- Structure layouts so that it is very difficult to gain access to properties from the rear from publicly accessible places. This means that rear parking courtyards, if included, must be designed with great care (Please see Code 9 below). However, these should also only be used in exceptional circumstances.

Overall, the aim is to create places that people perceive as safe and feel comfortable walking around rather than 'running home'.

Street lighting

Street lighting is an important condition for creating safe places for people. However, it also needs to be sensitive to the surroundings and avoid creating issues of light pollution, as well as be in keeping with the rest in the village and those it is near. Guidelines to ensure there is enough consideration given at the design stage are presented below:

- Consider lighting schemes that could be turned off when not needed ('part-night lighting') to reduce any potential adverse effects;
- Foot/cycle path light should be in harmony with surrounding rural landscape. Lightings, such as solar cat's-eye lighting, reflective paint and ground-based lighting could be introduced;
- Choice of lighting should be energy-efficient and sustainable. The installation of motion sensors on the lights should be encouraged; and
- Any new developments and house extensions designs should encourage the use of natural light sources.

Figure 50: Example of a foot/cycle path which is lit by solar cat's-eye providing some light for pedestrian and cyclists without creating any disturbance to the nearby properties or unacceptable levels of light pollution.

DC.02 Access and movement

Learning from earlier phases: Much less reliance on parking courtyards.

Code.9 Parking and servicing

Parking is a sensitive matter for Great Denham as there are many issues that need to be addressed. Those issues include limited parking spaces and therefore, cases of unofficial, on-street parking and abundance of parking courts with minimum vegetation. The following guidelines will aim to resolve the above issues and promote the importance of integrating car parking into the design.

Guidelines for on-street car parking

- The streetscape should not be dominated by continuous on-street parking spaces. Where possible, tree planting and grass areas can be incorporated between parking bays to improve aesthetics;
- On-street parking can be parallel, perpendicular, or echelon in relation with the traffic speed and the traffic volume. Clearly delineated parking areas are needed to indicate whether the parking is parallel, perpendicular or echelon. This will help to avoid confusion about the type of parking, like the parking at Ryder Close which impedes sight lines;
- On-street parking must be designed to avoid impeding the flow of pedestrians, cyclists and other vehicles; and
- Paving should be permeable and there should be ground floor soak areas.

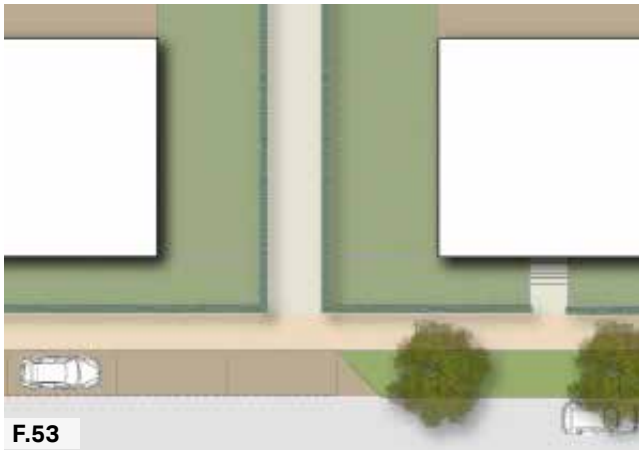


Figure 51: Local example of on-street car parking with little vegetation between the parking bays, Great Denham.

Figure 52: Local example of on-street car parking with green verges and street trees in between the parking bays, Great Denham.

Figure 53: Illustrative diagram showing an indicative layout of on-street inset parking.

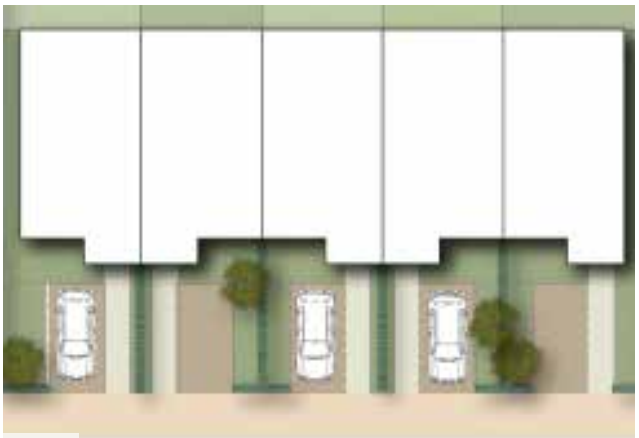
DC.02 Access and movement

Guidelines for on-plot or on front car parking

- Parking should be well integrated into design so as not to dominate the public realm;
- High-quality and well-designed soft landscaping, hedges, hedgerows, and trees, should be used to increase the visual attractiveness of the parking and enhance the rural character of the Parish; and
- Hard standing and driveways must be constructed from porous materials, to minimise surface water run-off and therefore, help mitigate potential flooding.

Guidelines for garages

- The use of garages should be considered where housing density permits and provision of storage is of benefit;
- Garages must not dominate the appearance of dwellings and must not reduce the amount of active frontage to the street;
- New development should provide minimum 3m x 7m internal space to park a car and also allow space for cycle storage to avoid the garage to be used for storage purposes only or to be converted into a room; and
- Provision for electric vehicle charging points should be considered.



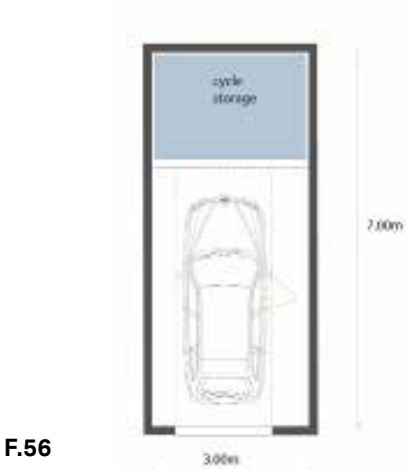


Figure 54: Illustrative diagram showing an indicative layout of on-plot front parking.

Figure 55: Local example of on-plot garage, Great Denham.

Figure 56: Indicative layout of a garage with a cycle storage area.

DC.02 Access and movement

Guidelines for parking courts

As seen in phase 2, parking courtyards have created multiple issues of anti-social behaviour, crime, upkeep and maintenance difficulties and impact on on-street parking. Therefore, this parking typology, if used, should be designed with careful consideration and moderation. In exceptional small scale cases, where a parking court may be acceptable, guidelines are:

- Parking courts should only be acceptable for small building clusters and permeable paving should be used where possible, the impact on on-street parking should be factored in when considering parking courts as a design option;
- Parking courts must be overlooked by properties to increase natural surveillance; and
- Planting and vegetation should be integrated into design to soften the presence of cars and preserve the character of the area.

Figure 57: Local example of parking courts within Great Denham with little vegetation and limited natural surveillance.

Figure 58: Local example of parking courts within Great Denham with little vegetation and limited natural surveillance.

Figure 59: A courtyard with informal perpendicular and garage parking in Poundbury, Dorchester.

DC.02 Access and movement

Electric vehicle charging points for on-street parking or parking courts

- Car charging points should always be provided adjacent to public open spaces;
- Where charging points are located on the footpath, a clear footway width of 1.5m is required next to the charging point to avoid obstructing pedestrian flow; and
- Car charging points within parking courts should be supported, since they can serve more than one vehicle. Each parking court should be able to serve at least half of the allocated spaces. However, where a parking court is privately owned, sharing of charging points may not be possible as parking is allocated to specific properties.

Off-street car parking

- Mounted charging points and associated services should be integrated into the design of new developments, if possible with each house that provides off-street parking; and
- Cluttering elevations, especially main façades and front elevations, should be avoided.


F.60


F.61


F.62

Figure 60: Example of on-street electric vehicle charging points.

Figure 61: Example of electric vehicle charging points in a parking court.

Figure 62: Example of off-street electric vehicle charging points.

DC.02 Access and movement

Servicing

With modern requirements for waste separation and recycling, the number and size of household bins has increased. This, in combination with the large number of parking courts that accommodate those bins, poses a problem with the aesthetics of the property and the management of the bins. Therefore, we recommend the following:

- When dealing with waste storage, servicing arrangements and site conditions should be taken into account; in some cases waste management should be from the front of the building and in others, from the rear. It is recommended that bins are located away from areas used as amenity space;
- An on-pavement site could be proposed for collection days;
- Create a specific enclosure of sufficient size for all the necessary bins;
- Bins should be placed as close to the dwelling's boundary and the public highway, such as against a wall, fence, hedge but not in a way as to obstruct the shared surface for pedestrian and vehicle movements;
- Place it within easy access from the street and, where possible, with the ability to open on the pavement side to ease retrieval;
- Wheelie bin storages are recommended to improve the aesthetics of the environment; and
- Bin storage could be combined with cycle storage, subject to sufficient consideration for security being made.

Figure 63: Example of wheelie bin storage for front gardens that include a green element to improve the aesthetics.

Figure 64: Example of wheelie bin storage to be located in parking courts and mitigate the presence of cars.

DC.02 Access and movement

Learning from earlier phases: Promote space for cycle parking in garages and gardens where possible.

Code.10 Cycle parking

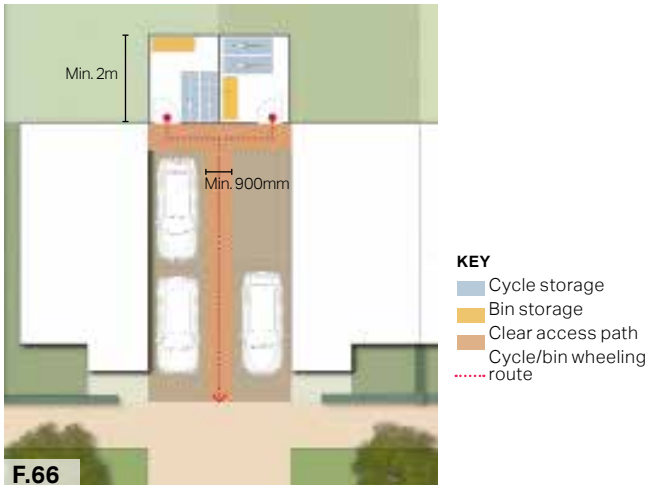
Houses without garages

- For residential units, where there is no on-plot garage, covered and secured cycle parking should be provided within the domestic curtilage, as shown in Figure.65;
- Cycle storage must be provided at a convenient location with an easy access;
- When provided within the footprint of the dwelling or as a free standing shed, cycle parking should be accessed by means of a door at least 900mm and the structure should be at least 2m deep; and
- The use of planting and smaller trees alongside cycle parking can be used.

Houses with garages

- The minimum garage size should be 7m x 3m to allow space for cycle storage;
- Where possible, cycle parking should be accessed from the front of the building either in a specially constructed enclosure or easily accessible garage;
- The design of any enclosure should integrate well with the surroundings; and
- The bicycle must be removed easily without having to move the vehicle.


F.65



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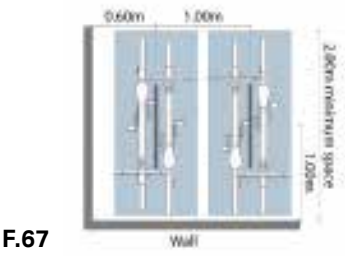
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Figure 65: Example of secured cycle parking for houses without garages, London.

Figure 66: Indicative layout of a bicycle and bin storage area at the back of semi-detached properties.

Figure 67: Sheffield cycle stands for visitors and cycle parking illustration.

DC.03 Landscape, nature and open space

Learning from earlier phases: Continue to provide and improve green networks.

Code.11 Create a green network

Green networks, corridors and linkages are widely seen as a key mechanism for reversing the effects of fragmentations on biodiversity as well as having a positive social impact to communities. Thus, guidelines for new development are:

- New development should offer a variety of open spaces hosting a diverse range of planting and trees. This landscape also improves air quality and can help to mitigate flooding;
- 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;
- Front and back gardens can also play an active role in terms of biodiversity and circulation of species;
- Landscape in open spaces should be of high quality and incorporate native species that are likely to thrive, thus encouraging local character and civic pride;
- New and existing landscapes and open spaces should be located within walking distance (5m) from their intended users and be connected via other green and urban networks such as footpaths, tree lined streets and public rights of way;
- These networks are often more useful to create visual amenity, for recreational use and wildlife corridors than isolated parks; and
- New developments when adjoining public open spaces and important [illegible]aps should [illegible]rface in the [illegible] made up [illegible]ivacy strips

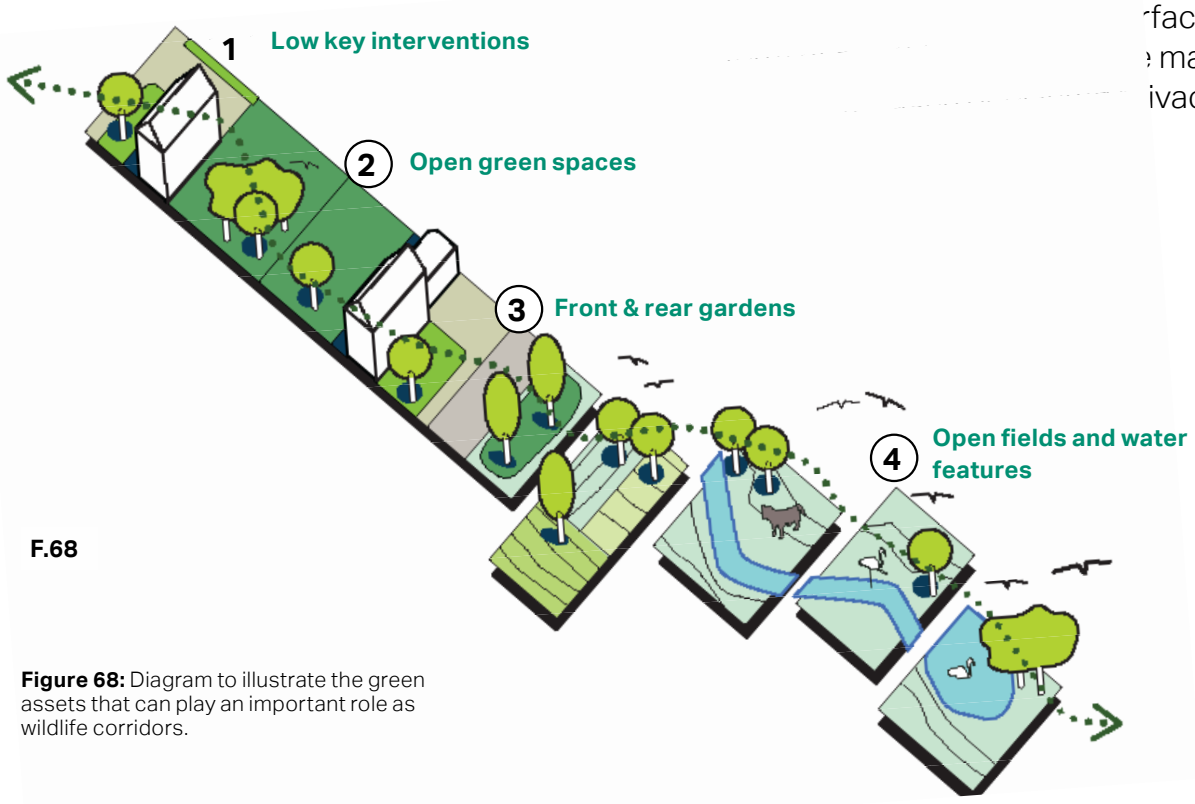


Figure 68: Diagram to illustrate the green assets that can play an important role as wildlife corridors.

DC.03 Landscape, nature and open space

Figure 69: Trees, grass and other forms of vegetation improve the environment while also act as wildlife corridors for species, Great Denham.

Figure 70: Open green spaces within the built environment enhance openness, Great Denham.

Figure 71: Front and back gardens, if well vegetated, can enhance the biodiversity of species, whilst improving the aesthetics of the neighbourhood, Great Denham.

Figure 72: View to the River Great Ouse which is nicely integrated within the open space and acts as a blue corridor for species, Great Denham.

DC.03 Landscape, nature and open space

Learning from earlier phases: Even greater focus on biodiversity, including within housing plots.

Code.12 Biodiversity

Biodiversity should be a priority in new development. The Environment Act (November 2021) sets out the requirement for a net gain in biodiversity of a minimum 10% for development sites which will become mandatory with the introduction of secondary legislation in due course. Design guidelines are:

- Natural features and woodlands should be protected and enhanced where possible;
- New development proposals should aim for the creation of new habitats and wildlife corridors, e.g. by aligning back and front gardens or installing bird boxes, bricks in walls, swift boxes and bat bricks;
- Gardens and boundary treatments should be designed to allow the movement of wildlife and provide habitat for local species. For that reason, rich vegetation and plantation is suggested, as well as holes to the bottom of the fences;
- Blue assets can also contribute to biodiversity connectivity. Therefore, the existing ditches and lakes should be considered in design proposals when planning for wildlife corridors;
- All areas of biodiversity that require further planting/ enhancement should be planted before start of construction; and
- A wildlife-friendly environment should be created and supported in new development. The habitats of insects, amongst other species, should be preserved and enhanced.

Figure 73: Example of a birdbox located on a grass area opposite a public footpath.

Figure 74: Example of a bughouse located in an outdoor playground facility.

Figure 75: Example of a structure used as a frog habitat corridor located in an outdoor green space.

DC.03 Landscape, nature and open space

Learning from earlier phases: Continue to provide and protect open spaces.

Code.13 Trees and open spaces

Trees are important contributors in addressing the climate change resilience. When planting new trees or retaining existing ones, the following principles apply:

- Aim to preserve existing mature trees and hedges by incorporating them in the new landscape design;
- To ensure resilience and increase visual interest, a variety of native tree species is preferred over a single one;
- Flower beds, bushes, shrubs and hedgerows should be welcomed in new developments, since they contribute to the livelihood of the streetscape and create visual interest and colour to their surroundings;
- Native trees can normally be used to mark reference points and as feature elements in the streetscape;
- Native trees should also be present in any public open space, green or play area to generate environmental and wildlife benefits; and
- The success of tree planting is more likely to be achieved when it has been carefully planned to work in conjunction with all parts of the new development, parking, buildings, street lights etc.

Open spaces play a vital role in creating a positive environment. These are places fostering community and gathering, thus creating lively places in neighbourhoods. Therefore, new development should prioritise the design of open spaces and design guidelines are:

- The location of new open spaces within new development should be decided based on the location of the existing ones considering the needs of the existing population too;
- All recreational spaces should be designed to link up with each other and with the built environment to meet the needs of a wide group of people;
- Substantial recreational space should be provided to include woodland walks, river walks, sport pitches and play areas to meet the needs of the young people in the community;
- Surrounding buildings should overlook play areas and public spaces to encourage movement and natural surveillance;
- Prevent development at areas located within flood plain, e.g. the land adjacent to the Country Park by the running track and use them as open green spaces;
- Open spaces should be equipped with good quality of street furniture to create pleasant seating areas, shaded spaces avoiding hidden spots; and
- The materials and style of any street furniture in the open spaces should be consistent throughout the Parish and aim to proudly represent the local character.

DC.03 Landscape, nature and open space


F.76


F.77


F.78

Figure 76: An example of flower beds and vegetation in a green space which also acts as a SuDS corridor, Northampton.

Figure 77: Example of street planting and vegetation along footpaths between properties to create a pleasant environment and encourage people to walk, Great Kneighton, Cambridge.

Figure 78: Properties overlooking a public open space which is equipped with grass areas, large green trees and street furniture, Poundbury.

DC.04 Sustainability and energy efficiency

Learning from earlier phases: Greater emphasis on sustainable buildings.

Code.14 Sustainable buildings

This code elaborates on energy efficient technologies that could be incorporated in buildings. The use of such principles and design tools is strongly encouraged to futureproof buildings and avoid the necessity of retrofitting.

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

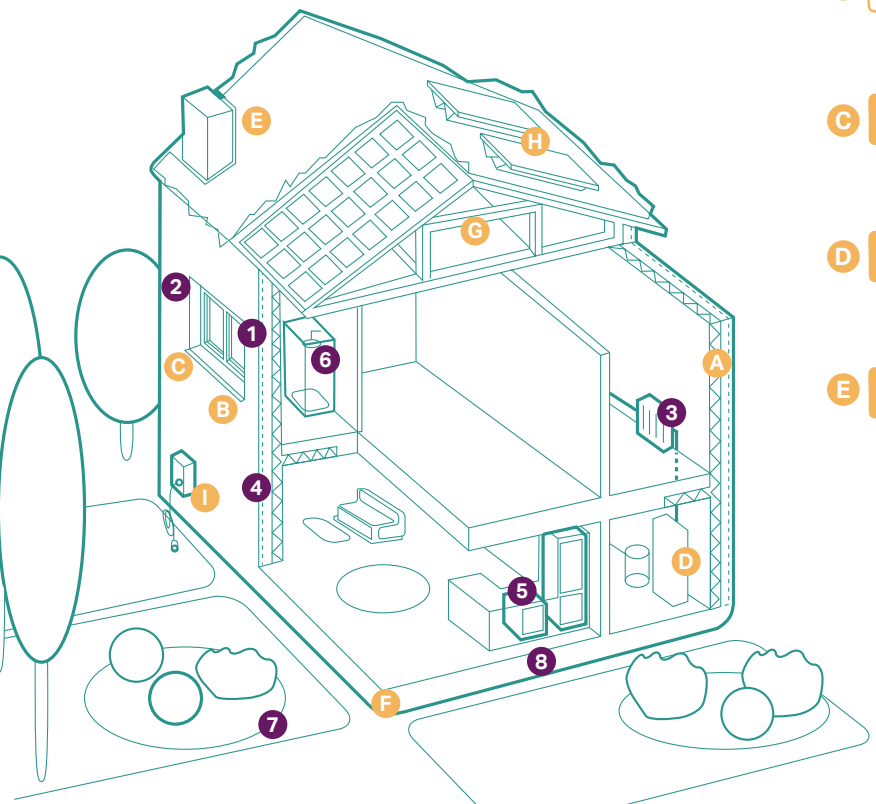
The diagram on this page illustrates strategies that can be incorporated, from the design stage or retrofitted, towards passive solar heating, cooling and energy efficient landscaping.

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. **Drought proofing** of floors, walls, 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.

Additional measures in 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. **Electric PV solar panels.**
I. **Electric car charging point.**



DC.04 Sustainability and energy efficiency

The aspect and orientation of a building is crucial to eco-design techniques since it helps maximise solar gain. For that reason, one of the main glazed elevations should be within 30° due south to benefit from solar heat gain. Any north-facing façades might have a similar proportion of window to wall area to minimise heat loss on this cooler side (Please see Figure.79);

The aim of these interventions is to reduce overall home energy use as cost effectively as the circumstances permit. The 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.

This page includes some indicative examples of the available eco-design principles.

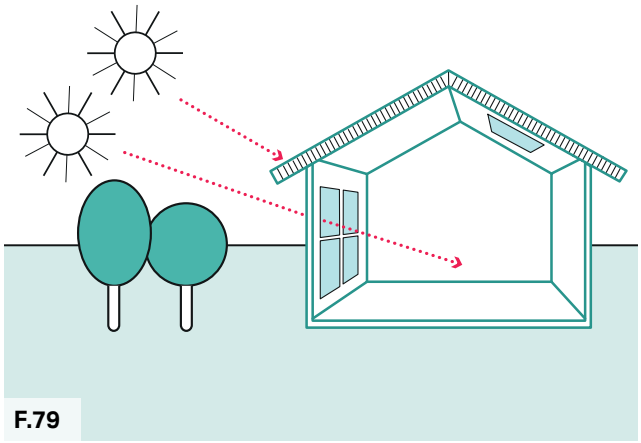


Figure 79: The use of roof window, pitch roof, location and size of windows in favour of maximising solar gain.

Figure 80: Local example of rooflights on the roof tops of some properties to maximise solar gain, Great Denham.

Figure 81: Green roofs provide sound insulation, improve aesthetics and air quality, regulate temperature and enhance biodiversity.

DC.04 Sustainability and energy efficiency

Learning from earlier phases: Greater emphasis on sustainable buildings.

Code.15 Minimising construction waste

As part of the environmental management system it is important that the waste generated during construction is minimised, reused within the site or recycled.

Developers should plan to re-use materials by detailing their intentions for waste minimisation and re-use in Site Waste Management Plans. The actions that this plan will include are:

- Before work commences, the waste volumes to be generated and the recycling and disposal of the materials will be described;
- On completion of the construction works, volumes of recycled content purchased, recycled and landfilled materials must be collated;
- Identify materials used in high volumes; and
- The workforce should be properly trained and competent to make sure storage and installation practices of the materials is done under high standards.

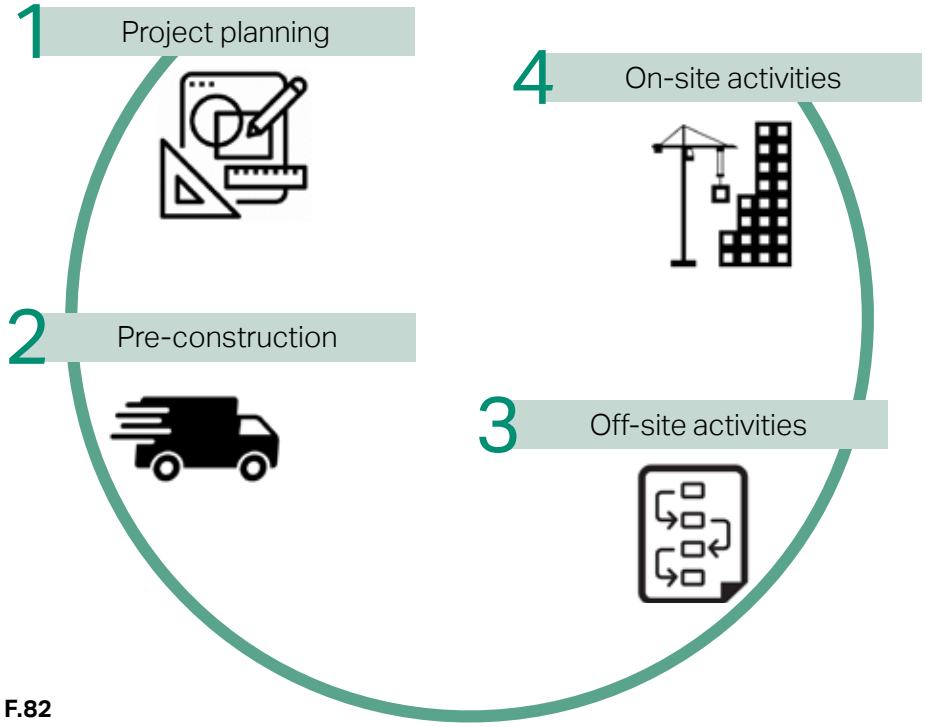


Figure 82: Diagram to illustrate the 4 main stages where waste management practices can be implemented.

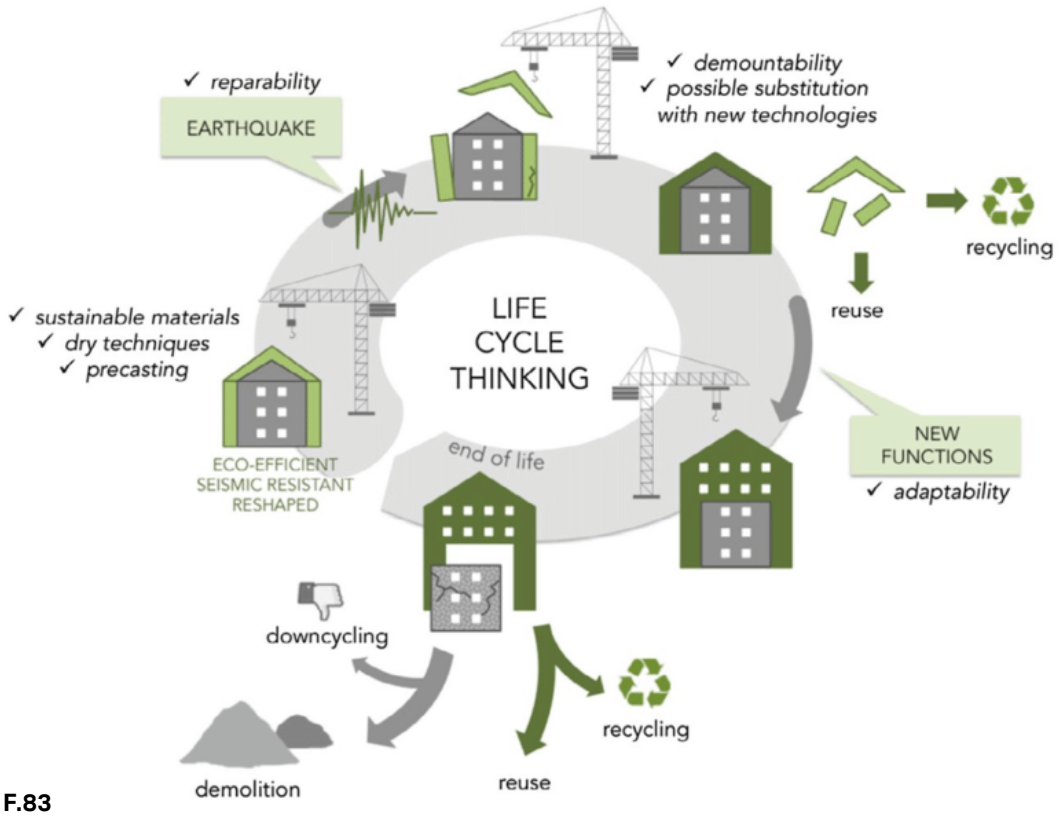
DC.04 Sustainability and energy efficiency

Learning from earlier phases: Greater emphasis on sustainable buildings.

Code.16 Recycling materials and buildings

To meet the government's target of being carbon neutral by 2050, it is important to recycle and reuse materials and buildings. Some actions for new development are:

- Reusing buildings, parts of buildings or elements of buildings such as bricks, tiles, slates or large timbers all help achieve a more sustainable approach to design and construction;
- Recycling and reuse of materials can help to minimise the extraction of raw materials and the use of energy in the production and transportation of materials; and
- Development should also maximise the re-use of existing buildings (which often supports social, environmental and economic objectives as well.



F.83

Figure 83: Diagram to illustrate the life cycle thinking for recycling materials and buildings. (Source: https://www.researchgate.net/publication/319464500_Combining_seismic_retrofit_with_energy_refurbishment_for_the_sustainable_renovation_of_RC_buildings_a_proof_of_concept)

DC.04 Sustainability and energy efficiency

Learning from earlier phases: Redouble implementation of sustainable drainage systems.

Code.17 Water management (SuDS)

The term SuDS stands for Sustainable Urban Drainage System and it covers a range of approaches to manage surface water in a sustainable way to reduce flood risk and improve water quality.

Part of Great Denham Parish is very susceptible to flood risk, due to the river that is running along the east, west and south. Thus, this open land beyond the existing housing must not be built on.

The proposed type or design of SuDS would depend on site-specific conditions such as underlying ground conditions, infiltration rate, slope, or presence of ground contamination. A number of overarching principles can however 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;
- 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;
- Some of the most effective SuDS are vegetated, using natural processes to slow and clean the water whilst increasing the biodiversity value of the area;
- Best practice SuDS schemes link the water cycle to make the most efficient use of water resources by reusing surface water; and
- SuDS must be designed sensitively to augment the landscape and provide biodiversity and amenity benefits.

DC.04 Sustainability and energy efficiency

Figure 84: Examples of SuDS designed as a public amenity and fully integrated into the design of the public realm in Stockholm, Sweden.

Figure 85: Example of small scale pond.

Figure 86: Example of swales check dam integrated with a crossing point.

Figure 87: Local example of SuDS in Great Denham to mitigate flooding as well as improve the natural environment.

DC.04 Sustainability and energy efficiency

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-site of grey water. Simple storage solutions, such as water butts, can help provide significant attenuation.

However, another solution that could be integrated into new design is underground tanks which work with a pump and pipe system to transport water in the storage tank to application areas, like toilets or washing.

In addition, the solution of a gravity fed rainwater system allows ground floor toilet cisterns to fill and flush using rainwater. This system can also be used to irrigate garden spaces, assuming the garden level is below the base of the tank. This system provides a simple and inexpensive alternative to conventional underground rainwater harvesting systems with lower capital and installation costs, reduced maintenance and operational costs.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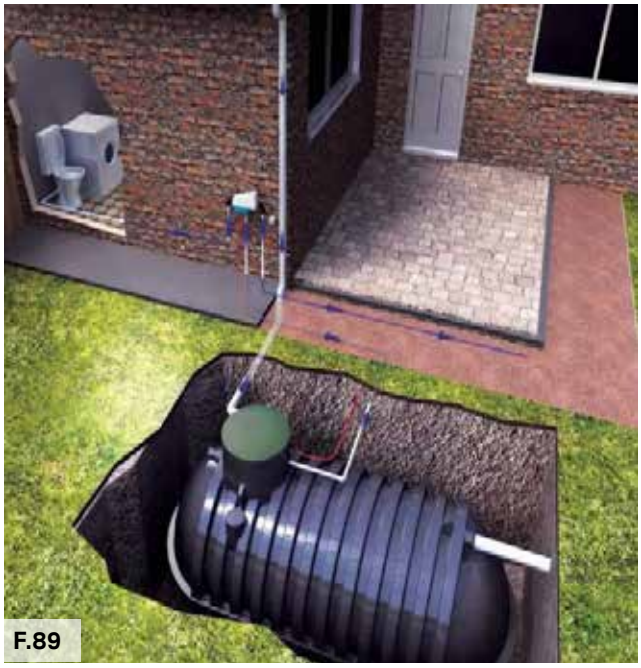

F.89


F.90

Figure 88: Example of a water butt for irrigation.

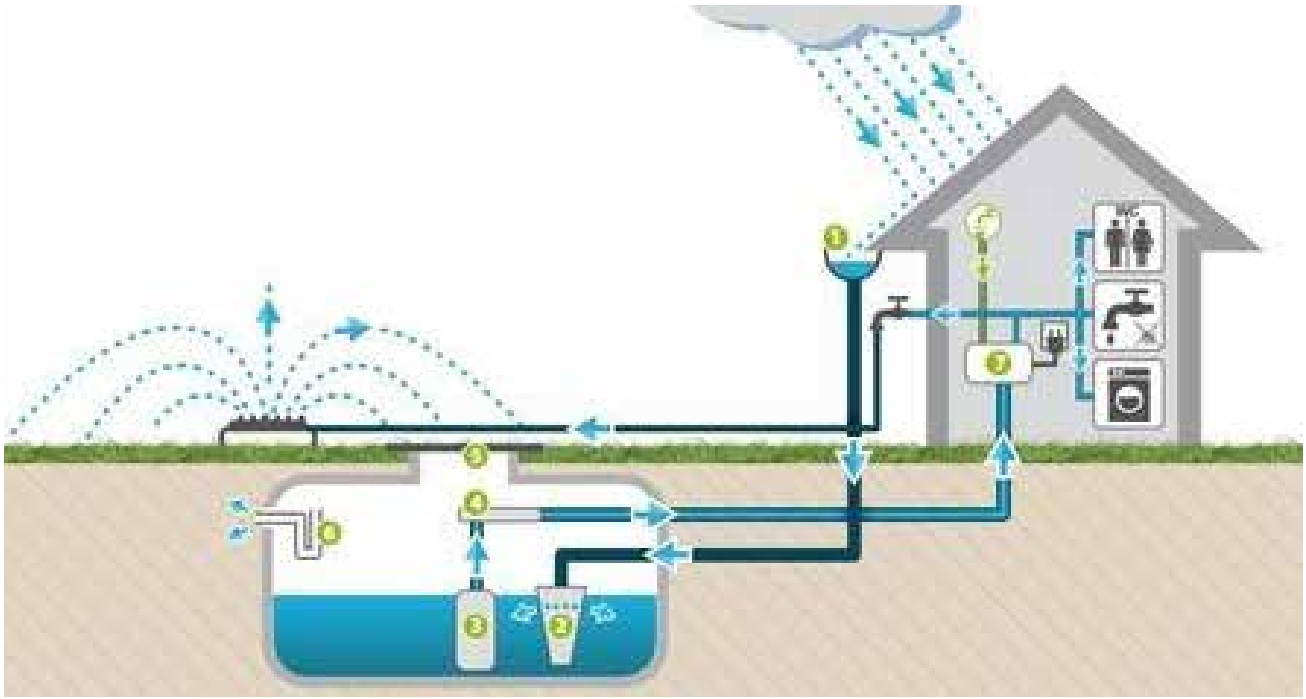
Figure 89: Example of an underground water tank in relationship with the building (Source: https://handymantips.org/about-underground-water-tanks/).

Figure 90: Example of a gravity fed rainwater system for flushing a downstairs toilet or for irrigation.

DC.04 Sustainability and energy efficiency

Some design guidelines to well integrate water storage systems are:

- Consider any solution prior to design to appropriately integrate them into the vision;
- Conceal tanks by cladding them in complementary materials;
- Use attractive materials or finishing for pipes; and
- Combine landscape/planters with water capture systems.



F.91

Figure 91: Sketch and diagram illustrating rainwater harvesting systems integrated into open spaces and residential properties.

DC.04 Sustainability and energy efficiency

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 paving offers 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, car parking spaces (including on-street parking) and private areas within the individual development boundaries.

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

- Sustainable Drainage Systems - non-statutory technical standards for sustainable drainage systems;1
- The SuDS Manual (C753); 2 and
- Guidance on the Permeable Surfacing of Front Gardens; 3.

F.92

Figure 92: Examples of permeable paving, in different patterns and colours, that can be used in the driveways.

[1] 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

[2] CIRIA (2015). The SuDS Manual (C753).

[3] 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

4.4 Checklist

As the design guidance and codes in this document cannot cover all design eventualities, this chapter provides a number of questions based on established good practice against which the design proposal should be evaluated. The aim is to assess all proposals by objectively answering the questions below. Not all the questions will apply to every development. The relevant ones, however, should provide an assessment as to whether the design proposal has considered the context and provided an adequate design solution.

As a first step there are a number of ideas or principles that should be present in all proposals. These are listed under 'General design guidance for new development'. Following these ideas and principles, questions are listed for more specific topics on the following pages.

1

General design guidelines for new development:

- New development will integrate with existing paths, streets, circulation networks and patterns of activity;
- Reinforce or enhance the established settlement character of streets, greens, and other spaces;
- Harmonise with and enhance the existing settlement in terms of physical form, architecture and land use;
- Relate well to local topography and landscape features, including prominent vegetation and long-distance views;
- Reflect, respect, and reinforce local architecture and historic distinctiveness;
- 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;
- 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;
- Make sufficient provision for sustainable waste management (including facilities for kerbside collection, waste separation, and minimisation where appropriate) without adverse impact on the street scene, the local landscape or the amenities of neighbours;
- Positively integrate energy efficient technologies;
- Ensure that places are designed with management, maintenance and the upkeep of utilities in mind; and
- Seek to implement passive environmental design principles by, firstly, considering how the site layout can optimise beneficial solar gain and reduce energy demands (e.g. insulation), before specification of energy efficient building services and finally incorporate renewable energy sources.

2

Local green spaces, views & 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?
- Can trees be used to provide natural shading from unwanted solar gain? i.e. deciduous trees can limit solar gains in summer, while maximising them in winter.
- 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 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?
- Is there opportunity to increase the local area biodiversity?
- Can green space be used for natural flood prevention e.g. permeable landscaping, swales etc.?
- Can water bodies be used to provide evaporative cooling?
- Is there space to consider a ground source heat pump array, either horizontal ground loop or borehole (if excavation is required)?

3

Street grid and layout:

- Does it favour accessibility and connectivity? 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?

4

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?

5

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?
- Subject to topography and the clustering of existing buildings, are new buildings oriented to incorporate passive solar design principles, with, for example, one of the main glazed elevations within 30° due south, whilst also minimising overheating risk?
- Can buildings with complementary energy profiles be clustered together such that a communal low carbon energy source could be used to supply multiple buildings that might require energy at different times of day or night? This is to reduce peak loads. And/or can waste heat from one building be extracted to provide cooling to that building as well as heat to another building?

6

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?

7

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?
- Will the roof structure be capable of supporting a photovoltaic or solar thermal array either now, or in the future?
- Will the inclusion of roof mounted renewable technologies be an issue from a visual or planning perspective? If so, can they be screened from view, being careful not to cause over shading?

8

Household extensions:

- Does the proposed design respect the character of the area and the immediate neighbourhood?
- What is the impact of the proposed changes/extension on the surrounding environment, including green space and parking/pedestrian access?
- Is the roof form of the extension appropriate to the original dwelling?
- 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?
- Does the extension offer the opportunity to retrofit energy efficiency measures to the existing building?
- Can any materials be re-used in situ to reduce waste and embodied carbon?
- What is the impact of the proposed changes/extension on the surrounding environment, including green space and parking/pedestrian access?

9

Building materials & surface treatment:

- What is the distinctive material in the area?
- 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?
- Are recycled materials, or those with high recycled content proposed?
- Has the embodied carbon of the materials been considered and are there options which can reduce the embodied carbon of the design? For example, wood structures and concrete alternatives.
- Can the proposed materials be locally and/or responsibly sourced? E.g. FSC timber, or certified under BES 6001, ISO 14001 Environmental Management Systems?

10

Car parking:

- 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?
- Can electric vehicle charging points be provided?
- Can secure cycle storage be provided at an individual building level or through a central/ communal facility where appropriate?
- If covered car ports or cycle storage is included, can it incorporate roof mounted photovoltaic panels or a biodiverse roof in its design?
- Has adequate off road parking been provided for each dwelling?
- Does the proposed parking arrangement provide sufficient security and deter anti-social behaviour/crime?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05
Delivering a better world

5. Delivery

The Design Guidelines & Codes will be a valuable tool in securing context-driven, high quality development in Great Denham. 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, & 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.

About AECOM

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