

AECOM

PADDOCK WOOD

Design Guidance

Final Report

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Quality information

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Introduction

01



1. Introduction

Through the Department for Levelling Up, Housing and Communities (DLUHC) Neighbourhood Planning Programme led by Locality, AECOM was commissioned to provide design support to the Paddock Wood Town Council.

1.1 The importance of good design

As the NPPF (paragraph 126) 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 Design¹) has shown that good design of buildings and places can:

- Improve health and well-being;
- 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

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

as the best of what has gone before. Following an analysis of the town and good practice, those elements of good design which have been successful in edge of town locations are set out clearly as Design principles which any development in such locations in Paddock Wood should follow in order to comply with this Design guidance.

1.2 The purpose of this document

The National Planning Policy Framework (NPPF 2019, 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 guidance. 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 guidance in order to set standards for design upfront and provide firm guidance on how sites should be developed.

Paddock Wood is undergoing a period of expansion mainly to the north, east and west of the existing settlement, where the Submission Local Plan has identified site allocations with a provision of approximately 4,000 new dwellings. Thus, it is crucial to both existing and future residents of Paddock Wood that any new development is planned and designed in a way that respects the character of the existing settlements and caters for their needs and aspirations.

This Design guidance report provides an additional and more detailed framework for creating a distinctive place with a consistent and high quality standard of design.

It is intended that the Design guidance become an integral part of the Neighbourhood Plan and be given weight in the planning process. It is understood that Tunbridge Wells Borough Council will develop more detailed for guidance development parcels using this guidance as the starting point.



1.3 Preparing the design guidance

Following an inception meeting and a virtual and an in-person site visit with members of the Neighbourhood Plan Steering Group, AECOM carried out a high-level assessment of the town.

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

1
—

Initial meeting between AECOM and the Paddock Wood Neighbourhood Planning Group. As this was during the national Covid-19 lockdown, the first site visit was virtual and carried out via Teams and Google Streetview. After, an in-person site visit was held as well;

2
—

Review of existing baseline documents;

3
—

Urban design and local character analysis;

4
—

Preparation of the design guidance to inform the design of Paddock Wood area and future developments;

5
—

Draft report with the design guidance; and

6
—

Submission of the final report.

1.4 Policy 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 one is taken into account in the design proposals.

National design guidance:

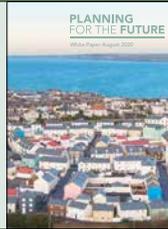
2021



National Model Design Code Ministry of Housing, Communities & Local Government

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.

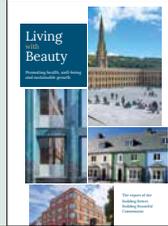
2020



Planning for the future Ministry of Housing, Communities & Local Government

This report introduces reforms in the planning system; it brings a new focus to design and sustainability and improves the system of developer contributions to infrastructure.

2020



Living with beauty Ministry of Housing, Communities & Local Government

This independent report introduces guidelines on how to promote and increase the use of high-quality design for new build homes and neighbourhoods.

2020



Building for a Healthy life

The BHL toolkit sets out 12 questions to help guide discussions on planning applications and it can also provide useful prompts and questions for planning applicants to consider.

National design guidance:

2019



National Design Guide Ministry of Housing, Communities and Local Government

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

2019



Putting health into place NHS England's Healthy New Towns programme

This guide introduces 10 principles that will benefit places and will create healthy communities. This guideline should be used as reference and inspiration in order to tackle health-related issues in the village and help new development better evaluate local needs.

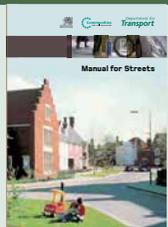
2019



Achieving well-designed places through neighbourhood planning, Locality

This report is a toolkit that has been prepared to support groups involved in neighbourhood planning to locally define and promote good design. It presents 7 principles of 'good design'. Those should be used as reference and inspiration for the design of open spaces, facilities, buildings, the management and maintenance.

2007



Manual for streets - Department for Transport

This manual collects standards and best practices on street design. This guideline should be read in conjunction with any masterplanning development to achieve the best possible result.

2019



Tunbridge Wells Submission Local Plan - Tunbridge Wells Borough Council

The Local Plan is a long-term strategic planning document, which sets out the spatial vision, strategic objectives and the overarching development strategy for an area, including Paddock Wood, and establishes the planning policy framework to deliver them.

2019



Tunbridge Wells, Strategic sites masterplanning & Infrastructure study - Tunbridge Wells Borough Council

This report explains the work undertaken to deliver the studies, including consultation, and sets out the key findings and recommendations. The purpose of the commission is to gather evidence on whether specified scales of development at the locations identified in the DLP are deliverable from a masterplanning, infrastructure and viability perspective. The report forms part of TWBC's evidence base for the Local Plan.

2019



Strategic Flood Risk Assessment (SFRA) - Tunbridge Wells Borough Council

This report provides up to date information and guidance on flood risk for Tunbridge Wells Borough, considering the latest flood risk information and the current state of national planning policy. It also determines the variations in risk from all sources of flooding and identifies the requirement for site-specific flood risk assessments.

2018



Open Space, Sport and Recreation Study- Tunbridge Wells Borough Council

This study examines existing and projected needs for open space, sport and recreation provision, using a variety of data sources, together with independent investigation, stakeholder and community consultation and surveys.

2000



Kent Design Guide - Kent Design Initiative

This report sets out a series of objectives and quality initiatives in respect of architectural quality with a focus on the delivery of great buildings and memorable and attractive places that reinforce Kent's distinctive character. Development proposals should take those guidelines into consideration when designing for streets, buildings, open spaces, landscape, parking, servicing and sustainability.

Town-wide study:

2015



Paddock Wood Flood Alleviation Study - Kent County Council

This study provides an understanding of flood risk mechanisms (Main River, Ordinary Water Course, surface water sewers and surface water) and produces updated model outputs and mapping. It also investigates potential solutions to flood risk and provides evidence base and advice for future planning policy

1.5 Strategic site allocations

The Local Plan proposes a significant strategic extension to Paddock Wood, including land at east Capel, to deliver approximately 3,490-3,590 new dwellings, considerable employment use, and associated education, leisure, retail, and health facilities.

-  N
KEY
-  Strategic site
 -  Public right of way

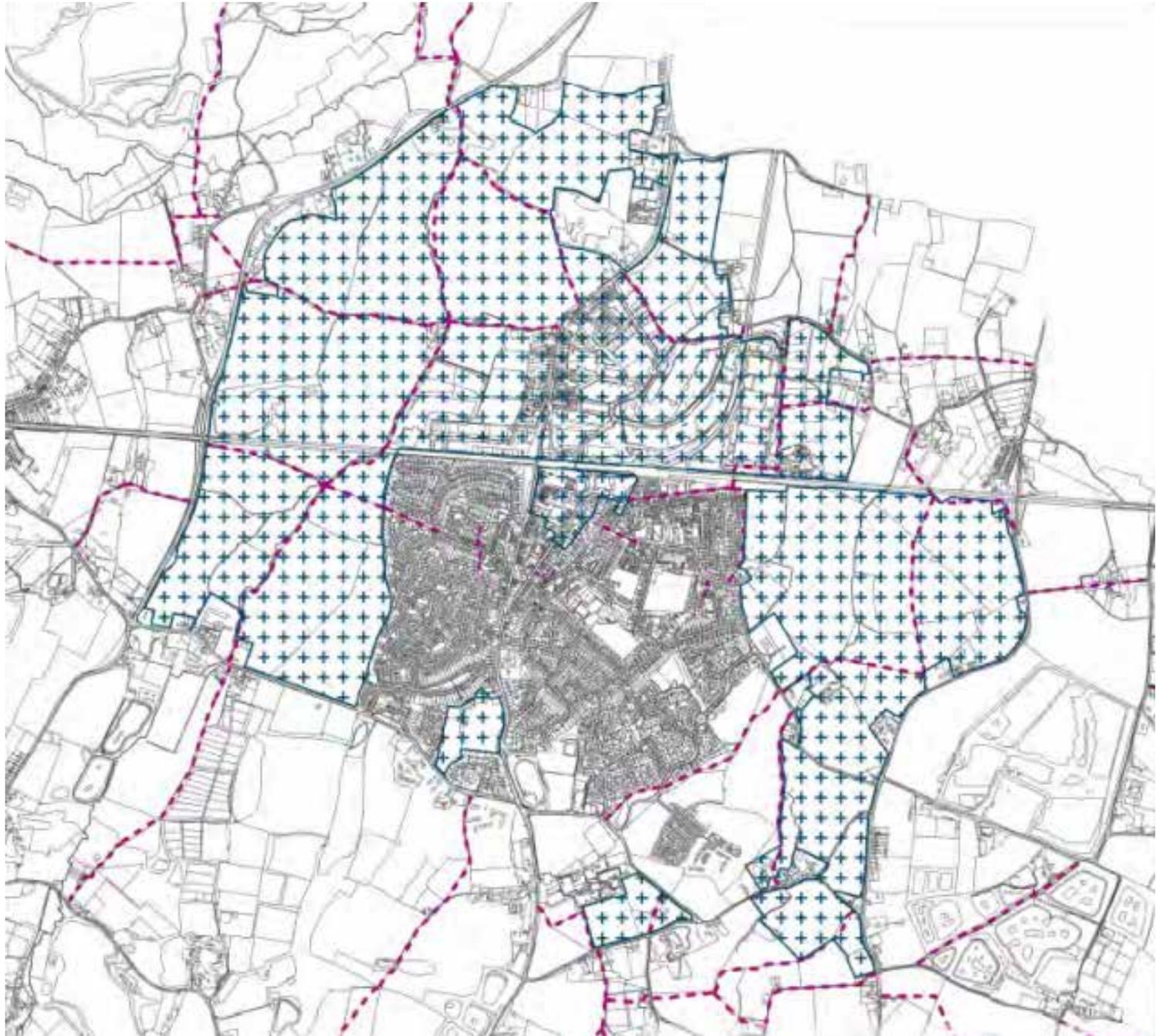


Figure 01: Submission Local Plan strategic allocations

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**Baseline
study**

02



2. Baseline study

This chapter describes the local context and key characteristics of Paddock Wood related to built environment, landscape and environmental designations, land uses, building heights and topography.

2.1 Historic growth pattern

The history of Paddock Wood begins in the 2nd half of the 19th century, when the first settlements started to develop as a result of the thriving local hop industry.

In particular, the railway opened in 1842 which instantly triggered development with a great number of railwaymen and their families coming to live in the area. However, there were not many services in the area and the population had to depend on neighbouring settlements like Brenchley for church and schooling.

Later, as growth came, more facilities were developed in the area. In the 1950s Paddock Wood became a parish of its own right; until then it was part of Brenchley parish. By 1900, the area was a local transport hub with three railway lines at the railway station.

Figures 3-6 show the evolution of the built form from the late 19th century to the present. The pattern of this development has been greatly influenced by physical constraints, including flood plains and landscape.

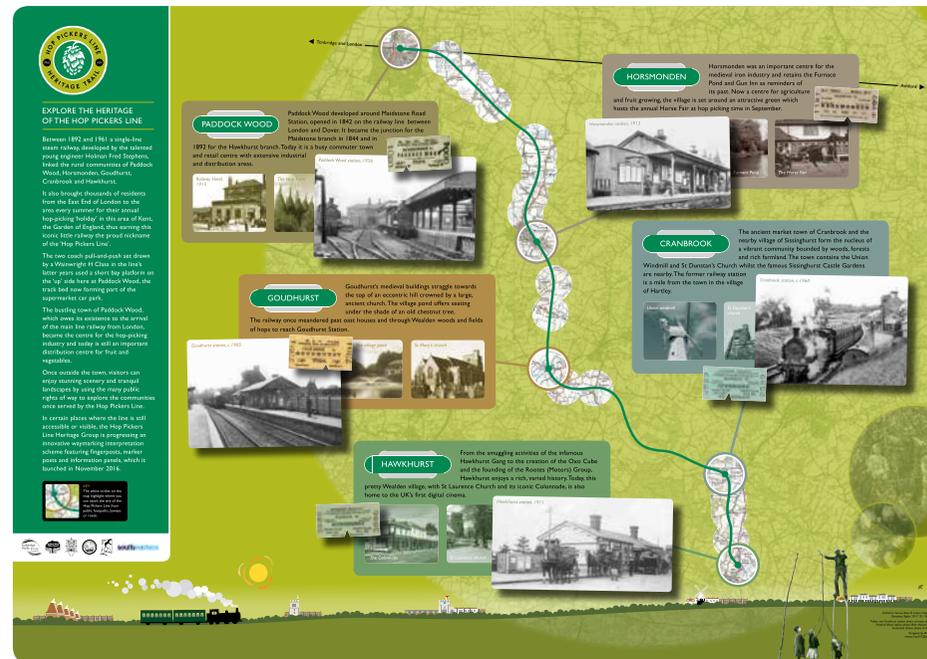


Figure 2: Diagram illustrating the heritage of Hop Pickers Line (Source: <https://paddockwood-tc.gov.uk/wp-content/uploads/2020/05/Hop-Pickers-Line-A4-Poster-Final-July-2017.pdf>).

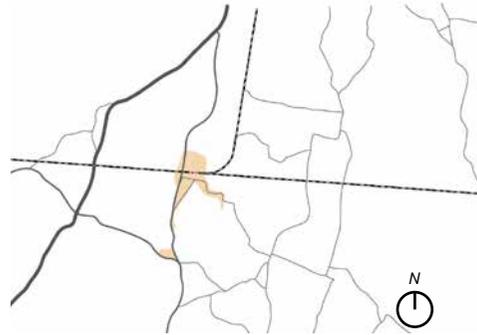


Figure 3: 1872 map of Paddock Wood.

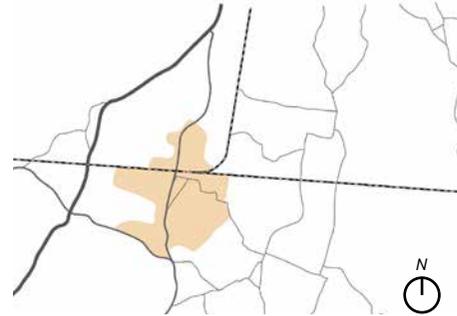


Figure 4: 1969 map of Paddock Wood.

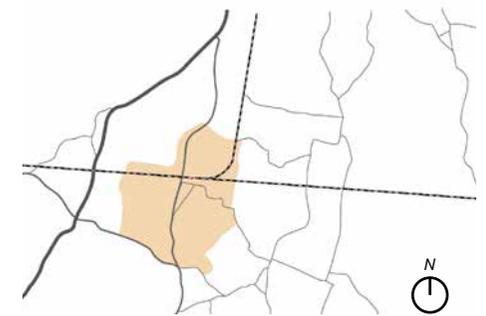


Figure 5: 1990 map of Paddock Wood.

KEY

-  Paddock Wood Neighbourhood plan area
-  Settlement
-  Building footprints
-  Open space
-  Railway line & station
-  A-road
-  B-road
-  Secondary road
-  Local road
-  Footpath
-  Bridleway
-  Water body

0m 500m 1.5km 2.5km

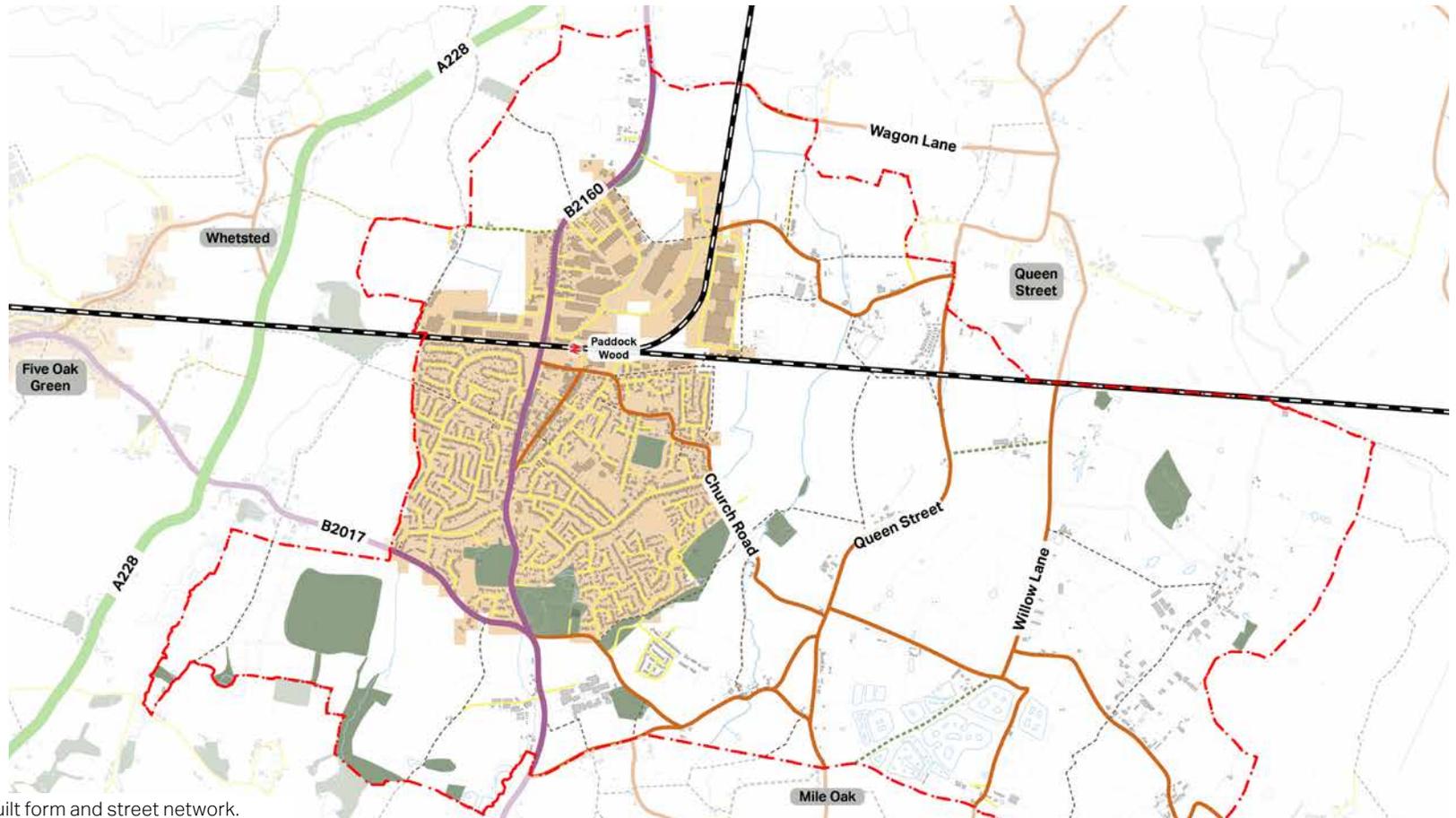


Figure 6: Paddock Wood's current built form and street network.

2.2 Town Structure, access and movement

The Paddock Wood town centre is located towards the northern part of the town, along the Paddock Wood Railway Station, to the south of the railway. The town centre is enveloped by residential neighbourhoods to its south, east and west, whereas the main employment areas are located to the north of the railway line.

Maidstone Road (B2160), which cuts through the town in the north-south direction to the west of the town centre, is one of the main routes that connects the town to the surrounding strategic road network, and town and villages. Badsell Road (B2017) also serves the town in the south as a main route providing an important connection to A228 to the west.

The railway station is located within a maximum of 15-18 minutes walking distance from the residential neighbourhoods. It provides a great accessibility to the town with immediate connections to the surrounding towns and cities, including London, with direct connections.

The connectivity within the residential neighbourhoods are limited due to cul-de-sacs. The areas to the west of Maidstone Road provide relatively better pedestrian and cycle connectivity owing to the narrow footpaths in between houses.

The town benefits from a good network of Public Rights of Way connecting the settlement to the surrounding countryside and open spaces.



Figure 7: Maidstone Road cuts through the town in the north-south direction and provides connections to the surrounding road networks and villages.



Figure 8: Entrance to the town centre from the north, Commercial Road.

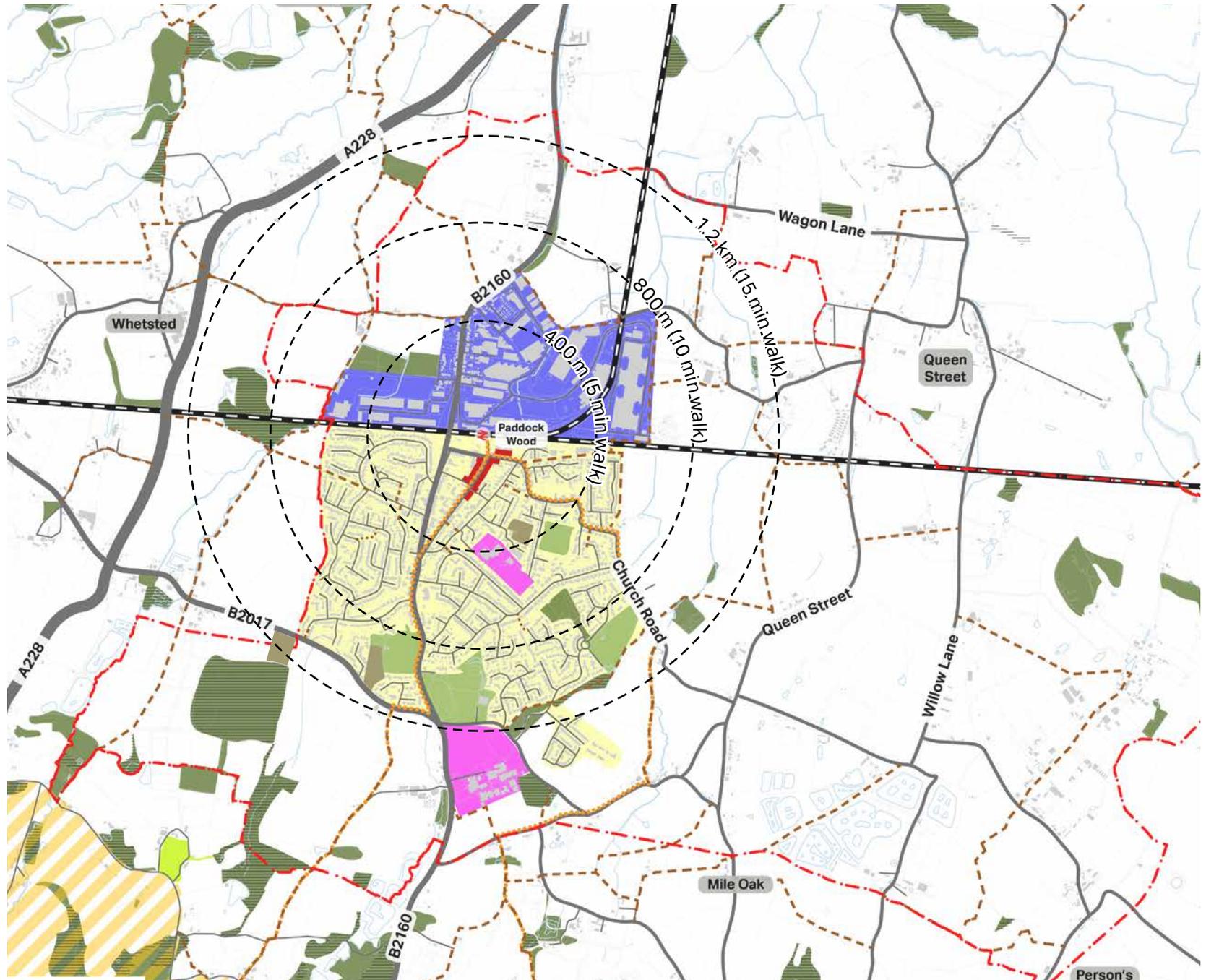
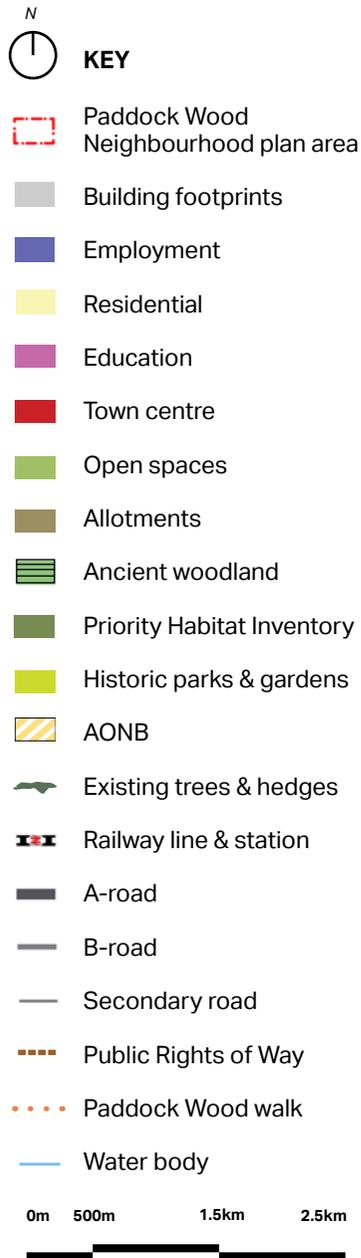


Figure 9: Movement and connectivity in Paddock Wood.

2.3 Landscape and heritage

There are a number of land-based designations in Paddock Wood that need to be taken into account in future development. Those designations are:

- **Green Belt & AONB:** The AONB designation borders the Town to the south west, while the Green belt to the west. Both designations account for high-quality landscapes with natural beauty and distinctive character.
- **Flood risk zones:** A large part of the Town, mainly to the north and west, is susceptible to flooding due to the many streams running along the area.
- **Heritage:** There is no designated conservation area with the Town, however, there are a number of listed buildings to the south of Maidstone Road as well as to the east of the area. There are also a number of medieval earthworks to the north of the town.
- **Green space:** There is a good number of green spaces within the Town, most of them designated as ancient woodlands, priority habitat inventory, local nature reserves and some old farmstead features creating a wildlife network.
- **Public Rights of Way:** There is a good network of Public Rights of Way connecting the settlement to the surrounding countryside and open spaces.

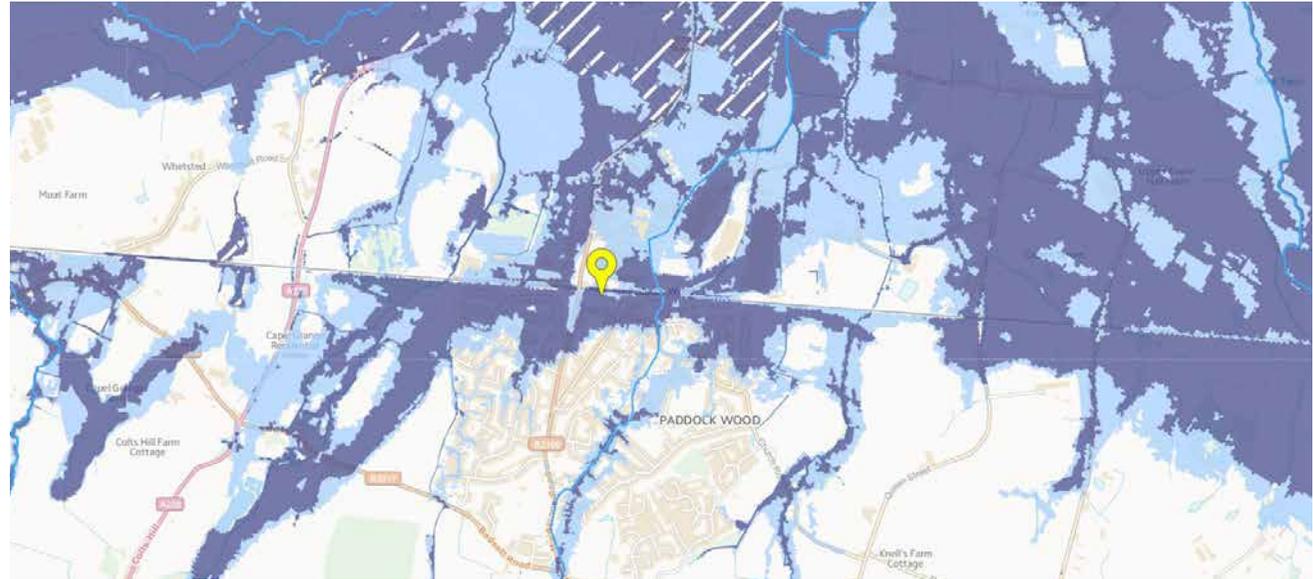


Figure 10: Flood risk zones within Paddock Wood (Source: <https://flood-map-for-planning.service.gov.uk>)



Figure 11: There are extensive flood risk zones within Paddock Wood, due to the many streams running along the area, and therefore, flood mitigation schemes are needed.



Figure 12: There is a good number of existing footpaths within the town offering connections to the town centre and some parts of the residential areas.

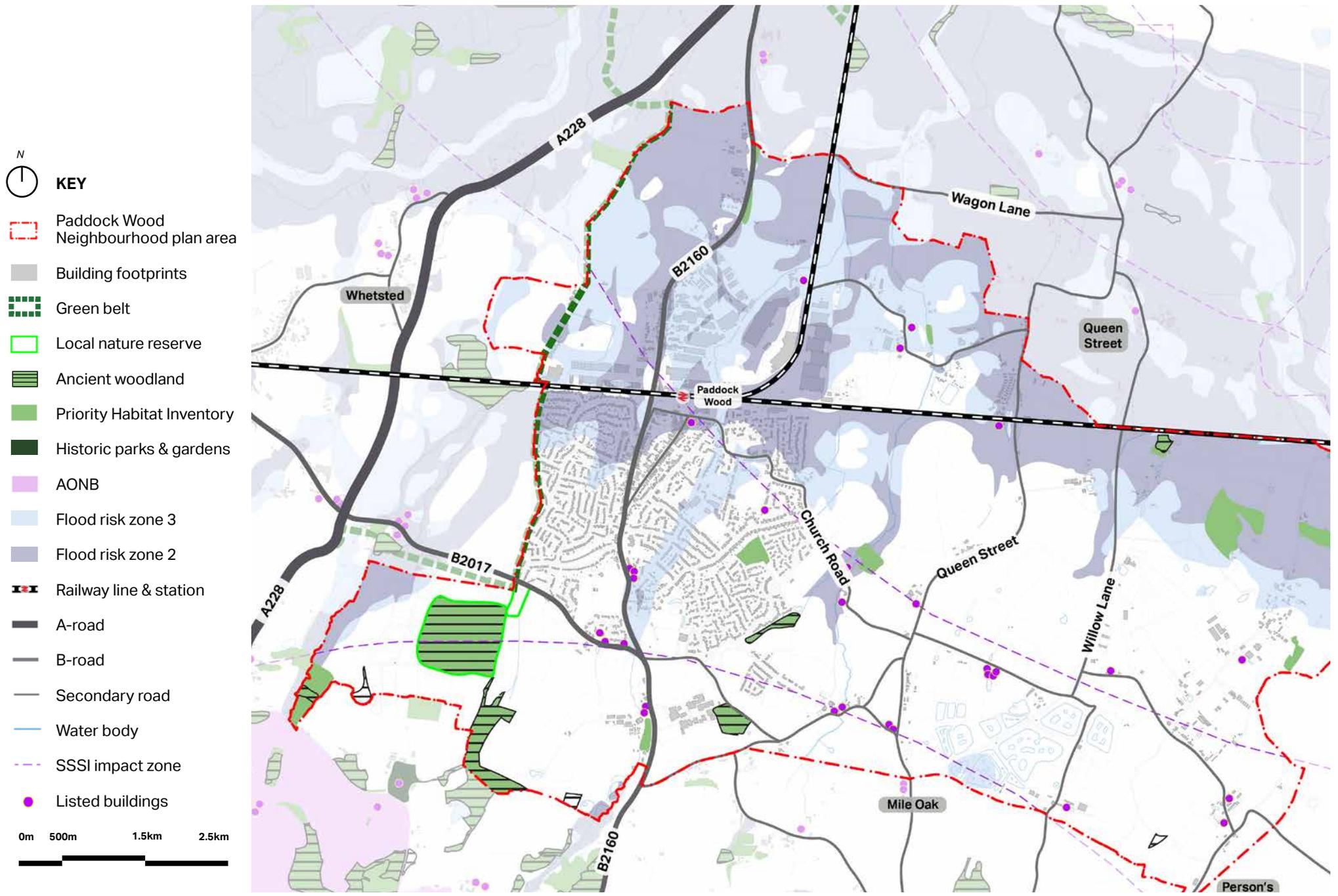


Figure 13: Landscape and heritage designations for Paddock Wood.

2.4 Green space, public realm and streetscape

Within the town the majority of open spaces, sports and recreation facilities are found to the south and east of the settlement, including the Memorial playing field, the Sports and Leisure Centre, St Andrew's field, Putlands field, St Andrews churchyard and the playgrounds along Green Lane and St Andrews Road. These open spaces, although not many in number, provide a soft landscaped character within the town and offer formal and informal recreation space.

The public realm within the residential neighbourhoods is, in general, in good condition with well-dimensioned pavements. Majority of the houses have large front gardens mostly with lawns or car parking spaces. There are green courtyards and sizeable verges within some areas. There is a notable absence of trees in the streetscape of residential areas in spite of large front gardens, courtyards and verges.

The town centre is hardscaped with limited pedestrian pavements in some areas and cluttered with bollards and signs. The townscape in this area is dominated by the carriageway, and road signs and markings indicate dominance of vehicular movement.



Figure 14: Playground facility within large open green space attracts families and young people offering opportunities for play, gathering and socialising.



Figure 15: The town centre is hardscaped with limited vegetation giving the impression of a car dominated environment.



Figure 16: Open spaces within the urban fabric of the town offer opportunities for seating and socialising whilst also improving the aesthetics.

2.5 Building typology

The residential neighbourhoods comprise a variety of building typologies, the majority of which are semi-detached and detached housing. Those typologies are mostly found to the west and southeast of Maidstone Road as well as along some rural roads to the east of the Town.

The rest of the settlement consists of a good typology mix of terraced housing, bungalows, town houses and apartments.

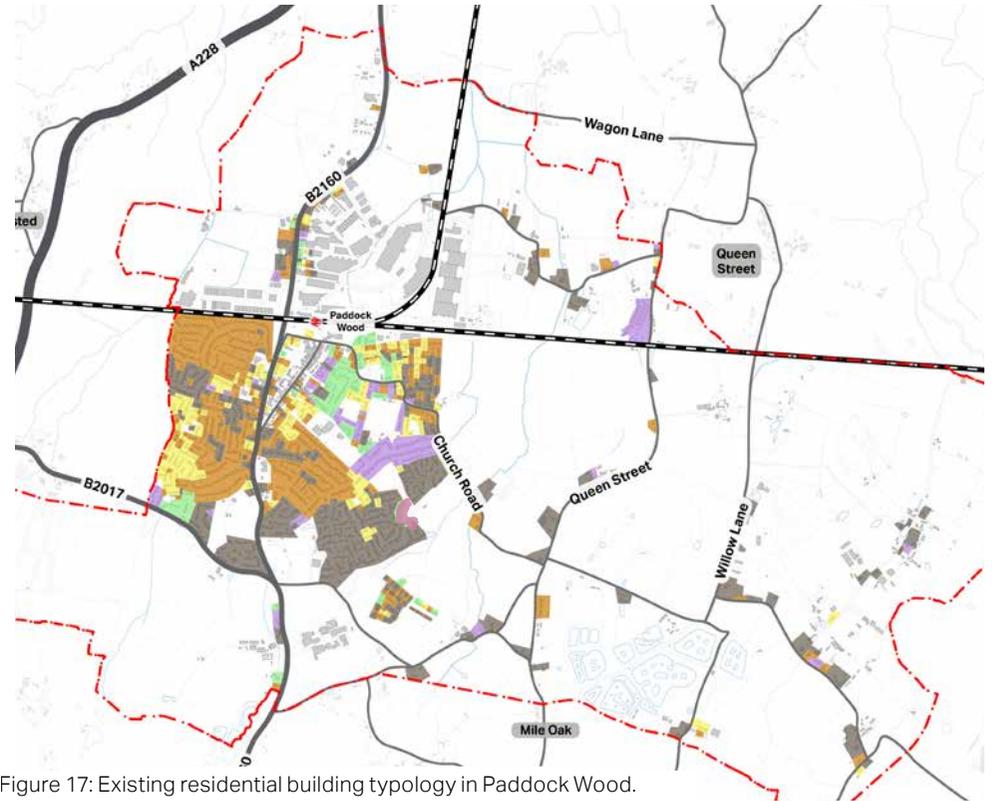


Figure 17: Existing residential building typology in Paddock Wood.



Figure 18: Local example of terraced housing, Commercial Road.



Figure 19: Local example of a detached cottage, Commercial Road.



Figure 20: Local example of town houses, Green Lane.

2.6 Building heights

Most buildings in Paddock Wood range from 6-10m in height, with certain residential areas having a lower height below 5m, mainly to the east and north of the Town.

In addition, the industrial buildings to the north, as well as some educational and residential buildings to the south, have a higher average of building heights that ranges from 11-20m.

Overall, the scale and massing of buildings in Paddock Wood respects the open countryside that surrounds the area. Taller buildings are mainly contained within the industrial area.

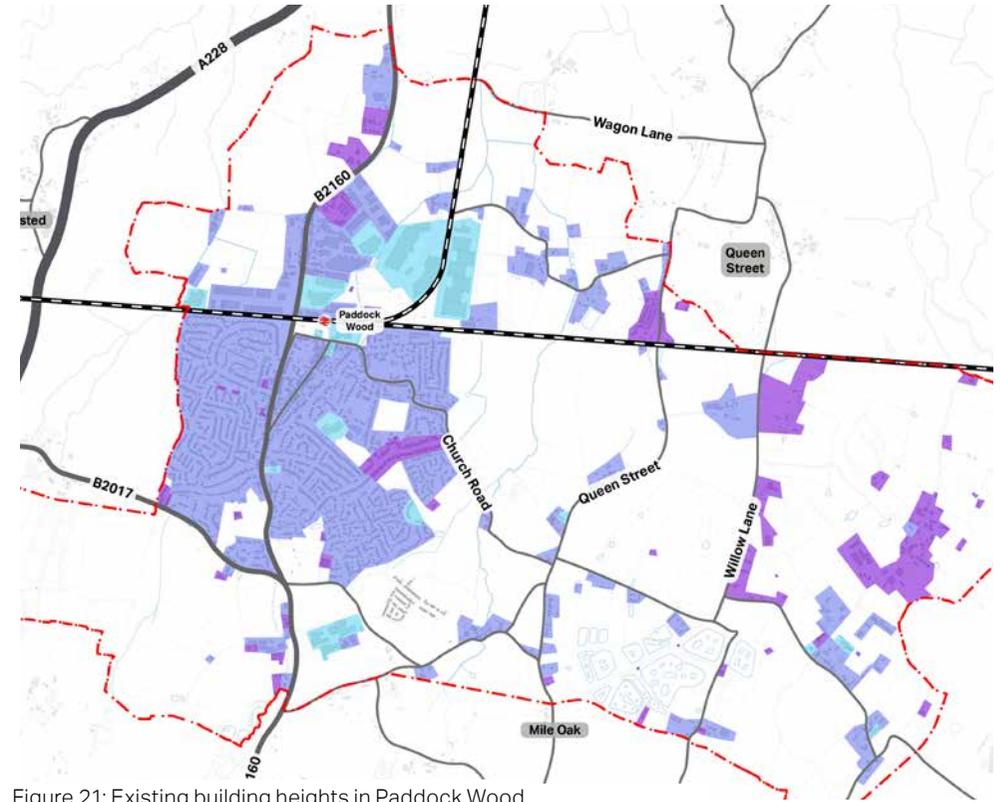
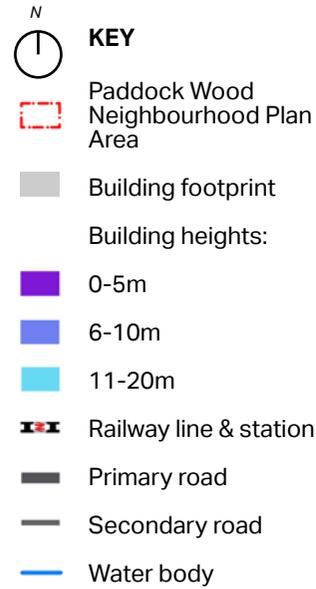


Figure 21: Existing building heights in Paddock Wood.



Figure 22: The average building height along Maidstone Road is 2 storeys.



Figure 23: The average building height within the residential areas to the east and west of the main road, Maidstone Road, is 2 storeys.



Figure 24: The relationship between the scale of the buildings and the vegetation along the road gives the impression of a countryside feeling, Green Lane.

2.7 Building density

The average densities of the residential areas in Paddock Wood were calculated through calculation of the average number dwellings per hectare (dph).

The most prominent average density found in the residential areas is around 21-30dph. This can be described as medium density.

In addition, examples of lower densities can be found along the rural streets to the east of the Town, as well as within the main settlement. Higher densities are found to the north, in the industrial area, southeast, north of Church Road and to the western edge of the settlement.

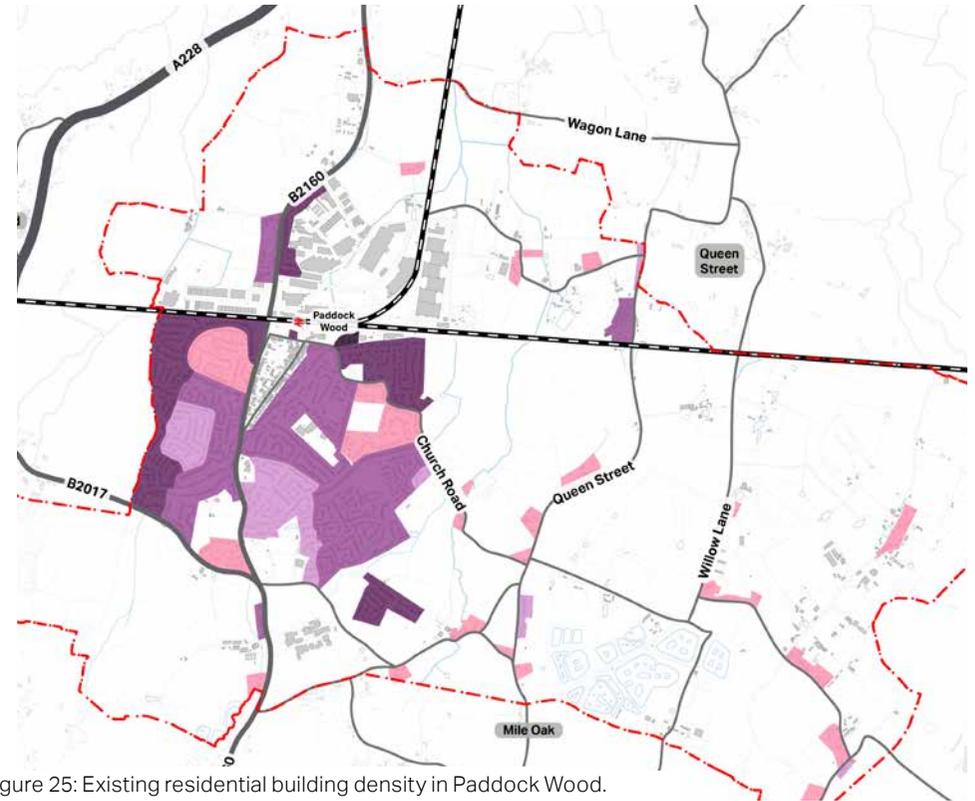


Figure 25: Existing residential building density in Paddock Wood.



Figure 26: Density example (5-10dph). Site on Badsell Road.



Figure 27: Density example (21-30dph). Area south of Clover Way.



Figure 28: Density example (31-40dph). Area north of Church Road.

**Design
guidance**

03



3. Design guidance

The key thing that all development in Paddock Wood should respond to is context. The design guidance and codes in this document do not specify a particular architectural style - either traditional or contemporary styles may be appropriate in the right context.

3.1 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 placemaking and draw on the principles set out in many national urban design best practice documents including Building for a Healthy Life, the National Design Guide and National Model Design Code, 2021.

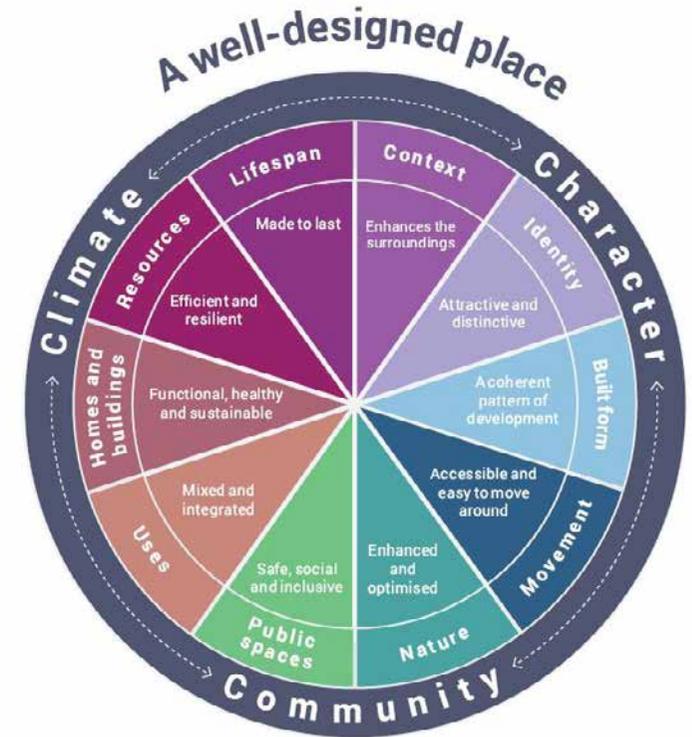


Figure 29: The 10 characteristics of well-designed places. (Source: National Design Guide, page 8).

3.2 Walkable places

Creating new walking routes which are well connected to existing ones is a prerequisite for any new development. Walking routes should usually be laid out in a way where they follow the shortest and straightest distance between two points. Pedestrian footpaths should be at least 2 metres wide and be well lit to encourage use at all times.

The success of a place is influenced by how walkable it is. It is good practice to plan new homes within a 400 metres walking distance (= 5 minutes) of bus stops and within 800 metres (= 10 minutes) of convenience store or community building.

In addition to this, street lighting plays a significant role in creating walkable routes where people feel safer to walk or cycle. For more design guidelines on how to implement street lighting within residential areas in order to avoid light pollution or disturbance, please see Code 20.



Figure 30: Some local examples of footpaths within Paddock Wood area. Vegetation is present, however in different scale, in all the cases.

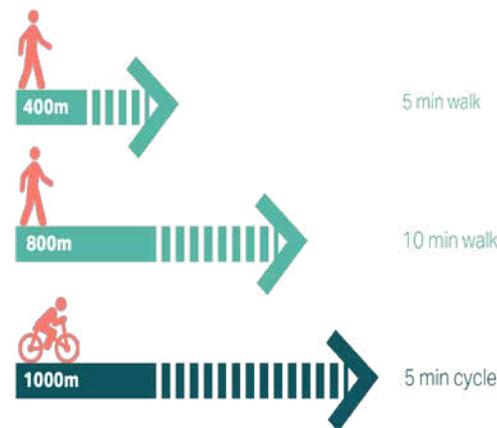


Figure 31: Diagram to illustrate some principles for walkable places.



Figure 32: Open space located in the corner of Maidstone Road and Commercial Road offers a pleasant shortcut through a pedestrian path.

3.3 General principles

A brief reference to general design principles will be mentioned before the main part of the design codes and guidance with reference to Paddock Wood Neighbourhood Plan Area.

The guidance developed in the document focus on residential environments, including new housing development.

Considerations of design and layout must be informed by the wider context, considering not only the immediate neighbouring buildings, but also the townscape and landscape of the wider locality. The local pattern of streets and spaces, building traditions, materials and natural environment should all help to determine the character and identity of a development.

It is important with any proposal that full account is taken of the local context and that the new design embodies the 'sense of place' and also meets the aspirations of people already living in that area.

As a first step, there are a number of design principles that should be present in any proposal. In particular, new development should:

- Respect the existing settlement pattern in order to preserve the character.
- Integrate with existing paths, streets, circulation networks.
- Reinforce or enhance the established character of streets, greens and other spaces.
- Harmonise and enhance existing settlement in terms of physical form, architecture and land use.
- Retain and incorporate important existing features into the development.
- Respect surrounding buildings in terms of scale, height, form and massing.
- Adopt contextually appropriate materials and details.
- 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.
- Aim for innovative design and eco-friendly buildings while respecting the architectural heritage and tradition of the area.

3.4 Paddock Wood design guidelines

This section introduces a set of design principles mainly for the future development around Paddock Wood Town. These are based on:

- Baseline analysis of the area in Chapter 2;
- Understanding national design documents such as National Design Guide and National Model Design Code Documents which informed the principles and design codes; and
- Discussion with members of the neighbourhood plan steering committee.

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

Context and land use/mix

Code 1. Set in local and wider context

Code 2. Land uses/mix

Access and movement

Code 3. Prioritise walking and cycling

Code 4. People friendly streets

Landscape, nature and open space

Code 5. Create green fingers

Code 6. Biodiversity

Code 7. Water management (SuDS)

Code 8. Trees

Code 9. Open spaces

Placemaking and identity

Code 10. Patterns of growth

Code 11. Settlement edges

Code 12. Continuity and enclosure

Code 13. Building scale and massing

Code 14. Corner treatment

Code 15. Legibility and wayfinding

Code 16. Boundary lines and boundary treatment

Public realm

Code 17. Hard landscaping, materials and street furniture

Code 18. Permeable paving

Code 19. Street lighting

Built form

Code 20. Building lines and roofline

Code 21. Fenestration

Code 22. Materials and architectural details

Sustainability

Code 23. Minimising energy use

Code 24. Lifetime and adaptability

Code 25. Minimising construction waste

Code 26. Recycling materials and buildings

Code 27. Reducing car use

Code 28. Electric vehicle charging points

Code 29. Servicing

Code 30. Cycle parking solutions

CONTEXT AND LAND USE/MIX



Code 1. Set in local and wider context



Code 2. Land uses/mix

Context and land use/mix

Code 1. Set in local and wider context

Paddock Wood area boasts high quality natural areas in close proximity to the settlement. More specifically, Green Belt and AONB designations, water elements, Public Rights of Ways, woodlands and listed buildings are some characteristics of the landscape that need to be taken into consideration in the design process. Some guidelines for future development are:

- New development should respect and retain the existing green assets of any form; trees, woodlands, hedges, hedgerows. Those elements will inform the baseline for the design process and shape the design outcome.
- Flooding is an important issue in the parish and therefore, a regional and cohesive approach is needed to create a more effective overall town drainage plan.
- New development should be well-integrated into the existing settlement pattern and avoid any kind of fragmentation. For that reason, the future development surrounding the existing

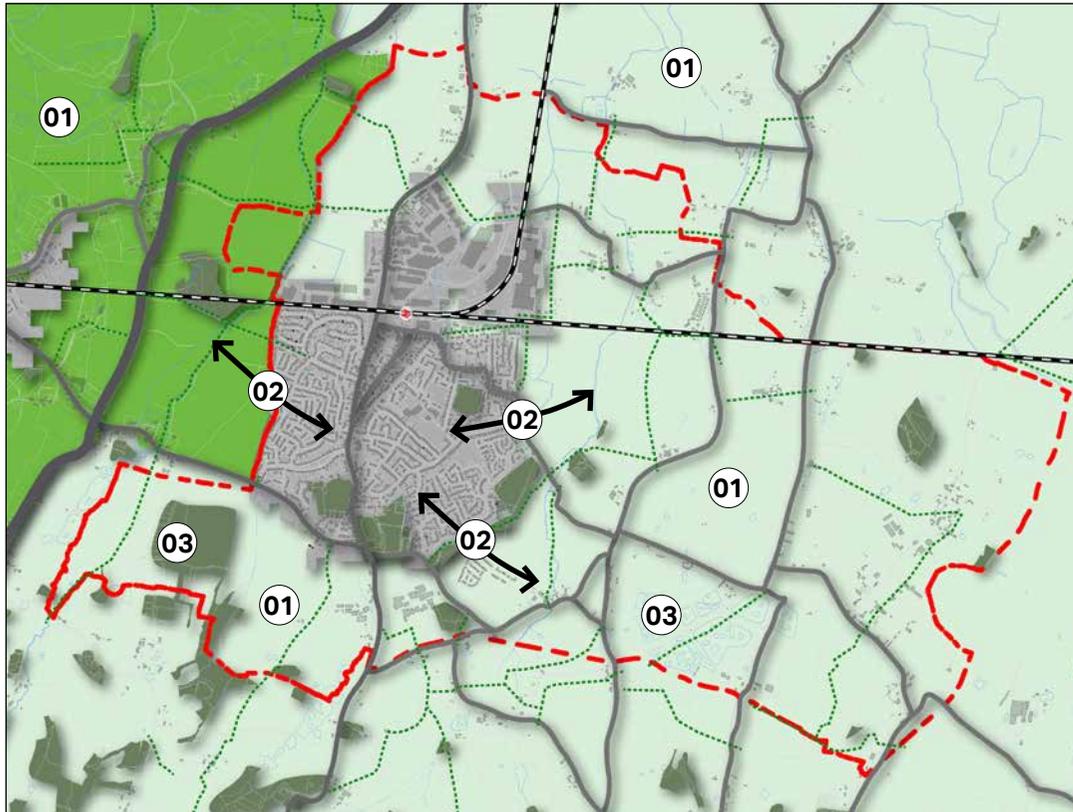
settlement should prioritise connectivity, especially through pedestrian and cycle links. This will create accessible places and a more cohesive social tissue.

- New development should prioritise creating a well-connected green system and promote alternative ways of transportation. The existing public rights of ways and the new footpaths will contribute significantly to this system.
- New development should improve the connection with the surrounding countryside by enhancing existing links or creating new ones. In edge locations, it is important to connect all streets to the network of public pathways and rights of ways.
- New development should make use of the agricultural landscape in the surroundings and promote freedom of movement within arable fields. Safe accessible paths and corridors within agricultural fields can become structuring elements that connect rural settlements to their hinterland. An appropriate signage system can help navigate people

around and make them aware of walking and cycling routes.

- New development should respect any landscape designations and propose design that reflects any constraints that might appear. In particular, the land to the west of the existing settlement, allocated for development, is constrained by flood risk zones and green belt designation. The design of this area should aim to mitigate any negative impact that new development might cause.
- New development should take landscape and topography context into careful consideration. Design should consider scale, layout, density, mass, materials and architectural features, as well as incorporate a high standard of landscaping to add to the quality of the place.
- New development should make sure that any negative impact from and to the development of the highways and transportation networks is minimised.

Context and land use/mix



01 Paddock Wood is surrounded by open fields and countryside. Safe and accessible corridors within the fields can improve the connectivity with the natural environment.

02 New development needs to be well-integrated into the existing settlement through pedestrian and cycle connections.

03 Existing green and blue assets like woodlands, trees, hedges, hedgerows, ponds and rivers need to be retained and integrated into the design.



Figure 33: The existing green assets in the area need to be preserved and well integrated into future development in order to maintain and improve the natural environment.



Figure 34: The local vernacular needs to be identified and used as reference for new development to help preserve the existing architectural style.

Context and land use/mix

Code 2. Land uses/mix

The predominant use within the new development will be mainly residential housing. However, there are also provision for small scale local centres with a range of local facilities, primary schools and a sports hub. Therefore, some guidelines for future development are:

- New housing proposals should provide a mix of house types, sizes and tenures, including affordable housing, the quantity of which is set by the Local Plan.
- With a greater emphasis on home working, new homes should be designed to be adaptable and enable workspace opportunities within new dwellings.
- Local centres should create attractive focal points with mix-use development.
- Local facilities should be located along main road networks and be easily accessible by all means of transportation.



Figure 35: Local examples of shops, retail and cafés that are found in the town centre, along Commercial Road. The town centre can be accessed by car as well as on foot via the many footpaths.



Figure 36: John Brunt V C pub is located along Church Road, just approximately 130m east of Commercial Road.



Figure 37: Foresters Arms along Maidstone Road is located approximately 100m west of Commercial Road.

ACCESS AND MOVEMENT



Code 3. Prioritise walking and cycling



Code 4. People friendly streets

Access and movement

Code 3. Prioritise walking and cycling

There is a good number of public footpaths in Paddock Wood. 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 town. Some 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. This connected pattern creates a 'walkable neighbourhood'; a place where streets are connected and routes link meaningful places together.

- 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. Establishing a robust pedestrian network: a) across any new development; and b) among new and existing developments, is key in achieving good levels of connectivity among any part of Paddock Wood.
- A well connected network pattern should be introduced to new development proposals and a cul-de-sac pattern should be avoided.
- 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.
- Design features such as barriers to vehicle movement, gates to new developments, or footpaths between high fences must be avoided.

- 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.
- The Police Secured by Design Guidelines¹ warn against the 'security of development being compromised by excessive permeability, for instance by allowing the criminal legitimate access to the rear or side boundaries of dwellings, or by providing too many or unnecessary segregated footpaths'.

Access and movement



Figure 38: Layout mainly dominated by cul-de-sacs encourages reliance on cars for local journeys and blocks pedestrian flow.



Figure 39: Local example of a cul-de-sac road, Newton Gardens, which does not allow any further connection to the main road network.



Figure 40: A connected layout, with some cul-de-sacs, balances sustainability and improves the sense of a walkable neighbourhood.



Figure 41: Local example of a permeable road, Forest Road, which allows for direct connection of Maidstone Road to the eastern residential area and the countryside.

Access and movement

Code 4. 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. Some guidelines for future development are:

- New streets should be linear with gentle meandering, providing interest and evolving views while helping with orientation. Routes must be laid out in a connected pattern allowing for multiple connections and choice of routes, particularly on foot. Cul-de-sacs must be relatively short and provide onward pedestrian and cycle links.
- Within the settlement boundaries, streets must not be built to maximise vehicle speed or capacity. Streets and junctions must be designed with the safety and accessibility of vulnerable groups in mind, such as children and wheelchair users, and may introduce a range of traffic calming measures.
- Streets must incorporate opportunities for street trees, green infrastructure, and sustainable drainage. For typical drainage solutions please see pages 43, 46 and 48.

- Swales could also be inserted into the landscaping to provide sustainable drainage solutions. Swales are shallow, broad and vegetated channels designed to store and convey runoff. They are easy to incorporate into landscaping and the maintenance cost is low.
- Where appropriate, cycle paths should be incorporated into street design to encourage people to use alternative transport.
- Traffic calming should be achieved by design using landscaping, street parking and building layout, and avoid using the traditional forms of engineered traffic calming like humps, cushions and chicanes.
- Crossing points that are safe, convenient, and accessible for pedestrians of all abilities must be placed at frequent intervals on pedestrian desire lines and at key nodes.
- Junctions must enable good visibility between vehicles and pedestrians. For this purpose, street furniture, planting, and parked cars must be kept away from visibility splays to avoid obstructing sight lines.

- At junctions with minor roads, the carriageway surface should be raised across a pedestrian crossing to prioritise pedestrian movement.
- Sufficient width of footway should be provided to facilitate a variety of mobilities, such as young family with buggies, mobility scooter, wheelchairs, etc. The Department for Transport Manual for Streets (2007)¹ states there is no maximum width for footway, it suggests that in lightly used streets, the minimum unobstructed width for pedestrians should generally be 2 m.
- New street design should include dedicated areas for cycle parking.

1. Manual for Streets (2007). Available at: <https://www.gov.uk/government/publications/manual-for-streets>

Access and movement

All the streets in new development should be designed to be attractive spaces where people would prefer walking and cycling over driving.

The following pages introduce suggested guidelines and design features including a range of indicative dimensions for street types in the new residential areas.

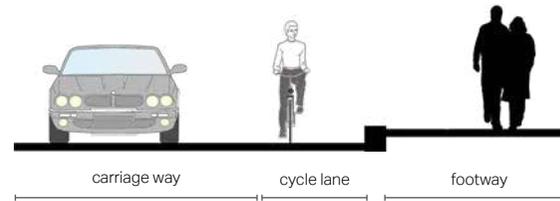


Figure 42: Cross-section illustrating a segregated cycleway.

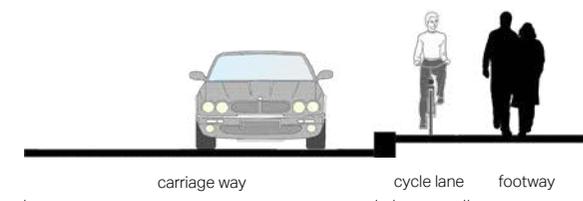


Figure 43: Cross-section illustrating a shared cycleway.



Figure 44: Local example of a gentle meandering street that creates an interesting visual result for pedestrians and drivers.



Figure 45: Local example of a residential street that hosts flower beds, bushes and trees offering a pleasant environment for pedestrians.

Access and movement

Primary streets

Primary streets within new development in Paddock Wood should ensure to create a balance between its placemaking role at the heart of the new community uniting various neighbourhoods. It must be defined by strong building lines and street trees to achieve a strong sense of enclosure.

- Primary streets are the widest neighbourhood roads and constitute the main accesses into any new development. 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.
- The quality of the public realm must be of a high standard and consistent throughout the whole primary road. Street trees and/or green verges along the road should be provided to contribute to local biodiversity, and provide cooling and shading.

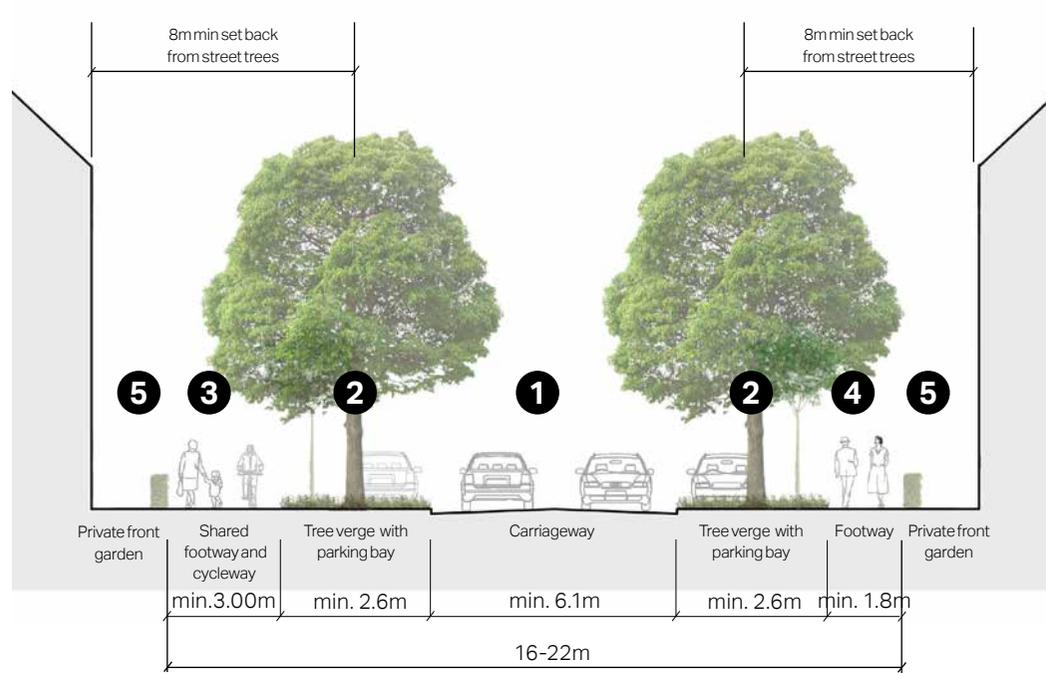


Figure 46: Cross-section to illustrate some guidelines for primary streets.



Figure 47: Local example of a primary street, Green Lane.

1. Carriageway (town-wide traffic).
2. Green verge with tall trees. The latter are optional but would be positive additions. Parking bays to be inset into the verges to avoid impeding moving traffic or pedestrians.
3. Shared footway and cycleway can provide an opportunity for cyclist to be segregated from vehicle traffic.
4. Footway.
5. Residential frontage with boundary hedges and front gardens.

Access and movement

Sustainable drainage into new primary streets

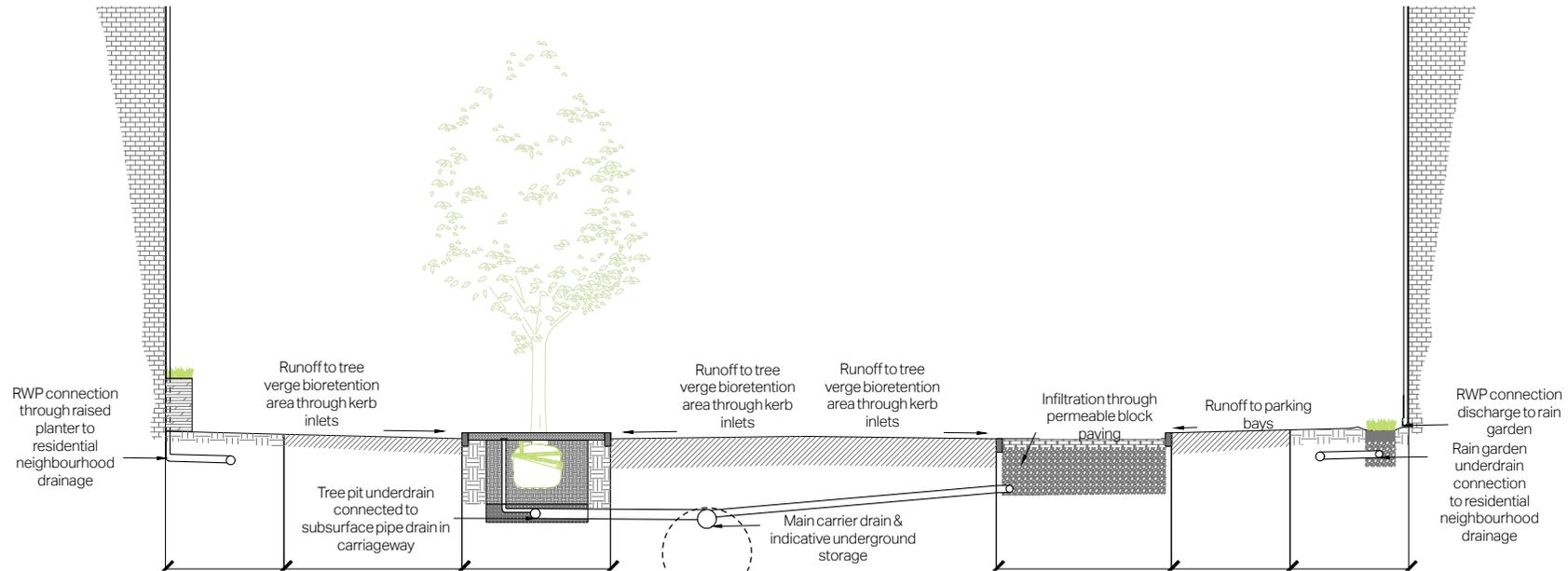


Figure 48: Primary street typical drainage section.



Figure 49: Rain garden along the building edge (source: © DASonnenfeld commons.wikimedia.org (CC BY-SA 4.0)).

Access and movement

Secondary streets

Some guidelines for secondary streets are:

- Secondary streets provide access between primary streets and neighbourhoods. They should emphasise the human scale and be designed for lower traffic volumes compared to primary streets.
- Secondary streets should accommodate carriageways wide enough for two-way traffic and on-street parallel car parking bays. 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 at key locations such as junctions and pedestrian crossings.
- Where possible, secondary streets should be tree-lined on both sides.

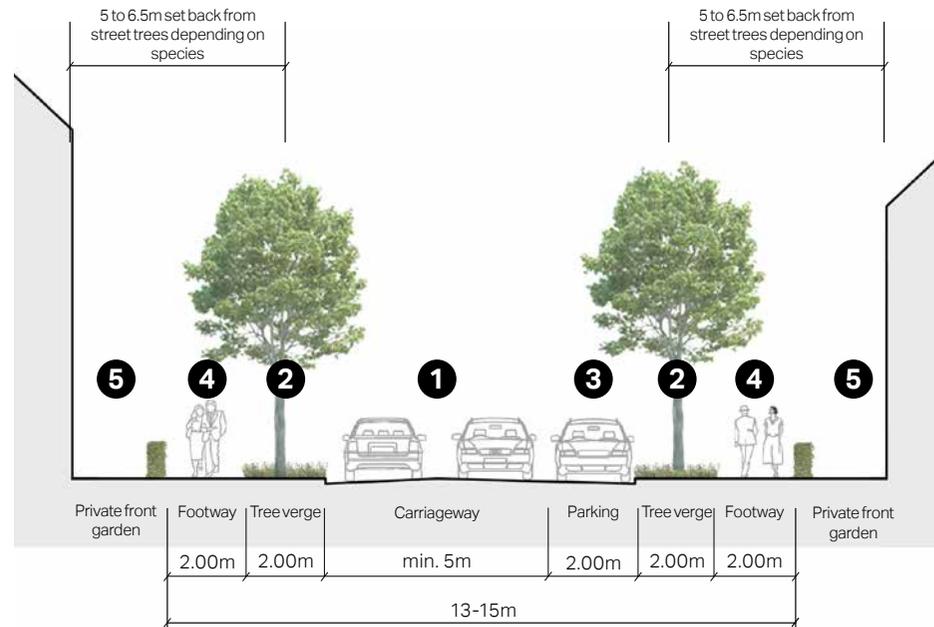


Figure 50: Cross-section to illustrate some guidelines for secondary streets.



Figure 51: Local example of a secondary street Mount Pleasant.

1. Shared carriageway (neighbourhood traffic). Traffic calming measures may be introduced at key locations if needed.
2. Green verge with medium trees. The latter are optional but would be positive additions.
3. Parking bay (may also be inset into verges).
4. Footway - utilities typically located underneath.
5. Residential frontage with boundary hedges and front gardens.

Access and movement

Tertiary streets

Some guidelines for tertiary streets are:

- Tertiary streets have a strong residential character and provide direct access to residences from the secondary streets. They should be designed for low traffic volumes and low speeds, ideally 20 mph.
- Carriageways should accommodate two-way traffic, cyclists and parking bays. These streets should also accommodate footways, with a 2m minimum width on both sides, and must be designed for cyclists to mix with motor vehicles. Traffic calming features such as raised tables can be used to prevent speeding.
- Tertiary streets should be formed with a high degree of built form enclosure, with consistent building lines and setbacks.
- Street trees should be provided with suitable gaps, wherever possible.

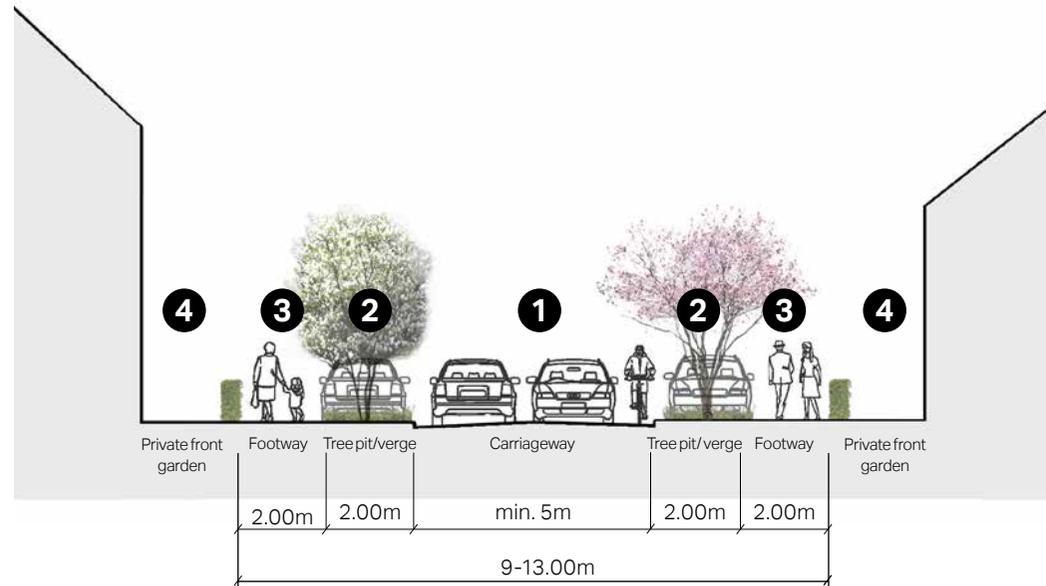


Figure 52: Cross-section to illustrate some guidelines for tertiary roads.



Figure 53: Local example of a tertiary street, Kiln Way.

1. Carriageway should accommodate both vehicles and cyclists (local access). Traffic calming measures may be introduced at key locations.
2. Tree verge or pit with small trees. The latter are optional but would be positive additions. Parking bays on both sides of the carriageway to alternate with trees to avoid impeding moving traffic or pedestrians.
3. Footway.
4. Residential frontage with boundary hedges and front gardens.

Access and movement

Sustainable drainage into new secondary and tertiary streets

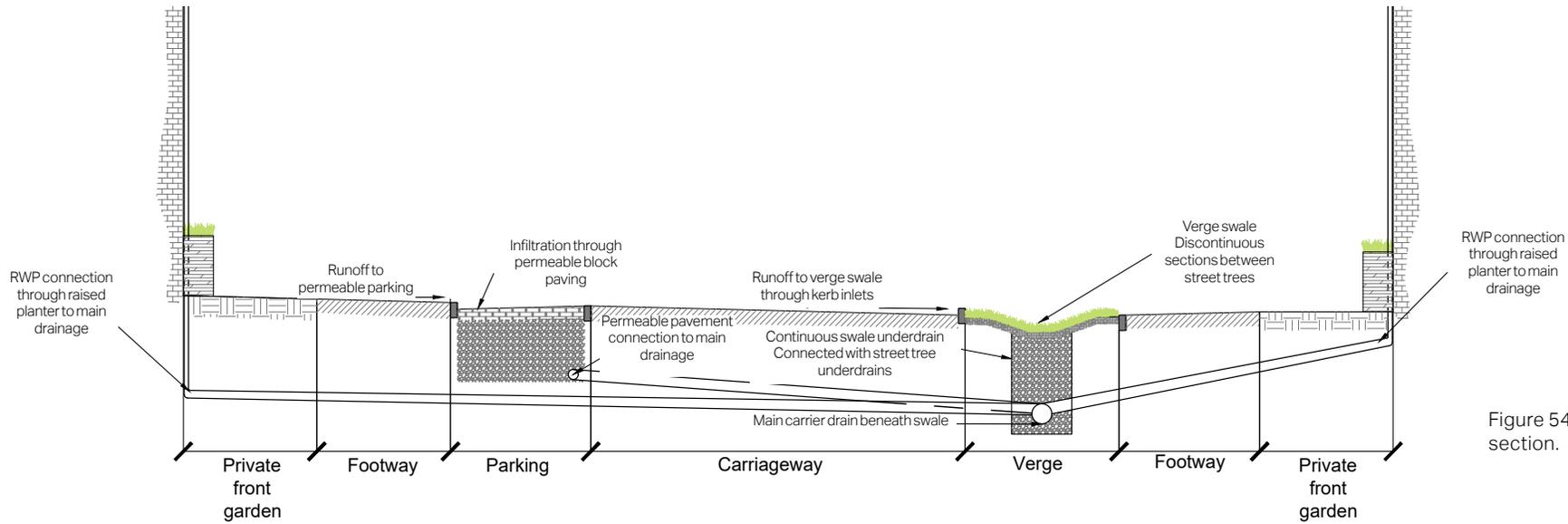


Figure 54: Tertiary street typical drainage section.

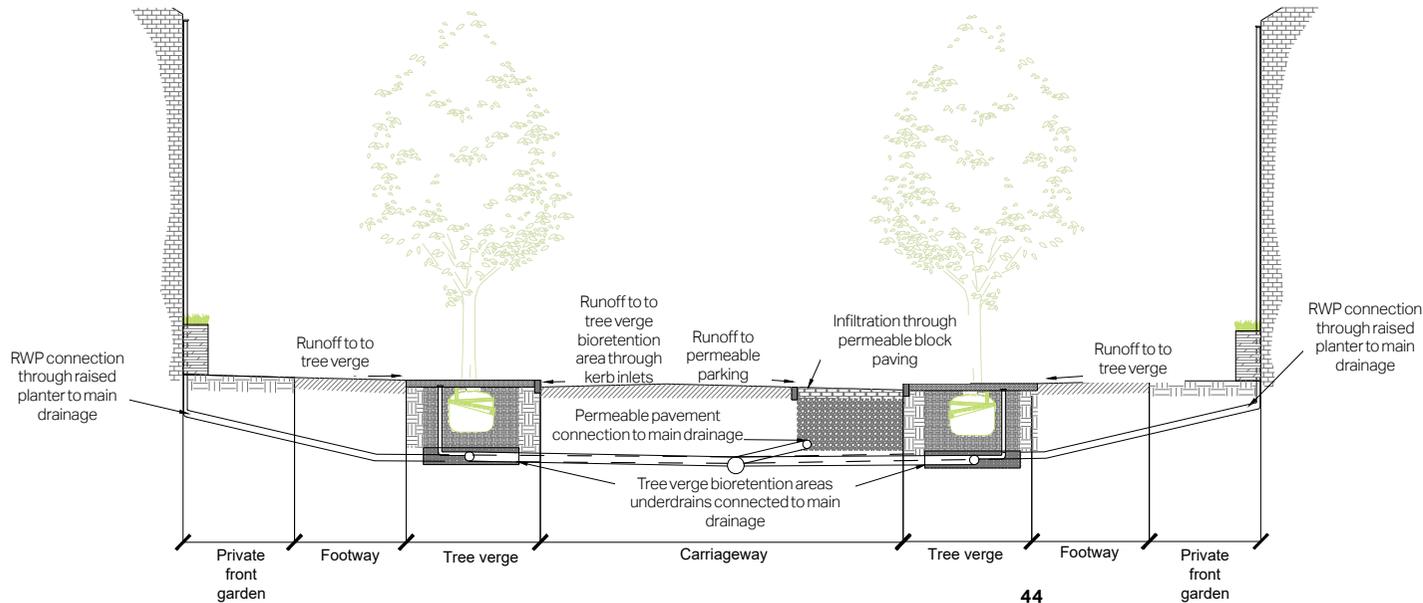


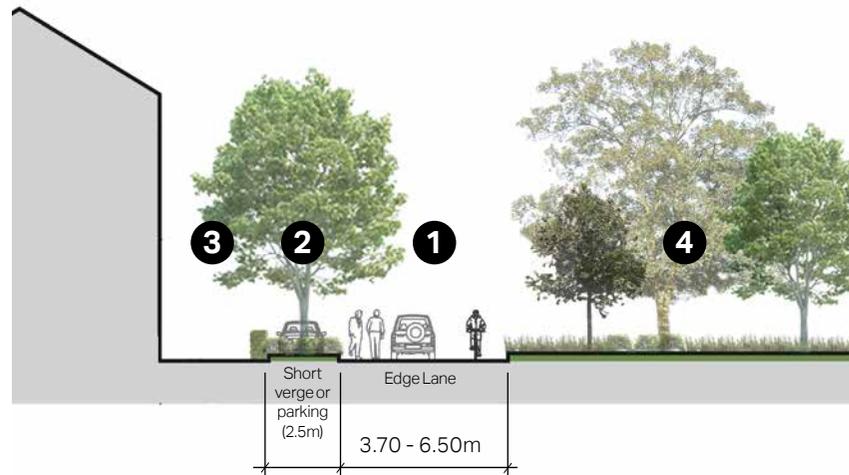
Figure 55: Secondary street typical drainage section.

Access and movement

Edge lanes

All the edges of new development areas in Paddock Wood should be served by continuous Edge Lanes to provide high level of connectivity.

- Edge lanes are low-speed and low-traffic 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.
- The lane width can vary to discourage speeding and introduce a more informal and intimate character. Variations in paving materials and textures can be used instead of kerbs or road markings.
- Edge lanes should be continuous providing high level of connectivity and movement. Cul-de-sacs must be avoided.



1. Shared lane (local access) - width to vary.
2. Green verge with trees. It is optional but would be positive additions. Parking bays to be interspersed with trees to avoid impeding moving traffic or pedestrians.
3. Residential frontage with boundary hedges and front gardens.
4. Green space and potential for implementing swales into the landscaping.

Figure 56: Cross-section to illustrate some guidelines for edge lanes.



Figure 57: Examples of an edge lane, UK.

Access and movement

Sustainable drainage into new edge lanes

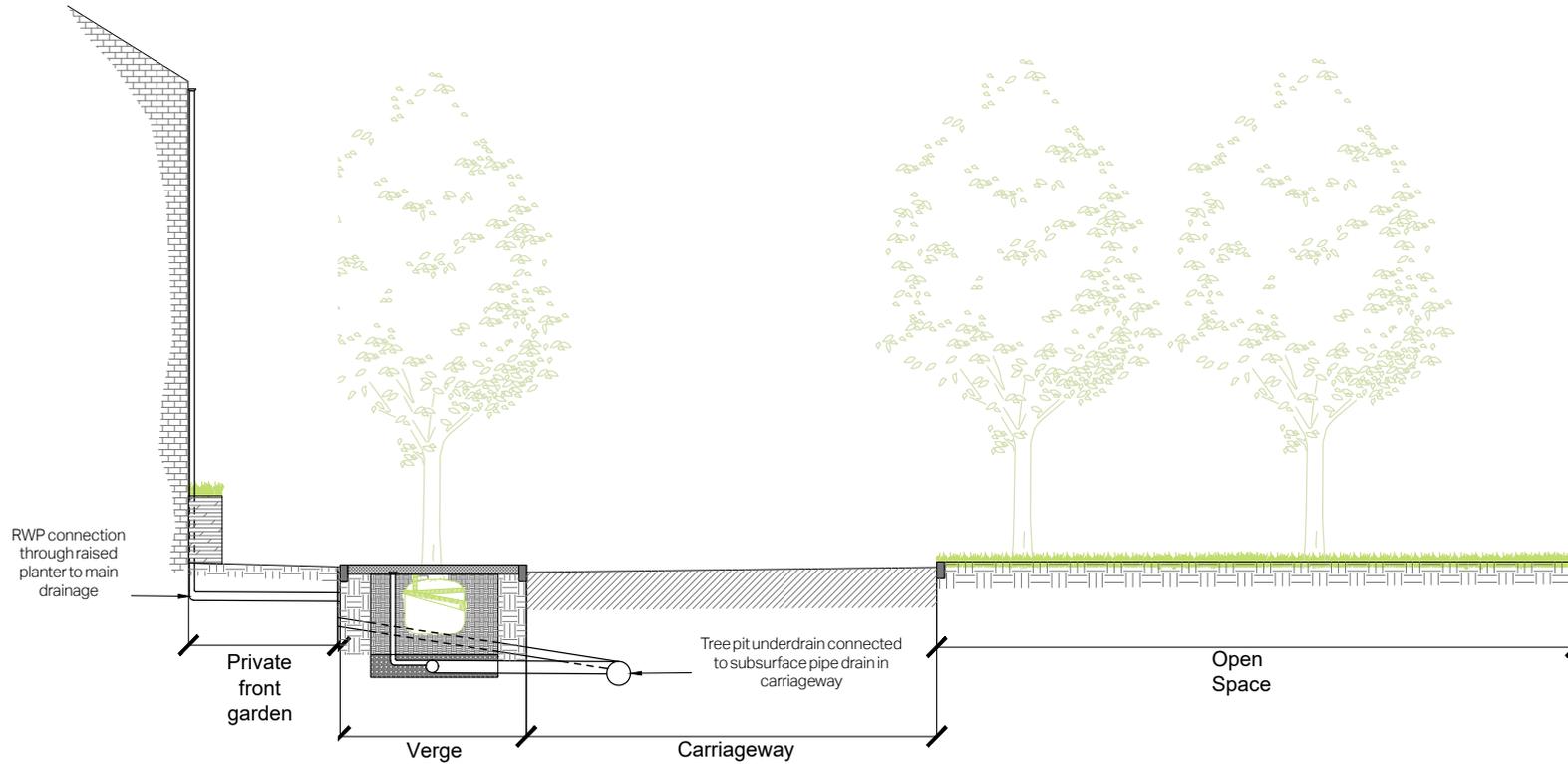


Figure 59: Edge lane overlooking basin in open space (source: Susdrain)

Access and movement

Green links

Some guidelines for green links are:

- Green links should be located within minimum 7.5m wide corridor adjacent to retained hedgerows, trees and woodlands.
- Existing retained trees, hedgerows and woodland to be managed to allow clear access for pedestrians and cyclists along the corridor whilst retaining existing character and habitat structure.
- Trees, shrubs and grass to be established within the corridor to reflect character area, maintain and enhance habitat.
- Shared or segregated footpath and cycleway to be provided within corridor.
- Footpath and cycleway to be hard surfaced and constructed of bound material which may also combine with vehicle access.
- Combined width of unsegregated footpath and cycleway to be a minimum of 3.0m.
- Where required, SuDS features to be incorporated into corridor beside the surface of shared footpath and cycleway.

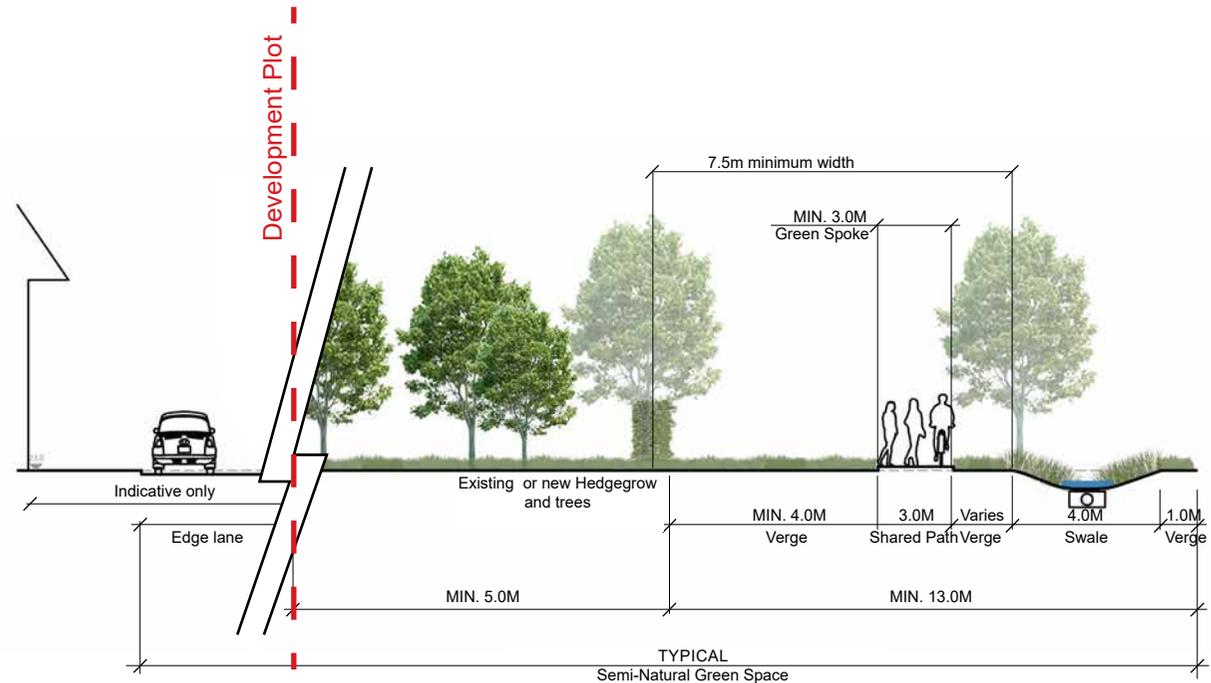


Figure 60: Section to illustrate some guidelines for green links.



Figure 61: Example of a green link (source: <https://www.sustrans.org.uk/our-blog/opinion/2020/august/how-does-the-uk-government-s-gear-change-relate-to-the-national-cycle-network>)

LANDSCAPE, NATURE AND OPEN SPACE



Code 5. Create green fingers



Code 6. Biodiversity



Code 7. Water management (SuDS)



Code 8. Trees



Code 9. Open spaces

Landscape, nature and open space

Code 5. Create green fingers

Series of green fingers should be created throughout the new developments as well as north of the railway line connecting the existing built up area in Paddock Wood providing links to the countryside and to create biodiversity networks, corridors and linkages. Opportunities should be sought to green the existing streets and courtyards to complete the green fingers and to contribute to the biodiversity connectivity.

- Green fingers should link open spaces, settlements and wide rural areas together.
- SuDS could be introduced when possible and incorporated in the design of green fingers.
- Developments should front onto and have access from the green fingers.
- Green fingers could contain some formal provision, such as a Neighbourhood Equipped Area of Play (NEAP), playing fields and an area for active recreation. Their many benefits include the improvement of the health and well-being of individuals and promotion of the development of inclusive communities.

- Existing streets can be retrofitted by introducing verges or street trees to complete the green finger connectivity and contribute to the biodiversity network.
- Green fingers will encourage walking and cycling over driving. However, since car users still represent a major group in the area, car parking should be well incorporated, e.g. parking bays with green verges and street trees, into the public realm to minimise the presence of cars. For further information about car parking please see the principles that are listed in Building for a Healthy Life and Manual for Streets documents in pages 8 and 9.



Figure 62: Seek opportunities to create green fingers within the town.



Figure 63: An example of a SuDS corridor - Upton Urban Extension, Northampton.



Figure 64: Local example of a residential street with green verges, street trees and physical boundary treatments on front gardens that creates a green network and enhances biodiversity.

Landscape, nature and open space

Code 6. Biodiversity

Tunbridge Wells Borough Council declared a Climate Emergency and set a commitment to become carbon neutral by the 2030. Following principles give guidance on how to contribute to the carbon neutral target plan.

- New developments and building extensions should aim to strengthen biodiversity and the natural environment.
- Existing habitats and biodiversity corridors should be protected and enhanced.
- New development proposals should aim for the creation of new habitats and wildlife corridors; e.g. by aligning back and front gardens and incorporating holes in the back gardens for the easy travel of hedgehogs, small mammals and amphibians.
- Gardens and boundary treatments should be designed to allow the movement of wildlife and provide habitat for local species.

- Biodiversity could be also benefited by areas of unmanaged grassland within public open green spaces.
- 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 65: Local examples of physical boundary treatments on front gardens including flower beds, trees, bushes and hedges that enhance biodiversity and improve the natural environment.

Landscape, nature and open space

Code 7. Water management (SuDS)

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

Paddock Wood is an area that is very susceptible to flood risk due to a large number of brooks running along, mainly, to the west, as well as to the east of the existing settlement. Thus, a cohesive approach needs to be taken by the developers to mitigate any flooding or drainage issues.

The most effective type or design of SuDS would depend on site-specific conditions such as underlying ground conditions, infiltration rate, slope, or presence of ground contamination. 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.

- SuDS must be designed sensitively to augment the landscape and provide biodiversity and amenity benefits.

Usually, the most sustainable option is the collection of surface water to reuse, for example in a water butt or rainwater harvesting system, as this has the added benefit of reducing pressure on important water sources. Where reuse is not possible there are two alternative approaches using SuDS.

- Infiltration, which allows water to percolate into the ground and eventually restore groundwater.
- Attenuation and controlled release, which holds back the water and slowly releases it into the sewer network.

Landscape, nature and open space



Figure 66: Examples of SuDS designed as a public amenity and fully integrated into the design of the public realm in Stockholm, Sweden.



Figure 67: Example of swales check dam integrated with a crossing point.



Figure 68: Local example of SuDS in the new development to the east of Green Lane.



Figure 69: Example of small scale pond.

Landscape, nature and open space

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.



Figure 70: Examples of water butts used for rainwater harvesting in Reach, Cambridgeshire.

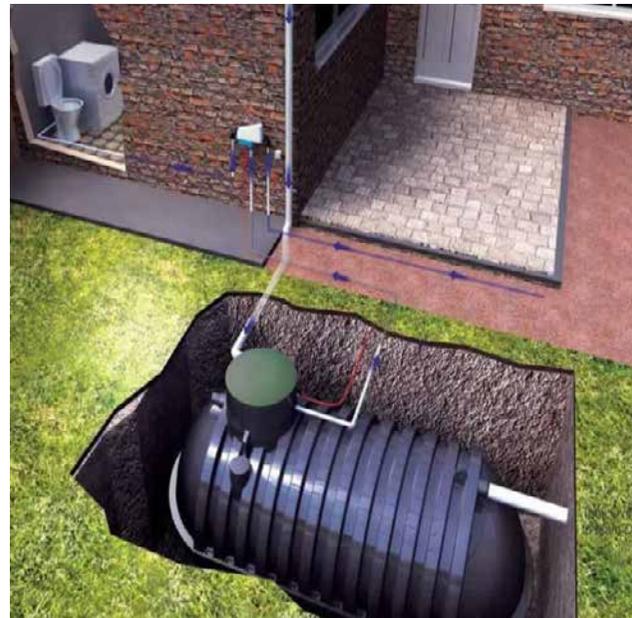


Figure 71: Example of an underground water tank in relationship with the building (Source: <https://handymantips.org/about-underground-water-tanks/>)



Figure 72: Example of a gravity fed rainwater system for flushing a downstairs toilet or for irrigation.

Landscape, nature and open space

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.
- Combine landscape/planters with water capture systems.



Figure 73: Diagram illustrating rainwater harvesting systems integrated into open spaces and residential properties.

Landscape, nature and open space

Retrofitted SuDS

Retrofitting SuDS can potentially help to manage hard surface water, flooding and water quality problems within the existing built-up areas. In particular the type of SuDS that use green infrastructure can improve the aesthetics of the streetscape as well as the biodiversity and air quality.

Bioretention systems can be used as a retrofitted SuDS solution on existing streets. It uses planting and engineered soils to intercept, collect, filter and attenuate rainwater. Street trees and planting are an important feature of the street design principles of Paddock Wood, providing opportunities for bioretention systems to be integrated with the landscape.

- Street tree pits can form a series of individual bioretention systems.
- Small bioretention systems can be provided separating parking bays or in small planted areas.

- Bioretention systems serving wider areas can be situated in open space, central courtyards or elongated along verges.
- Runoff should enter at surface level where possible, to maximise treatment potential.
- Wherever street trees or planting require irrigation or drainage, this should be integrated with the wider drainage system.



Figure 74: Example of retrofitted SuDS along a residential street.

Landscape, nature and open space

Code 8. Trees

Trees are important contributors in addressing the climate change resilience. They provide ecological, public health, and aesthetic benefits, including:

- Supporting biodiversity, improving the quality of surface water run-off, and reducing flood risks;
- Improving air quality by filtering pollutants and regulating temperatures in built-up areas through shading;
- Improving mental health by reducing noise and stress levels and softening the built-up environment; and
- Establishing a sense of place and human scale by creating a more attractive environment, calming traffic, and screening undesirable views.

When planting new trees or retaining existing ones, the following principles should apply:

- Aim to preserve existing mature trees and incorporate them in the new landscape design.

- Size of tree pit should allow sufficient soil volume around the tree. Ensure tree stems are in the centre of the verge to provide a 1m clearance of the footway or carriageway.
- Existing tree root zones should be protected to ensure that existing trees can grow to their mature size. Root barriers must be installed where there is a risk of damaging foundations, walls, and underground utilities.
- New trees should not be planted close to the building or block key view corridors and vehicular circulation sight lines.
- New trees should be planted to reinforce the existing canopy and support biodiversity by creating green links. Coordination with the SuDS strategy is required to maximise drainage and stormwater management benefits.
- New trees should be integrated into the design of new developments from the outset rather than left as an afterthought to avoid conflicts with above- and below-ground utilities.

- A variety of tree species is preferred over a single one. Species must be chosen according to climate change resilience, adaptation to local soil conditions, environmental benefits, size at maturity, and ornamental qualities.



Figure 75: Local example of a residential street where street trees are present and create a pleasant environment for pedestrians, Green Lane.

Landscape, nature and open space

Code 9. Open spaces

Open spaces play a vital role in creating a positive environment. These are places fostering community and gathering, thus creating lively places in neighbourhoods.

The new development in Paddock Wood should provide a range of formal and informal green spaces near new homes within 5 to 10 minutes walking distance. A new sports hub could be located to the north of the railway line to provide the highest level of accessibility especially from the railway station.

Some guidelines for future development 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. This will benefit both new and existing communities.
- A variety of types and scales of open spaces should be suggested. Paddock Wood already has a range of

playgrounds, high street, sports fields, allotments, linear greens, churchyards and parks. Therefore, new development should aim to complement the existing types of open spaces.

- Green buffer zones between older and new development are acceptable. In particular, [Figure 110](#) illustrates the relationship between buildings and green edges and the importance of footpaths to allow for connections between new and existing development.
- New and existing landscapes and open spaces should be located within walking distance from their intended users and if appropriate, these should be linked to form connected green networks. Tree lined avenues can also be an alternative, where direct green links are not possible. In particular, [Figure 62](#) indicates some green networks within the existing settlement that could be enhanced to create connections with new development.

- Surrounding buildings should overlook play areas and public spaces to encourage movement and natural surveillance.
- Open spaces should be equipped with good quality of street furniture to create pleasant seating areas, shaded spaces avoiding hidden spots.
- 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.
- A wildlife-friendly environment should be created. This could be achieved through bird nesting sites in buildings, bat boxes, bug hotels, bee homes incorporated into bricks, travel routes for hedgehogs, small mammals and amphibians.

Landscape, nature and open space

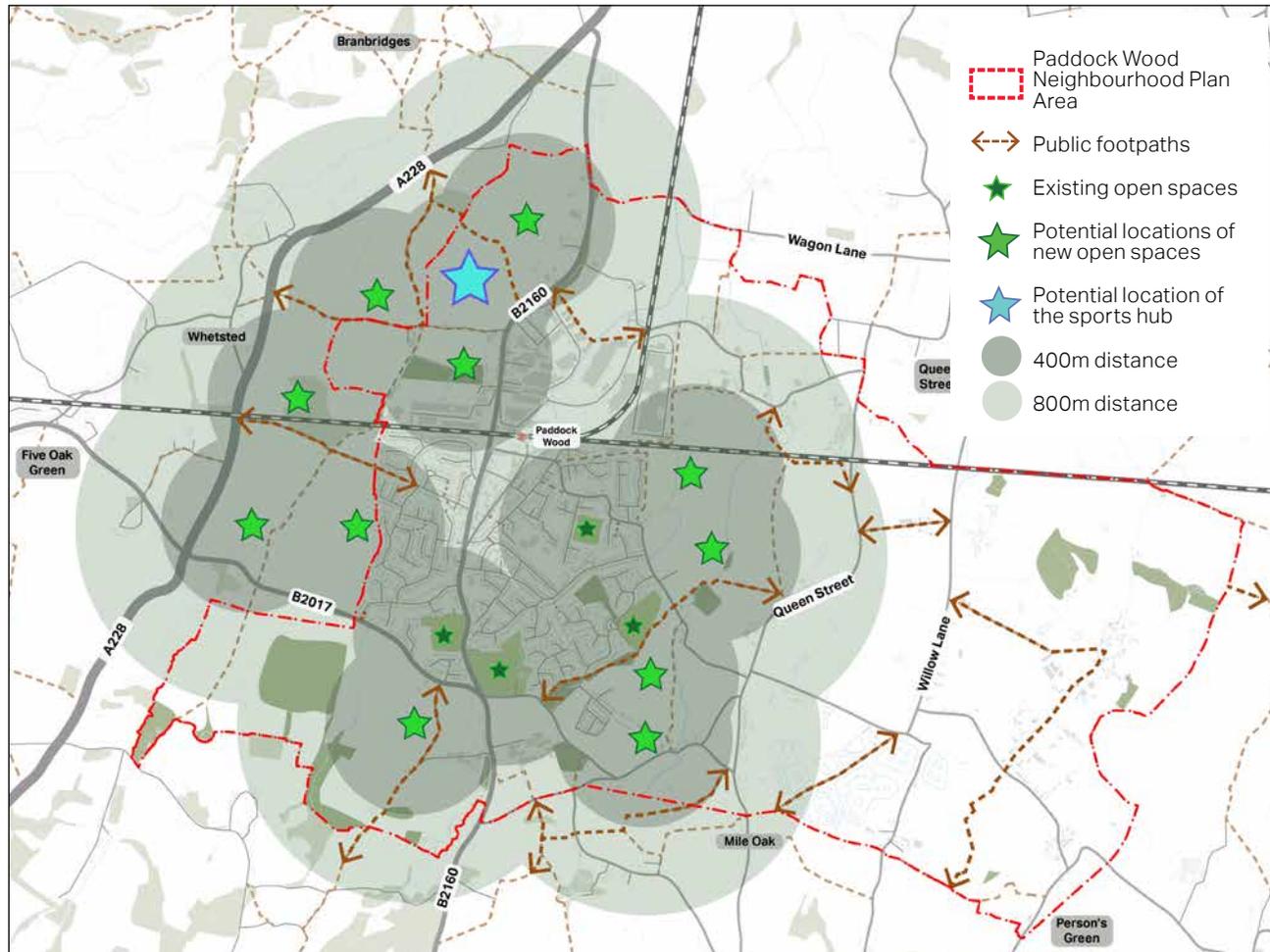


Figure 76: Map showing existing open spaces and illustrative location of new open spaces within the Neighbourhood Plan Area.



Figure 77: Example of a structure used as a frog habitat corridor located in an outdoor green space.



Figure 78: Example of a bughouse located in an outdoor playground facility.

PLACEMAKING AND IDENTITY



Code 10. Patterns of growth



Code 11. Settlement edges



Code 12. Continuity and enclosure



Code 13. Building scale and massing



Code 14. Corner treatment



Code 15. Legibility and wayfinding



Code 16. Boundary lines and boundary treatment

Placemaking and identity

Code 10. Patterns of growth

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

- Any new development in Paddock Wood should be carefully sited to minimise negative impacts on the landscape and existing woodlands.
- New developments must demonstrate an understanding of the scale, building orientation, enclosure, and façade rhythm of the existing settlement to respect its character.
- Perimeter blocks must be employed consistently throughout the new developments in Paddock Wood. Their sizes and shapes should respond to the uses, existing landscape features, topography and residential density. Mews and courtyards should be used within large blocks to create interesting and efficient arrangements.
- 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.

- Boundaries such as walls or hedgerows, whichever is appropriate to the street, should enclose and define each street along the back edge of the pavement, adhering to a clear building line that can allow minor variations for each development group.
- Any proposal that would adversely affect the physical appearance of the surrounding character area, or give rise to an unacceptable increase in the amount of traffic, noise, or disturbance would be inappropriate. Developments should avoid car-dependent layouts based on the monotonous repetition of a uniform building typology arranged along cul-de-sacs.
- The layout of new development should optimise the benefits of daylighting, through the use of solar panels, and passive solar gains, through building orientation, as this can significantly reduce energy consumption.
- New developments should have regard to the future climate change implications.



Figure 79: Physical boundary treatments improve the aesthetics of the front gardens as well as of the whole neighbourhood.

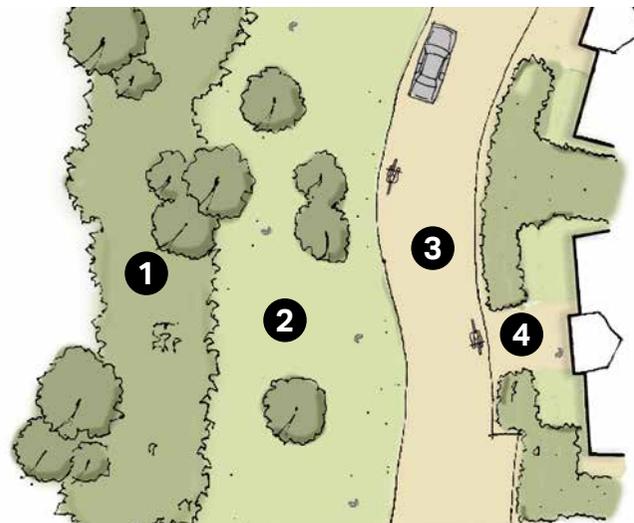
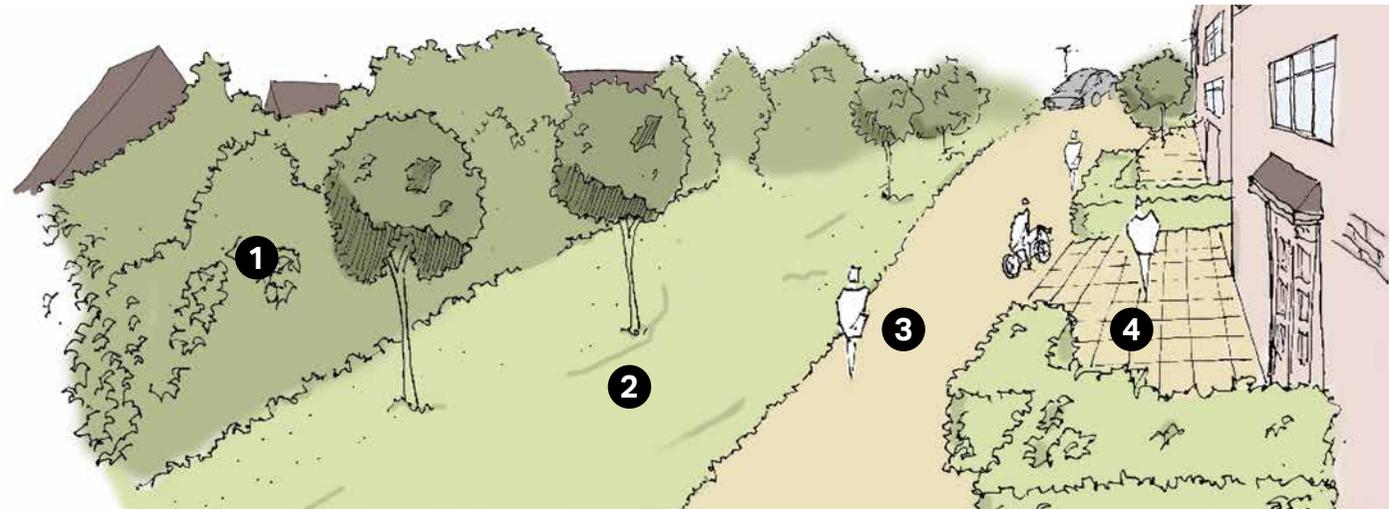


Figure 80: Green verges and street trees improve the aesthetics of the street and encourage people to walk.

Placemaking and identity

Code 11. Settlement edges

- Interfaces between the existing settlement edges and the future town extensions to the west and east must be carefully designed to integrate new and existing communities. This is particularly important where new residential buildings will face existing residential properties.
- 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 illustrations opposite 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 (see page 44 for details).
4. New residential frontage with boundary hedges and front gardens.

Figure 81: Plan sketches of potential edges with the new settlement.

Placemaking and identity

Code 12. Continuity and enclosure

Clearly defined spaces help to achieve cohesive and attractive urban form, and help in creating an appropriate sense of enclosure.

The following principles serve as general guidelines that should be considered for achieving satisfactory sense of enclosure and continuity in new developments:

- Building façades should always front onto streets and public spaces such as parks, pedestrian and cycle routes.
- When designing building setbacks, façades should have an appropriate ratio between the width of the street and the building height.
- Buildings at the end of street should be designed to turn corners and terminate views.
- Long spaces can lack visual enclosure. Variation to the building lines and visual pinch points can be introduced to avoid this problem.

- The cross-sections of public spaces and the building elevations either side can be varied to create places with different visual character. Ratios of between 1:1.5 and 1:3 (building height/street width) will generally create spaces with a strong sense of enclosure.
- In the case of terraced buildings, it is recommended that a variety of plot widths, land use and small setbacks should be considered during the design process to create an attractive townscape without undermining the sense of continuity.
- Where a looser pattern of development is proposed, visual continuity and well-defined open spaces can be achieved by the careful positioning of walls, railings, landscaping and paving, to link buildings together and define public and private spaces.
- Trees, hedges, and other landscaping features can help create a more enclosed streetscape in addition to providing shading and protection from heat, wind, and rain.

- A clearly defined space should offer differentiation between uses, like changed in texture, colour or paving pattern.
- The materials should be visually appealing and should help to reinforce the local identity.



Figure 82: Mature trees and plantation within the verge and the landscaping in the front gardens create a great level of enclosure in Green Lane in Paddock Wood.

Placemaking and identity

Code 13. Building scale and massing

The average building height in Paddock Wood existing settlement is 2.5 storeys. Some guidelines for new development are:

- Buildings should be sympathetic in scale to the context of the site.
- Subtle variations in height should be created by altering eaves and ridge heights to add visual interest. The bulk and pitch of roofs, however, must remain sympathetic to the tree canopy, the local vernacular, and the low-lying character of the town. Another way to achieve visual interest could be by varying frontage widths and plan forms.
- The massing of new buildings must ensure a sufficient level of privacy and access to natural light for their occupants and avoid overshadowing existing buildings. New buildings must not significantly compromise existing property views of open and green spaces and big skies.



Figure 83: The building massing along Commercial Road is consistent with subtle variations.



Figure 84: The building massing along the residential areas is consistent with subtle variations.

Placemaking and identity

Code 14. Corner treatment

Together with the creation of potential local landmarks, one of the crucial aspects of a successful townscape and urban form is the issue of corners. Because these buildings have at least two public facing façades, they have double the potential to influence the street's appearance. Therefore, the following guidelines should apply to corner buildings.

- Buildings should be designed to turn corners and terminate views. Corner buildings should have both side façades animated with doors and/or windows. Exposed, blank gable end buildings with no windows fronting the public realm should be avoided.

- If placed at important intersections the building should be treated as a landmark and thus be slightly taller or display another built element, signalling its importance as a wayfinding cue.
- Given their prominence, decorative architectural elements should also be considered in treating corner buildings.
- The form of corner buildings should respect the local architecture characters that improves the street scene and generates local pride.
- All the façades overlooking the street or public space should be treated as primary façades. They should have some form of street contact in the form of windows, balconies, or outdoor private space.
- Streets should have a strong continuity of frontage not only for being visually attractive and enhancing the streetscape, but also for providing high levels of natural surveillance.

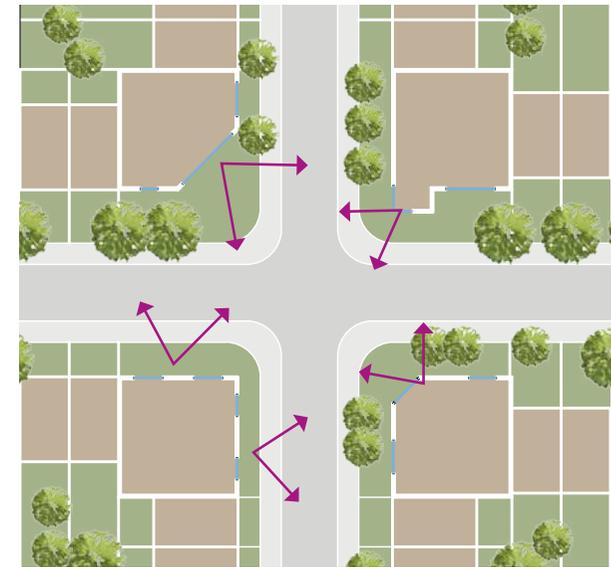


Figure 85: Diagram reflecting design principles for corner buildings.

Placemaking and identity

Code 15. 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. Some 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.
- 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 like 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.
- 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 86: Large-sized trees can act as landmarks navigating people around the town.



Figure 87: Buildings with distinct architectural details and larger massing compared to the average building massing in the area can act as landmarks.

Placemaking and identity

Code 16. Boundary lines and boundary treatment

Building line and boundary treatments vary across Paddock Wood. 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. Some 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, as appropriate, made of traditional materials found elsewhere in the town such as local bricks. The use of either panel fencing or metal or concrete walls in these publicly visible boundaries should be avoided. Natural boundary treatments should still enable adequate natural surveillance.



Figure 88: Physical boundary treatments improve the aesthetics and provide a separation between private and public space.



Figure 89: Boundary lines can use a combination of soft, physical boundary treatments, and hard, timber fencing, techniques to offer variety on the streetscene.

PUBLIC REALM



Code 17. Hard landscaping, materials and street furniture



Code 18. Permeable paving



Code 19. Street lighting

Public realm

Code 17. Hard landscaping, materials and street furniture

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.

Some guidelines for new development are:

- The public realm should provide high quality paving that is of a cohesive design using a palette of sustainable and durable materials. Permeable paving should be preferred to contribute to rain water infiltration.
- Materials should be robust, aesthetically attractive and with excellent weathering characteristics defining a sustainable and attractive place for residents and visitors.
- The laying pattern and materials used should make a significant contribution to the overall appearance, quality and success of a scheme.
- 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.
- Larger development projects with more than one developer should employ the same consistent palette of materials and designs.



Figure 90: Examples of quality materials and visually pleasing layout patterns that could be considered for public realm surfacing.

Public realm

Code 18. 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. In addition, permeable pavement must also:

- Flood and Water Management Act 2010, Schedule 3.¹
- The Building Regulations Part H – Drainage and Waste Disposal.²
- Town and Country Planning (General Permitted Development) (England) Order 2015.³

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.⁴
- The SuDS Manual (C753).⁵
- Guidance on the Permeable Surfacing of Front Gardens.⁶

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

⁵ CIRIA (2015). The SuDS Manual (C753).

⁶ Great Britain. Ministry of Housing, Communities & Local Government (2008). Guidance on the Permeable Surfacing of Front Gardens. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/7728/pavingfrontgardens.pdf



Figure 91: Example of a permeable paving.



Figure 92: Example of a permeable paving.

Public realm

Code 19. Street lighting

Street lighting within residential areas is important to create safe streets where people feel comfortable walking and cycling.

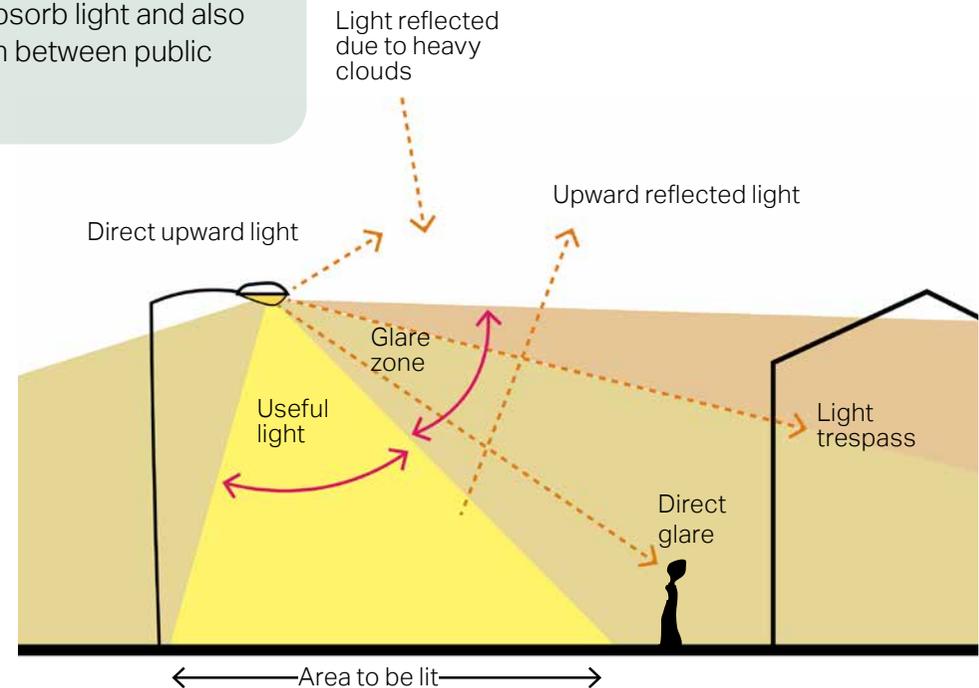
However, artificial light should be used correctly to maximise its benefit and avoid creating any kind of disturbance to neighbouring properties. In particular, it is about getting the right light, in the right place and providing light at the right time. Some guidelines for new development are:

- New developments in Paddock Wood must provide street lighting on every type of street including secondary and tertiary streets, mews and courtyards and edge lanes.
- Any new development shall ensure that lighting schemes will not cause unacceptable levels of light pollution particularly in intrinsically dark areas in the countryside.
- New development shall avoid the use of lighting, e.g. blue LED light, that has a negative impact on health and wellbeing.

- New development must consider lighting schemes that could be turned off when not needed.
- The needs of particular individuals or groups should be considered where appropriate (e.g. the safety of pedestrians, cyclists, drivers or older users).
- Vegetation and planting on front gardens should be dense to absorb light and also offer some separation between public and private space.

- Selective lighting design approach to avoid blanket treatment and ensure that lighting responds to the particular characteristics of each location.
- Mounting lights onto buildings should be considered to avoid cluttering the streetscape.

Figure 93: Diagram to illustrate the different components of light pollution and what 'good' lighting means.



BUILT FORM



**Code 20. Building lines and
roofline**



Code 21. Fenestration



**Code 22. Materials and
architectural details**

Built form

Code 20. Building lines and roofline

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

- The scale of the roof should always be in proportion with the dimensions of the building itself.
- Monotonous repetitions of the same building elevations should be avoided, therefore subtle changes in roofline should be ensured during the design process.
- Traditional local roof materials, shapes, and detailing should be considered and implemented where possible in cases of new development.
- Dormers can be used as a design element to add variety and interest to roofs. They should be proportional to the dimensions of the roof and façade, and their design should be coordinated with the materials and architectural style used on the rest of the elevation.



Figure 94: The roofline within the town core area is relatively continuous and consistent with subtle variations.



Figure 95: The roofline of the dwellings that are located in close proximity to the surrounding countryside is less consistent, as the variations on the eaves are evident, and less continuous as the gaps between the buildings are more regular.

Built form

Code 21. Fenestration

A limited range of traditional window patterns are characteristic of some traditional houses in Paddock Wood. Casement and bay windows are part of the local vernacular so they are encouraged to be used in new developments. They add interest and strengthen local character along any streetscene. Timber windows allow a finer profile to be achieved and if they are maintained properly they tend to be more durable than uPVC alternatives.

Some guidelines for new development are:

- White painted timber or oak windows should be included in the design.
- Consideration should be given to ground floor windows being larger than upper floor windows, to add more animation and natural surveillance to the streetscene.
- Consideration should be given to including windows with a vertical emphasis.

- Consideration should be given to including bay windows to add interest and strengthen local character along any streetscene.



Figure 96: Local examples of fenestration in the area.

Built form

Code 22. Materials and architectural details

The materials and architectural detailing used throughout Paddock Wood can be a reference point for new development and contribute to its character. Some 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.

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



Hipped roof



Gabled roof



Hipped dormer



Grey clay roof tiles

Built form



Chimney



Patterns of brickwork on the facade



Buff-coloured bricks



Off-white render



Tiles on the facade



Porch



Timber fencing



Soft landscape

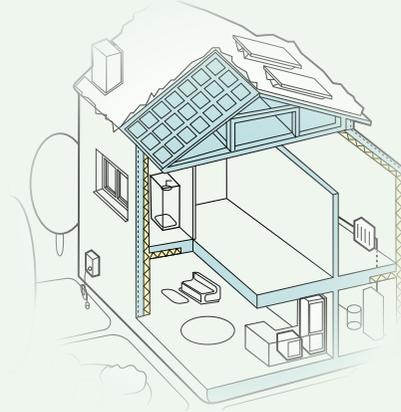
SUSTAINABILITY



Code 23. Minimising energy use



Code 24. Lifetime and adaptability



Code 25. Minimising construction waste



Code 26. Recycling materials and buildings



Code 27. Reducing car use



Code 28. Electric vehicle charging points



Code 29. Servicing



Code 30. Cycle parking solutions

Sustainability

Sustainability principles should accord with the latest national and local guidances as well as the Kent Design Guide Appendix 1 (Sustainability, page 26-27).

Code 23. Minimise energy use

- 'Buildings contribute almost half (46%) of carbon dioxide (CO₂) emissions in the UK. The government has set rigorous targets for the reduction of CO₂ emissions and minimising fossil fuel energy use. It is the responsibility of all new development to minimise energy use in the construction and ongoing use of buildings and to maximise passive and active technologies'.

Code 24. Lifetime Adaptability

- 'The fastest route to building a functional, supportive, neighbourly community is to build homes that people can and want to live in for most of their lives instead of having to move every time domestic circumstances change'.

- 'Lifetime' homes means designing in the flexibility and adaptability needed to allow for easy incorporation of wheelchair accessibility, addition/removal of internal walls, and ease of extension - both vertically and horizontally. This is particularly important for the aged, infirm or expanding/contracting families who may be dependent on nearby friends and family for emotional and physical support'.

Code 25. Minimising Construction Waste

- 'Construction waste accounts for an alarmingly high proportion of all waste produced in this country. Government targets aim to reduce construction waste on major sites by 30%. Careful design and specific actions, including off-site manufacture, can help reduce waste during construction'.

Code 26. Recycling Materials and Buildings

- '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. Development should also maximise the re-use of existing buildings (which often supports social, environmental and economic objectives as well)'.

Sustainability



Figure 97: Use of shingle-like solar panels on a slate roof, with the design and colour of the solar panels matching those of the adjacent slate tiles.



Figure 98: Positive example of implementing solar panels since the design stage.

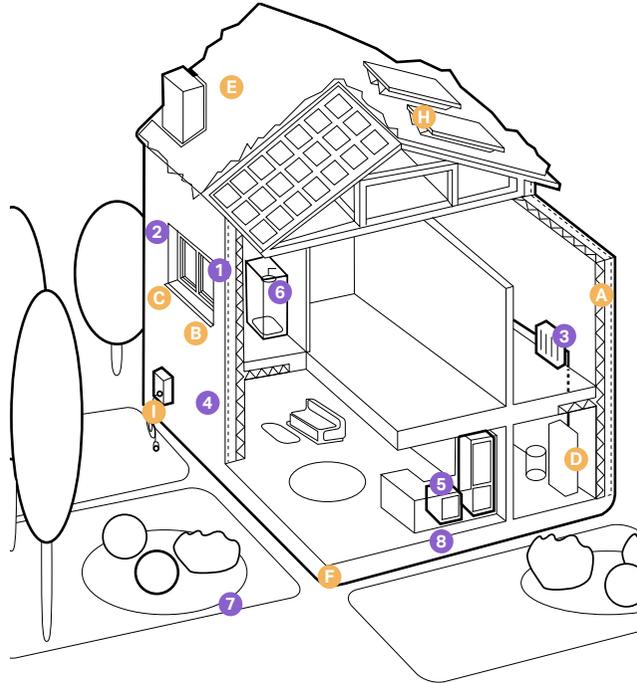


Figure 99: Diagram showing low-carbon homes in both existing and new build conditions.

Existing homes

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

Additional features for new build homes

- A  **High levels of airtightness**
- B  **More fresh air** with 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, rainwater harvesting and reflective walls
- F  **Flood resilience and resistance** e.g. raised electrical, concrete floors and greening your garden
- G  **Construction and site planning** timber frames, sustainable transport options (such as cycling)
- H  **Solar panel**
- I  **Electric car charging point**

Sustainability

Code 27. Reducing Car Use

- ‘Developments which do not require the use of a car to reach local facilities or enjoy a high quality of life will help reduce traffic, pollution, road accidents and environmental impact for all the community. They will also encourage healthy activities such as walking and cycling and enable more social interaction and neighbourliness’.
- ‘If developments incorporate local shops and facilities, are close to public transport, and include attractive, safe pedestrian and cycling routes, this will help reduce car usage without reducing car accessibility or car ownership. It will also enable a high quality of life for those least likely to own a car – the very young and the very old’.

Code 28. Electric vehicle charging points

On-street car parking

- Car charging points should be provided when on-street parking is suggested, always adjacent with public open space.
- Where charging points are located on the footpath, a clear footway width of 1.5m is required next to the charging point, for a wheelchair user and a pedestrian to pass side-by-side.
- Charging points should be placed so they can serve as many vehicles as possible. This helps to overcome issues associated with charged vehicles or petrol or diesel vehicles blocking dedicated EV spaces. This can make the charging point unusable for others if the charging cables cannot reach other spaces.

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. Avoid cluttering elevations, especially main façades and front elevations.



Figure 100: Off-street mounted car charging points.

Sustainability

Code 29. Servicing

With modern requirements for waste separation and recycling, the number and size of household bins has increased. This poses a problem with the aesthetics of properties. Some guidelines for future development are:

- When dealing with waste storage and servicing arrangements site conditions should be taken into account. In some examples waste management should be from the front of buildings, and in some others from the rear. It is recommended that bins are located away from areas used as amenity spaces.
- Create a specific enclosure of sufficient size for all the necessary bins.
- Bins should be placed within easy access from the street and, where, possible, open on the pavement side to ease retrieval.
- Enclosures could be combined with cycle storage.

- The materials palette should be referred in order to select suitable materials for enclosures.
- Bins should be placed as close to the dwelling's boundary to the public highway, such as against wall, fence, hedge but not in a way as to obstruct the shared surface pedestrian and vehicle movements.
- Green roofs should be incorporated in the environmentally sustainable designs for enclosures.



Figure 101: Example images showing bins are stored in the front of the house in a discrete way.



Figure 102: Example images showing bins are stored at the rear of the house in a discrete way.

Sustainability

Code 30. Cycle parking solutions

A straightforward way to encourage cycling is to provide secured, covered cycle parking within all new residential developments and publicly available cycle parking in the public realm.

Houses without garages

- 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.
- Parking should be secure, covered and it should be well integrated into the streetscape if it is located at the front of the house.
- The use of planting and smaller trees alongside cycle parking can be used to mitigate any visual impact on adjacent spaces or buildings.

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.
- Bikes must be wheeled out easily without having to move the vehicle.

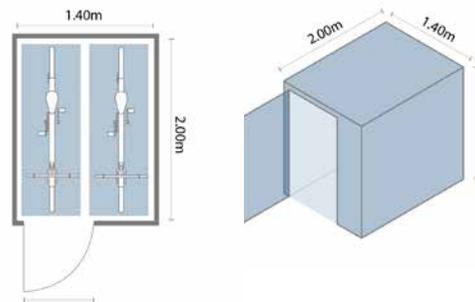


Figure 103: Sheffield cycle stands for visitors and cycle parking illustration.

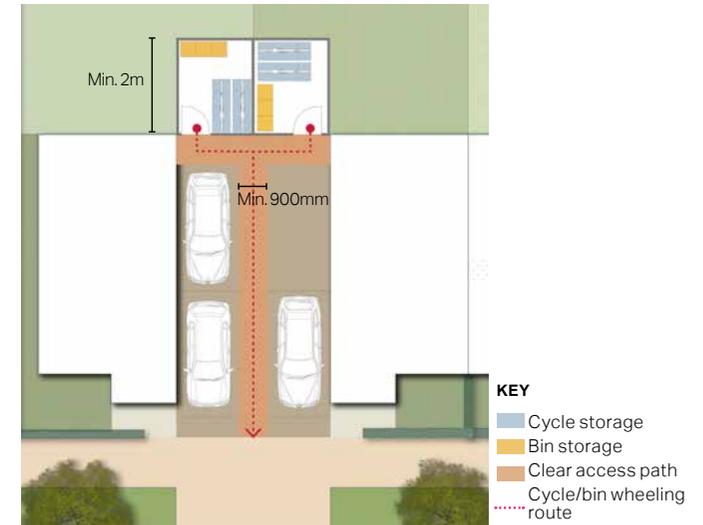


Figure 104: Indicative layout of a bicycle and bin storage areas at the back of semi-detached properties and their wheeling space and route.

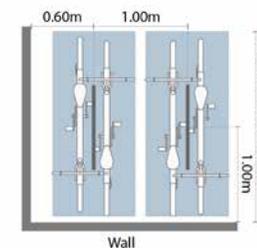


Figure 105: Secure covered cycle store for two cycle storage illustration.

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

Because the design guidelines of this chapter cannot cover all design eventualities, this section 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 taken into account the context and provided an adequate design solution.

Those questions are related to:

Street grid and layout

- Does it favour accessibility and connectivity over cul-de-sac models? If not, why?
- Do the new points of access and street layout have regard for all users of the development; in particular pedestrians, cyclists and those with disabilities?
- What are the essential characteristics of the existing street pattern; are these reflected in the proposal?
- How will the new design or extension integrate with the existing street arrangement?
- Are the new points of access appropriate in terms of patterns of movement?
- Do the points of access conform to the statutory technical requirements?

Gateway and access features

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

Buildings layout and grouping

- What are the typical groupings of buildings?
- How have the existing groupings been reflected in the proposal?
- Are proposed groups of buildings offering variety and texture to the local built environment?
- 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?
- If any of the buildings were to be heated by an individual air source heat pump (ASHP), is there space to site it within the property boundary without infringing on noise and visual requirements?
- 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?

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?

Green spaces, views and character

- What are the particular characteristics of this area which have been taken into account in the design; i.e. what are the landscape qualities of the area?
- Does the proposal maintain or enhance any identified views or views in general?
- How does the proposal affect the trees on or adjacent to the site?

- 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 affect the character of a rural location?
- How does the proposal impact on existing views which are important to the area and how are these views incorporated in the design?
- Can any new views be created?
- Is there adequate amenity space for the development?
- Does the new development respect and enhance existing amenity space?
- Have opportunities for enhancing existing amenity spaces been explored?

- Will any communal amenity space be created? If so, how this will be used by the new owners and how will it be managed?
- 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)?

Building line and boundary treatment

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

Building materials and surface treatment

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

Car parking solutions

- What parking solutions have been considered?
- Are the car spaces located and arranged in a way that is not dominant or detrimental to the sense of place?
- Has planting been considered to soften the presence of cars?
- Does the proposed car parking compromise the amenity of adjoining properties?
- Have the needs of wheelchair users been considered?
- 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?

Architectural details and contemporary design

- If the proposal is within a conservation area, how are the characteristics reflected in the design?
 - Is the proposal in harmony with the adjacent properties? This means that it follows the height massing and general proportions of adjacent buildings and how it takes cues from existing materials and other existing physical characteristics.
 - Does the proposal maintain or enhance the existing landscape features?
 - Has the local architectural character and precedent been demonstrated in the proposals?
 - If the proposal is a contemporary design, are the details and materials of a sufficiently high enough quality and does it relate specifically to the architectural characteristics and scale of the site?
- Is it possible to incorporate passive environmental design features such as larger roof overhangs, deeper window reveals and/or external louvres/shutters to provide shading in hotter months?
 - Can the building designs utilise thermal mass to minimise heat transfer and provide free cooling?
 - Can any external structures such as balconies be fixed to the outside of the building, as opposed to cantilevering through the building fabric to reduce thermal bridge?
 - If the proposal is a contemporary design, are the details and materials of a sufficiently high enough quality and does it relate specifically to the architectural characteristics and scale of the site?

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Applying
the design
guidance

04

4. Applying the design guidance

This section provides example design illustrations for some of the key items that are raised by the neighbourhood planning group.

4.1 Introduction

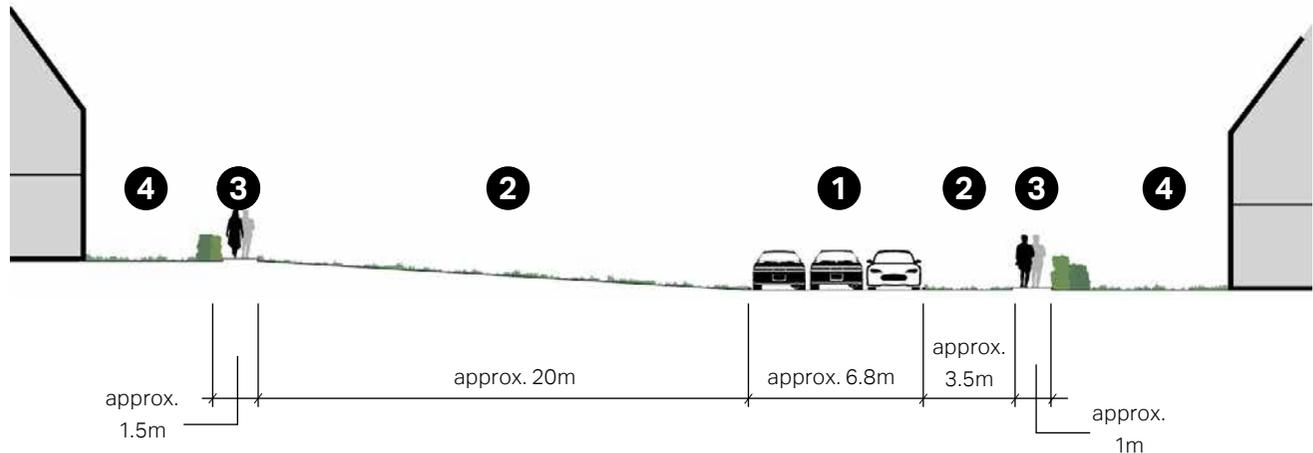
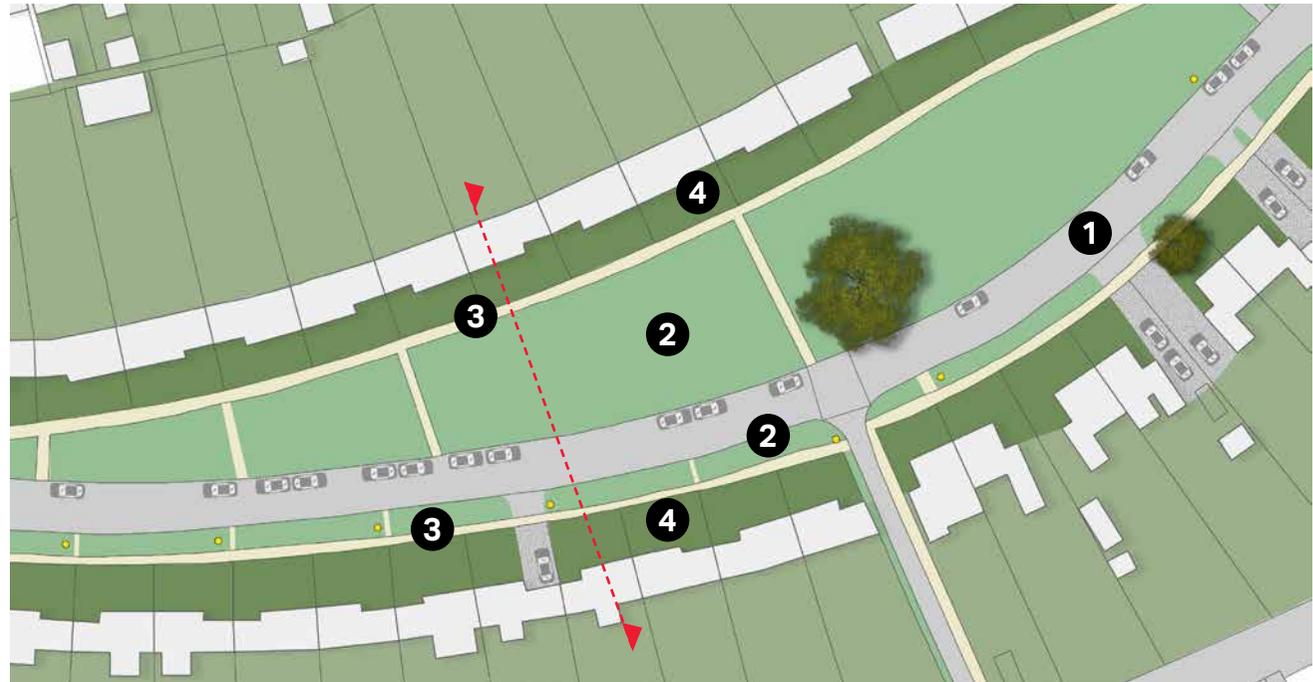
The example design illustrations presented on the next pages are:

- Design illustrations for street retrofitting to create green fingers and to introduce sustainable drainage systems; and
- Design illustration of a typical development layout.

4.2 Streets with grass verges

Some of the residential streets within Paddock Wood are lined up with grass verges. Some of these verges either accommodate a very small number of trees or no trees.

The plan and the cross-section opposite illustrates an existing street with grass verges which accommodates only one large tree.



1. Carriageway with on-street parking
2. Grass verges
3. Footpath
4. Private front gardens

Figure 106: Plan and cross-section to illustrate a local residential street with grass verges.

Greening existing verges

Depending on the buried utilities and other potential constraints, existing green verges can provide an opportunity accommodate new attenuation swales / basins and new street trees and plantation.

The plan and the cross-section opposite illustrates how existing verges can be retrofitted to accommodate dry or wet attenuation basins with plantations and street trees.

This type of retrofitting initiatives would bring a number of benefits including:

- Encouraging the preference of walking and cycling over traveling by car by providing attractive routes within the town and linkages to the countryside;
- Supporting mental health and well-being through providing greener streetscapes;
- Providing shade and cooling during extreme heat events;
- Contributing towards creation of biodiversity network and
- Managing surface water and minimise the risk of flooding.



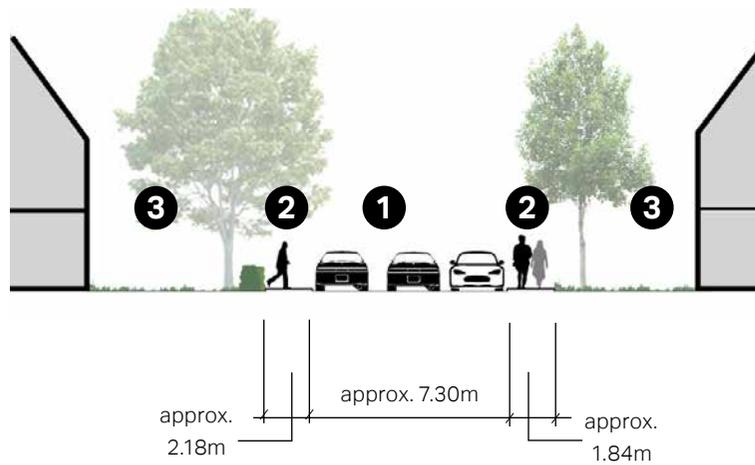
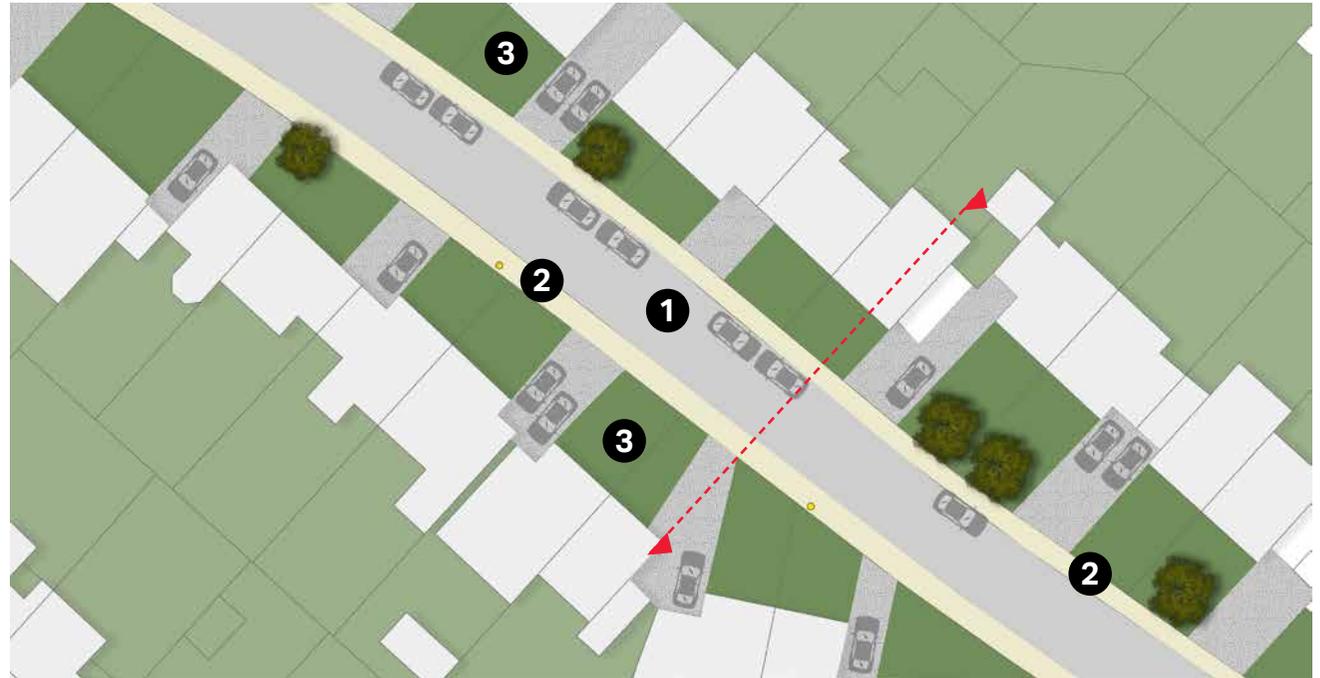
1. Carriageway with on-street parking
2. Grass verge with street trees
3. Grass verge with trees, plantation and surface water management basin
4. Footpath
5. Private front gardens

Figure 107: Plan and cross-section to illustrate proposals for greening existing verges.

4.3 Street without verges

Some of the existing streets within Paddock Wood do not accommodate green verges or street trees.

The plan and the cross-section opposite illustrates an existing street which does not accommodate street trees.



- 1. Carriageway with on-street parking
- 2. Footpath
- 3. Private front gardens (images above show existing trees only)

Figure 108: Plan and cross-section to illustrate a local residential street without verges.

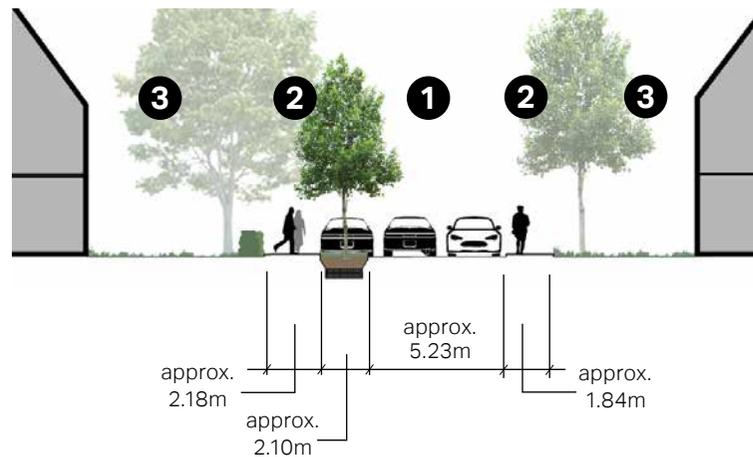
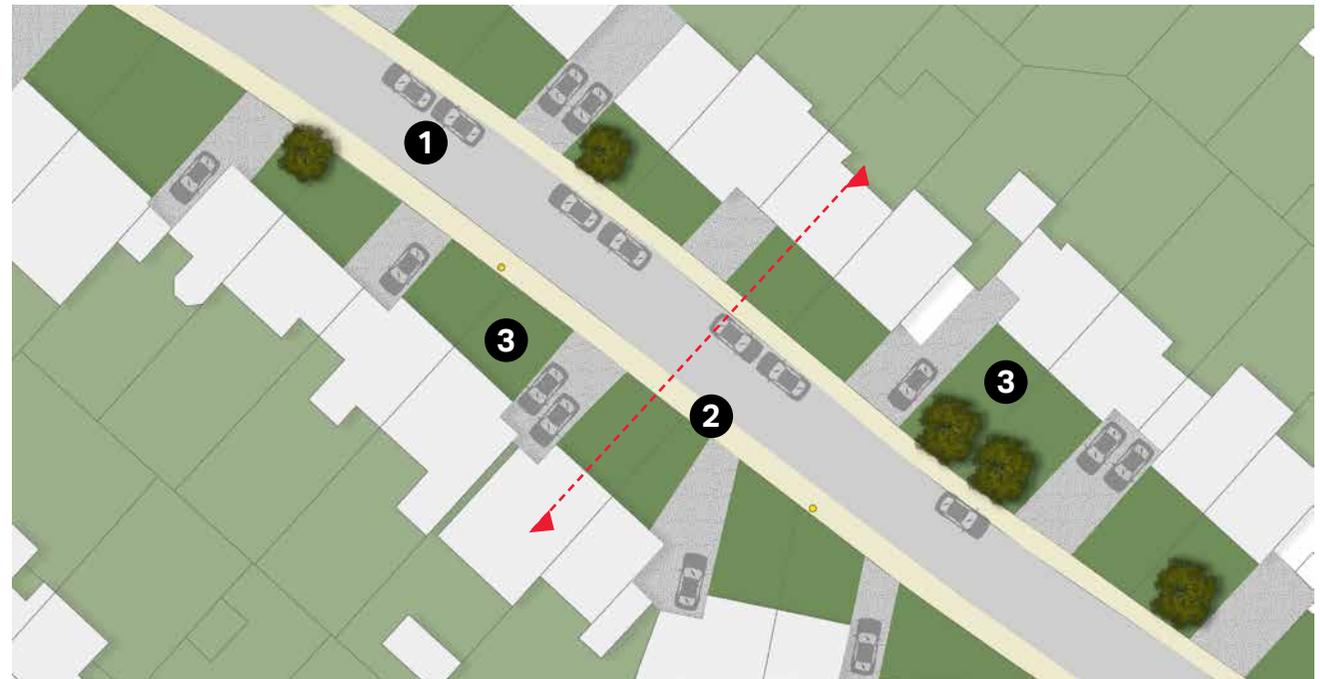
Greening existing streets

Depending on the buried utilities and other potential constraints, there could be potential opportunities to augment the existing streetscape by retrofitting street trees as well as bioretention drainage systems.

This retrofitting can be applied only at one side of the street or both depending on the geometry and dimensions of the street as well as the other potential constraints such as access to private drives. The example layout opposite illustrates bioretention tree pits being retrofitted at both sides of the road with staggered approach aiming to achieve minimum loss of street car parking spaces.

Similar to the earlier retrofitting example, this type of retrofitting initiatives would bring a number of benefits including:

- Encouraging the preference of walking and cycling over traveling by car by providing attractive routes within the town and linkages to the countryside;
- Supporting mental health and well-being through providing greener streetscapes;
- Providing shade and cooling during extreme heat events;
- Contributing towards creation of biodiversity network and
- Managing surface water and minimise the risk of flooding.



1. Carriageway with inset on-street parking and bioretention tree pits
2. Footpath
3. Private front gardens (images above show existing trees only)

Figure 109: Plan and cross-section to illustrate proposals for greening existing streets.

4.4 A typical layout example

The example development layout opposite illustrates some key elements that are relevant to the future growth that is defined by draft policy STR/PW1 as well as the initiatives that neighbourhood planning group raised at the meetings and workshop. The illustrated key elements as follows.

- 1 **COUNTRYSIDE EDGES:** All the settlement edges, as well as the countryside edges, should have continuous edge lanes (Code 4) avoiding cul-de-sacs. Edge lanes should prioritise pedestrians and cyclists and should be used by vehicles for access only purposes.

The use of detached and semi-detached houses with relatively larger footprints, lower heights (2 storey) and large front gardens would be the appropriate development form at countryside edges to allow softer transition between the countryside and the built up area.

- 2 **GREEN FINGERS:** Green fingers (Code 5) can be at various widths. The plan opposite illustrates a wide green finger (approximately 50m wide). They can accommodate flood attenuation features such as basins, ponds and swales (Code 7), pedestrian and cycle links, and recreation and play spaces.

Similar to countryside edges, the development along the green finger edges should have continuous edge lanes. The use of relatively denser and compact residential typologies including semi-detached houses, terraces and apartments would be the appropriate development forms at the green finger edges.

- 3 **DEVELOPMENT LAYOUT:** The example layout opposite illustrates the use of perimeter blocks including back to back housing block and blocks with mews and green courtyards (Code 10).

It also illustrates the use of variety house typologies including 2, 3, 4 and 5 bedroom houses and apartments within the range of 30 - 45 dwelling per hectare residential densities.

- 4 **SECONDARY STREET:** Secondary Streets (Code 4) to provide access between primary streets and neighbourhoods. The layout opposite illustrates a tree lined secondary street with green verges providing a sufficient soil volume to the street trees.

- 5 **GREEN LINKS:** Green links (Code 4) to provide pedestrian and cycle connections through the green fingers and provide access to the countryside.



Figure 110: Example development layout.

Next steps

05



5. Next steps

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

ACTORS	HOW THEY WILL USE THE DESIGN GUIDELINES
Applicants, developers, and landowners	As a guide to community and Local Planning Authority expectations on design, allowing a degree of certainty – they will be expected to follow the Guidelines as planning consent is sought.
Local Planning Authority	<p>As a reference point, embedded in policy, against which to assess planning applications.</p> <p>The Design Guidelines should be discussed with applicants during any pre-application discussions.</p>
Town 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

AECOM is built to deliver a better world. We design, build, finance and operate infrastructure assets for governments, businesses and organizations in more than 150 countries. As a fully integrated firm, we connect knowledge and experience across our global network of experts to help clients solve their most complex challenges. From high-performance buildings and infrastructure, to resilient communities and environments, to stable and secure nations, our work is transformative, differentiated and vital. A Fortune 500 firm, AECOM had revenue of approximately \$17.4 billion during fiscal year 2016. See how we deliver what others can only imagine at aecom.com and [@AECOM](https://twitter.com/AECOM).

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