MOVEMENT

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Introduction

Purpose
This chapter provides essential guidance for developers and designers planning and delivering street infrastructure in South West Rugby. Warwickshire County Council (WCC) has been a key stakeholder in the development of this work and the code promotes a people-centric approach to movement and street design. It aligns with placemaking principles, prioritising road safety, sustainable transport, and creating environments that enhance the quality of public spaces.

The code applies to:
- Highway infrastructure and streets to be adopted by WCC.
- Non-adopted elements, such as private drives, with recommendations to ensure consistency.

Developers must refer to this guidance in conjunction with:
- Warwickshire Design Guide (WDG)
- Manual for Streets 1 & 2 (MfS)
- Local Transport Note 1/20 (LTN1/20)
- National Model Design Code (NMDC)

Vision
The vision for South West Rugby's transport network is to create a low-carbon, resilient, and inclusive system that:
- Supports health, well-being, and quality of life.
- Promotes connectivity, accessibility, and sustainable mobility.
- Fosters a thriving economy through efficient movement networks.
- Enhances Rugby's unique natural and built environment

Structure
The Movement section contains the following information:
- Street network: characteristics, connectivity principles, and street hierarchy guidance.
- Movement framework: design of movement routes, including active travel, bus routes, and service corridors.
- Related movement guidance: parking, mobility hubs, emergency access, and refuse collection.

The Public Spaces section contains the following information:
- Street coding: specifications and design for various street types.

Also refer to:

Public spaces

RBC local plan policy: DS8, DS9, HS1, HS5, D1 + South West Rugby Masterplan SPD (2021, updated 2024)
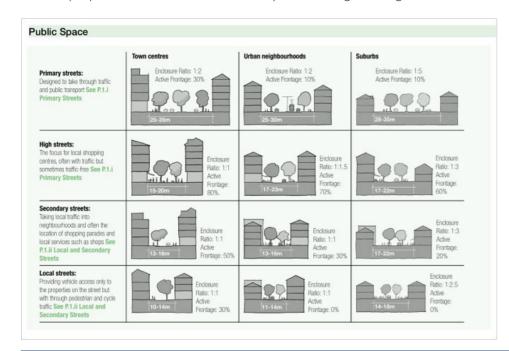
WCC policy: Warwickshire Design Guide

*plus others outlined above

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Street network

Street characteristics

The street network is the foundation of public life, supporting movement, placemaking, and access. According to the NMDC, a connected network of streets, public transport access, and prioritization of walking and cycling are essential for all developments.

MO.01 All schemes **must** contribute to an integrated, walkable, and safe street network.

MO.02 Streets **must** balance their link function (movement of people and goods) with their place function (public spaces supporting social and economic activities).

MO.03 Development **must** reflect and enhance the character of the street it occupies. The street's character will vary based on its hierarchy and local context.

MO.04 High-quality public spaces **must** have thoughtful street design and well-proportioned enclosures formed by surrounding buildings.

Connected network

A well-connected street network forms the circulatory system of any settlement, determining how safely and efficiently people and goods move within and beyond a development.

MO.05 Long-term framework: The street network **must** provide a durable and adaptable structure, often outlasting the buildings it serves.

MO.06 Choice and variety: Streets **must** offer direct, efficient routes to make walking and cycling more attractive while promoting activity and safety.

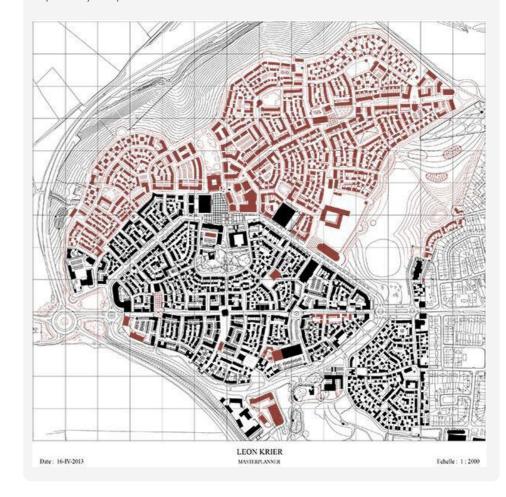**MO.07** Controlled permeability: Cul-de-sacs **should** be limited to tertiary streets. Measures like modal filters **should** be utilised to restrict vehicular through-traffic while maintaining access for pedestrians and cyclists.

MO.08 Safety and security: Designers **must** consider passive surveillance, good lighting, and active street-level uses to ensure safety, particularly in areas with high footfall.

Public transport integration

MO.09 Access to public transport **must** be prioritised to reduce reliance on private cars.

MO.10 Developments **must** provide connected networks with safe, convenient, and accessible links to transport hubs, enabling residents to reach schools, town centres, and employment areas efficiently.

RBC local plan policy: HS1+ South West Rugby Masterplan SPD (2021, updated 2024)

Warwickshire Design Guide

Case study: Poundbury, Dorchester

Poundbury exemplifies a well considered street network. It includes three distinct east west routes: a distributor greenway for through traffic, an urban street serving the main centre, and a pedestrian friendly ceremonial spine. Smaller, interconnected streets provide continuity and ease of movement, especially for pedestrians.

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Street network - User requirements

Accessibility and movement

MO.11 Well-designed streets **must** be accessible and inclusive, catering to all users regardless of age, ability, or mode of travel.

MO.12 Active travel: Walking and cycling **should** be prioritised as primary modes for local journeys under five miles.

MO.13 User hierarchy: Streets **must** consider pedestrians and cyclists first, followed by public transport, servicing vehicles, and finally private vehicles.

MO.14 Accessibility **must** be a golden thread throughout the design process, integrating features like adequate footway widths, inclusive crossings, and careful placement of street furniture.

Walking and pedestrian needs

MO.15 Footways **must** be at least 2 meters wide, free from obstructions, and separated from carriageways with conventional kerbs.

MO.16 Crossovers **must** be minimal to avoid challenges for wheelchair users and individuals with mobility impairments.

MO.17 Streets near schools, shops, and community hubs **must** cater to vulnerable users with enhanced safety measures, such as access restriction, traffic management, parking control and active travel infrastructure.

Cycling requirements

MO.18 Developers **must** ensure:

- Safe, direct, and well-lit cycle routes connecting neighbourhoods to town centres, rail stations, and other key destinations.
- The adoption of cycle-friendly streets within developments. Where traffic speeds are higher, segregated cycle lanes designed to LTN1/20 standards may be required.

Bus transit

MO.19 Developments **must** provide bus stops within 400 meters of all dwellings (distance considering route options and not the distance 'as the crow flies').

MO.20 Bus stops **should** include shelters, seating, real-time information displays, and integration with mobility hubs.

Servicing and emergency access

MO.21 Developers **must** ensure efficient servicing, including HGV access and refuse collection.

MO.22 Emergency services **must** have unobstructed access to all properties.

Private vehicles

MO.23 Streets **should** strike a balance between promoting sustainable transport and managing vehicle access.

MO.24 Modal filters and traffic-calming measures **must** reduce car dominance without compromising necessary access.

Junction design

MO.25 Junctions **must** prioritise safety, convenience, and accessibility for all users.

MO.26 T-junctions **should** be the default intersection type, while roundabouts and traffic signals **should** be limited to primary and secondary streets.

Crossings

MO.27 Formal crossings **must** align with pedestrian and cyclist desire lines to reduce risks and encourage use.

MO.28 Drop kerb crossings **should** be placed every 100 meters to improve pedestrian permeability.

Infographic illustrating sustainable transport elemetns start at home and local street

Nansledan Newquay - walking comfort at side streets

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Street network

Street hierarchy
The design of a street network plays a fundamental role in shaping how streets are used, perceived, and experienced. Streets perform different roles depending on their movement function (the volume and type of users they serve), place function (how they support social and economic activity), and the surrounding context. These roles are further influenced by built form, land uses, and the design of the street space, including natural features, landscaping, lighting, and wayfinding elements.

Street categorisation
To create clarity and consistency in design, this code categorizes streets into defined street types, each with a distinct function that reflects both movement and place priorities. Street type classification must consider the area type, the range of modes it serves (walking, cycling, public transport, and motor vehicles), and its specific design requirements.

The hierarchy aligns with the Manual for Streets (MfS), which defines common street types and functions. These include multifunctional streets and spaces, arterial routes, high streets, boulevards, and residential streets. Each type has unique characteristics tailored to its role in the network. The street hierarchy described below integrates these established types with additional classifications to meet the specific needs of South West Rugby.

Junctions and Intersections
MO.29 T-junctions **must** form most intersections within the development to maximise safety and clarity for users.

MO.30 Crossroads generally **should** not be used due to safety concerns, as raised by WCC.

MO.31 Higher-order junctions, such as roundabouts or traffic signals, **must** be reserved for primary and secondary streets only, ensuring that traffic flow and safety considerations are balanced at key intersections.

Primary Street (Cat 3A)

Role
Provides high-capacity links to urban centres and the wider strategic road network.

Characteristics
- Limited or no frontage access to prioritize movement efficiency.
- Designed to accommodate higher traffic volumes, including public transport.

Secondary Street (Cat 3b)

Role
Acts as the main local connector, providing essential links between primary streets and tertiary streets. These streets form the backbone of SW Rugby's development.

Characteristics
- Mixed-traffic design accommodating buses, HGVs, and general traffic.
- Frequent junctions with tertiary streets to improve connectivity.
- Streets must be continuous and connected at a minimum of two points to the external highway network to provide flexibility in traffic routing.
- All developments must ensure proximity to secondary streets, enabling 400-meter maximum walking distance to bus stops for all dwellings.

Tertiary Street 1 (Cat 4a)

Role
Provides local access to residential properties and links primary or secondary streets.

Characteristics
- Direct frontage access to properties.
- Frequent junctions to support permeability.
- These streets should connect to other streets at both ends wherever feasible.
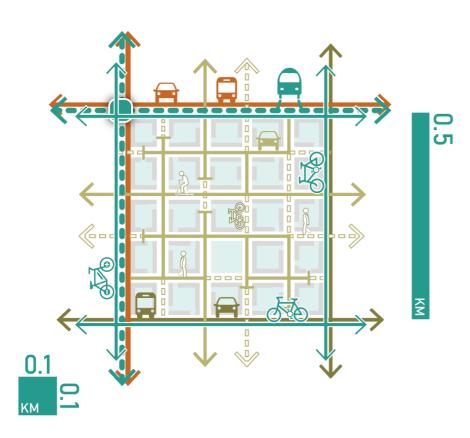

Tertiary Street 2 (Cat 4b)

Role
Smaller-scale streets, typically serving as cul-de-sacs or minor local access routes.

Characteristics
- Limited connectivity, designed for localized movement and access.

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Street network - Principles

The following principles underpin the development of a well-structured, efficient, and accessible street network for South West Rugby.

MO.32 Developers **must** adhere to these principles in the design and implementation of street layouts:

Infographic showing principles of modal networks (eg fine grain walking, cycle anywhere via model filters, structuring spines streets & tertiaries creating blocks)

WALKABILITY	DIRECT CYCLING	SPINE STREETS	SUPERBLOCK STRUCTURE	DEVELOPMENT PARCELS
Ensure a dense and continuous network of pedestrian routes, enabling walking as a viable and attractive mode of travel throughout the development. Incorporate frequent crossing points and minimize barriers to movement.	Plan for radial cycle routes and greenways that connect key destinations, such as the development centre, from multiple directions. Actively minimize severance caused by major roads by using modal filters or breaking up vehicular continuity around greenways to prioritize cycling.	Structure the development around secondary streets, ensuring efficient bus access. All dwellings must be located within 400 meters of a secondary street to guarantee public transport accessibility. Where this distance cannot be met, additional secondary streets must be incorporated.	Use tertiary streets (Types 1 and 2) to define larger superblocks, balancing connectivity with efficient land use. Superblocks should allow for local permeability while reducing unnecessary vehicular through-traffic.	Complete the street network by subdividing superblocks into smaller development parcels using tertiary Type 2 streets. Parcels should typically have depths of 60 to 80 meters, ensuring efficient use of space and logical layouts for access and frontage

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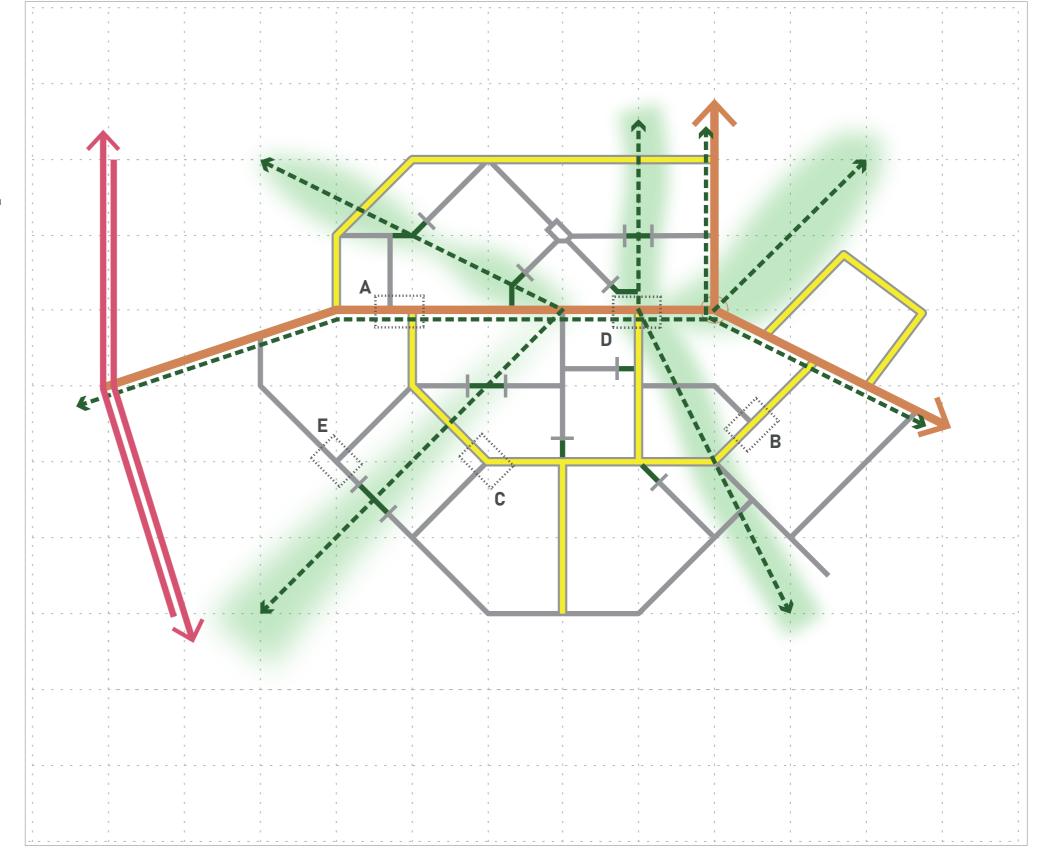## Street network - Case study network example

An idealised street network for South West Rugby demonstrates these principles in action:
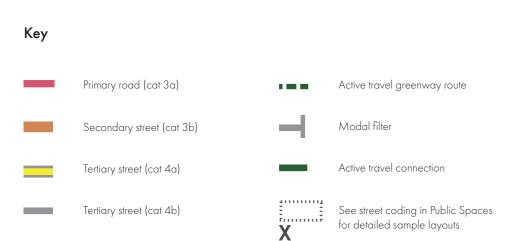
Walk-anywhere approach: A grid-like pattern of walking routes ensures continuous, safe, and convenient pedestrian access throughout the development.

Radial cycling routes: Dedicated cycle greenways link neighbourhoods to central areas while avoiding severance by prioritising crossings and modal filters.

Secondary spine streets: The network prioritises public transport by using secondary streets to create direct, efficient routes for buses and ensuring maximum walking distances to stops are within 400 meters (distance considering route options and not the distance 'as the crow flies').

Superblocks and parcels: Larger superblocks are structured with tertiary T1 streets to create manageable, walkable neighbourhoods. Smaller Tertiary Type 2 streets define development parcels within the superblocks, ensuring effective land use.

Key

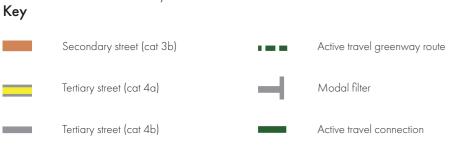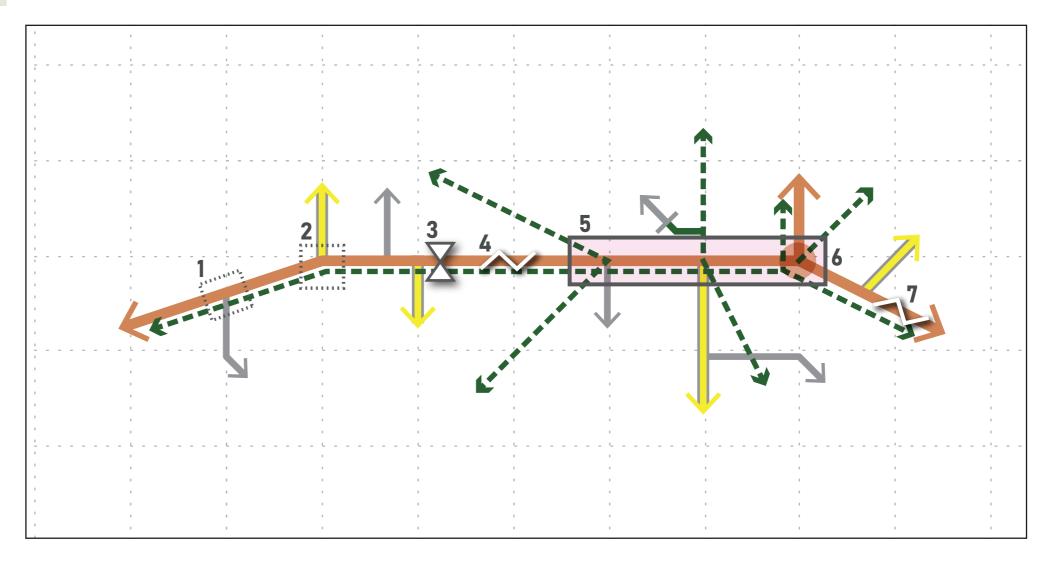|	
▬▬ Primary road (cat 3a)	▪▪▪ Active travel greenway route
▬▬ Secondary street (cat 3b)	┤├ Modal filter
▬▬ Tertiary street (cat 4a)	▬ Active travel connection
▬▬ Tertiary street (cat 4b)	⬚ See street coding in Public Spaces for detailed sample layouts
	X

Street network - Network speed reduction

Secondary Street Corridor
Managing traffic speeds is a critical design consideration for fostering safe, accessible, and functional environments.

MO.33 Designers **must** address this during the street network planning stages, applying diverse techniques to ensure traffic flow aligns with the network's intended use—typically 20 mph for general secondary streets or 30 mph for streets with bus routes.

MO.34 For Secondary (type 3B) streets, the following strategies exemplify effective methods to manage speed while enhancing urban design and **should** be implemented:

1. Gateway junctions: Leverage junction types and the strategic placement of landmark buildings to encourage reduced speeds by signalling transitions in the street hierarchy.

2. Change of direction: Integrate junctions or bends that naturally slow vehicles while emphasizing urban form to reinforce the reduced-speed environment.

3. Priority give-and-take: Implement priority working to alternate traffic flows, favouring outbound traffic while creating localised resistance for inbound movement.

4. Chicanes: Use horizontal deflections or staggered lanes to slow traffic effectively while maintaining visual interest and functional connectivity.

5. Urban context: Embed mixed-use, higher-density developments at central nodes to emphasise pedestrian priority and encourage slower vehicular speeds.

6. Dutch-style roundabouts: Introduce tight entry and exit geometries at roundabouts to reduce speeds while improving safety and efficiency for all users.

7. Gateway chicanes: Repeated chicanes can create a rhythmic speed control effect in key areas.

Key

▬ Secondary street (cat 3b)		┅ Active travel greenway route	
▬ Tertiary street (cat 4a)		┤ Modal filter	
▬ Tertiary street (cat 4b)		▬ Active travel connection	

Hennef Germany - flush median used on main street

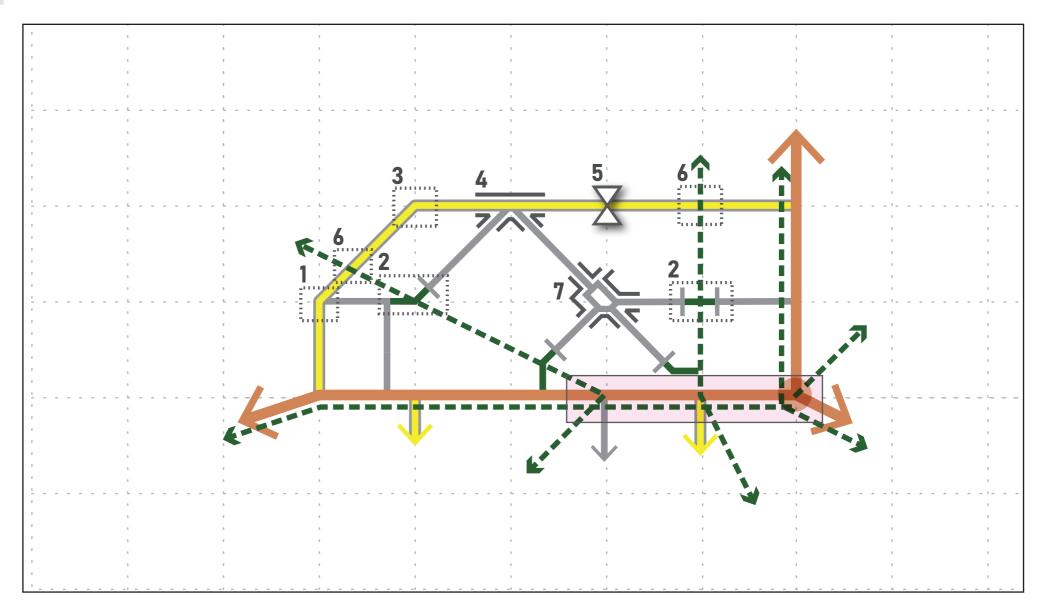Nansledan Newquay - change of street alignment with island to slow traffic

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Street network - Tertiary street networks

For tertiary (types 4A and 4B) streets, a similar suite of strategies is recommended, with adaptations suited to the scale and context of these smaller streets.

MO.35 The following techniques ensure the streets support their roles in accessibility and placemaking and **should** be utilised:

1. Change of direction/junctions: Utilise tight corner radii and limited visibility to slow vehicles and enhance pedestrian safety.

2. Modal filters: Disrupt vehicular continuity by allowing access only for pedestrians, cyclists, and other active modes, effectively creating low-traffic zones.

3. Tight corner radius: Use reduced corner radii to enforce slower speeds while maintaining connectivity and a pedestrian-friendly scale.

4. Urban form: Cluster junctions to encourage slower speeds and create visual interest, integrating street furniture and landscaping to enhance placemaking.

5. Pinch points: Introduce kerb buildouts or strategically placed parking bays to narrow lanes, creating informal traffic calming while supporting street character.

6. Cycle crossings/pinches: Highlight crossings with textured surfaces or colour changes, ensuring active travel modes are clearly prioritised.

7. Urban squares: Incorporate multifunctional public spaces within street layouts to naturally calm traffic while fostering community interaction.

Key

Secondary street (cat 3b)	
Tertiary street (cat 4a)	
Tertiary street (cat 4b)	

Active travel greenway route	
Modal filter	
Active travel connection	

Sherford Plymouth - using urban form and public space to manage traffic speed

Sherford Plymouth - using pinch points with parking to manage traffic speed on straight streets

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Street network

This section outlines the movement framework for the design code, building on the principles established in the preceding sections.

MO.36 Developers **must** adhere to this principal movement framework as a mandatory guideline. While some flexibility in precise alignments is permitted, the fundamental principles and objectives of the framework must be strictly maintained.

The movement framework incorporates a series of modal routes to be implemented through adopted streets, bridleways, and footpaths. Where routes traverse multiple landholdings or include existing highway land, developers are responsible for coordinating the delivery of the required infrastructure.

MO.37 The primary street network consists of primary, secondary, and tertiary 1 streets. Developers **must** follow the prescribed nature and locations of these streets, with a degree of design tolerance to accommodate site-specific needs. The finer tertiary 2 street network is not explicitly coded but should be designed in alignment with the street network principles outlined earlier.
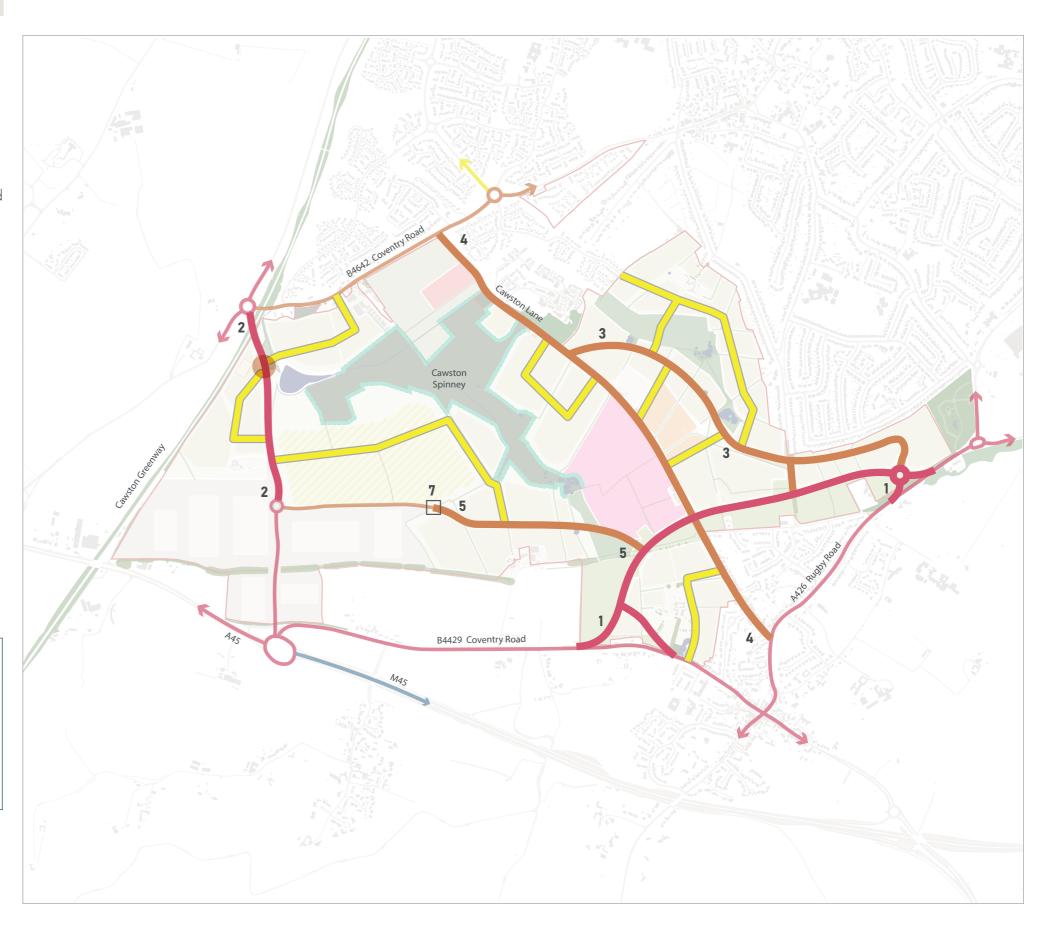Key routes:
- Route 1: New primary street (Homestead Link Road)
- Route 2: New primary street (Potsford Dam Link Road)
- Route 3: New secondary street (Community Spine)
- Route 4: Upgrade of Cawston Lane to secondary street
- Route 5: New secondary street (Sustainable Transport Corridor)
- 7: Modal filter to sustainable transport corridor

MO.38 These streets **must** establish at least two connections to the main street network, forming the backbone for a future grid of tertiary 2 streets (not depicted in the framework).

Also refer to:

Public spaces

RBC local plan policy: DS9, D1 + South West Rugby Masterplan SPD (2021, updated 2024)

Warwickshire Design Guide

Key

Existing

———	Primary (motorway)
———	Primary
———	Secondary
———	Tertiary

Proposed or existing upgraded

———	Primary
———	Secondary
———	Tertiary

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Active travel framework

The active travel framework aims to create a dense, connected network to support internal active mode movements and facilitate wider connectivity to external destinations. This framework prioritises a segregated walking and cycling network for safety and accessibility.
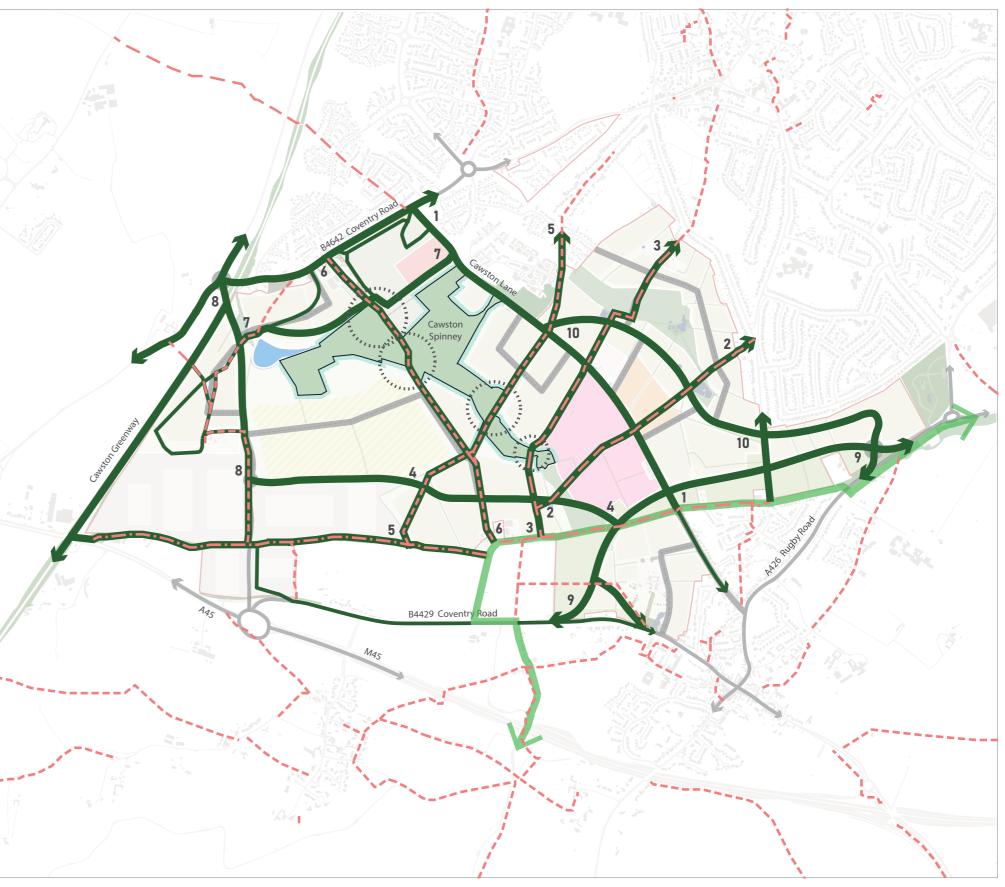
Primary active travel routes:

1. Cawston Lane upgrade: Transition to secondary street with active travel accommodations.
2. Existing footpath upgrade: Conversion to active-only street.
3. Existing bridleway upgrade: Conversion to active-only street.
4. New Sustainable Transport Corridor: A secondary street designed for active travel and public transport.
5. Existing footpath upgrade: Conversion to active-only route/street.
6. Existing footpath upgrade: Conversion to active-only route/street.
7. New active-only route: Leading to the edge of the woodland.
8. New link (primary street): Potsford Dam Link Road.
9. New link (primary street): Homestead Link Road.
10. New link (secondary street): Community Spine.

This framework emphasises integration with key external connections, enabling efficient movement for pedestrians and cyclists.

Also refer to:

Public spaces
Built form

RBC local plan policy: HS1+ South West Rugby Masterplan SPD (2021, updated 2024)

Warwickshire Design Guide

Key

Existing PRoW

- – – – Footpath
- – – Bridleway
- –·–·– Restricted byway

— National Cycle Route 41
— Proposed strategic active travel network
— Additional LCWIP proposals
⊙ Improved conection through Cawston Spinney/woodland

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Bus + HGV network

The movement framework accommodates buses and HGVs for local access on primary and secondary streets. Tertiary streets are generally not designed to support HGV traffic, except for refuse collection vehicles and emergency services.
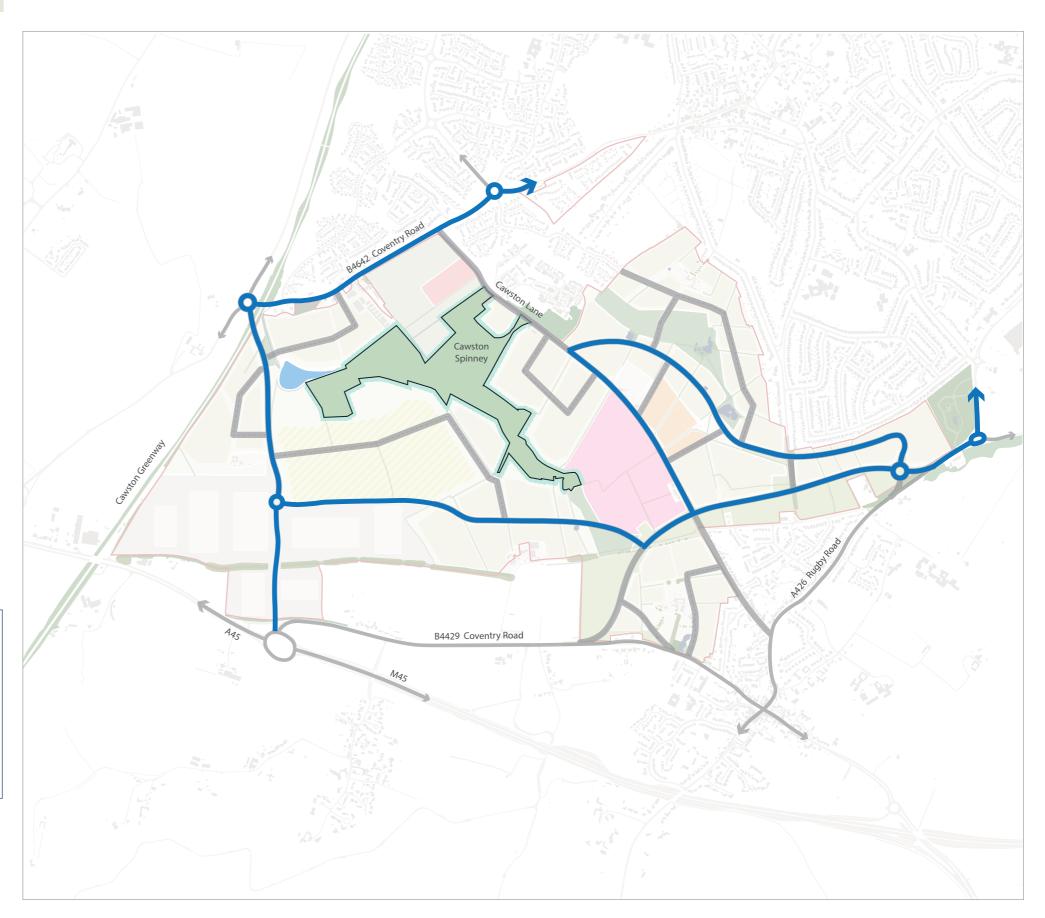
Also refer to:

Public spaces

RBC local plan policy: DS9, D1 + South West Rugby Masterplan SPD (2021, updated 2024)

Warwickshire Design Guide

Key

━━━ Primary bus/HGV network

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Related movement considerations

Mobility hub

The delivery of sustainable transport infrastructure will be critical to the success and sustainability of the new community at SW Rugby.

MO.33 Mobility hubs must provide a choice of sustainable transport modes and **should** make it easy to switch between those modes.

MO.34 Users must be able to arrive by walking, wheeling, or cycling and **should** have seamless access to the available facilities or transport options.

MO.35 A primary community mobility hub **must** be located in the local centre and should be supplemented by smaller 'mini mobility hubs' at key nodes, including employment locations and all bus stops.

MO.36 Mobility hubs **must** be accessible, visible, and easy to navigate through good public realm design.

MO.37 The design **must** contribute positively to the surrounding area with high-quality, distinctive architecture and a strong focus on community placemaking.

MO.38 Mini mobility hubs **must** include:
- Bus waiting environments with real-time information where the hub is co-located with a bus stop.
- Cycle parking.
- Car club vehicle(s) in designated on-street bays.
- A meeting point with seating and enhanced public realm features.

MO.39 The central mobility hub at the local centre **must** conform to the following principles:
- Bus integration, including a bus interchange.
- Neighbourhood car club.
- Cycle infrastructure for both short and long-distance journeys, including electric and cargo bike hire.
- Car park integration with EV charging facilities.
- Secure and covered cycle parking, accessible 24/7.
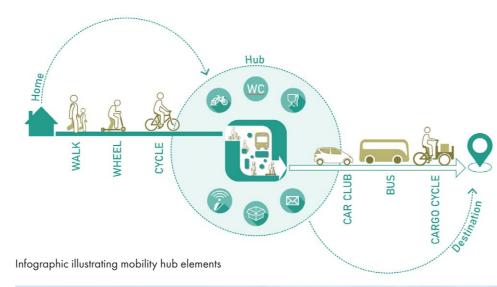
Also refer to:

Public spaces
Built form
Homes + buildings

RBC local plan policy: DS8, DS9, HS1, D1, D2 + South West Rugby Masterplan SPD (2021, updated 2024)

Warwickshire Design Guide

MO.40 Additional features **could** include:
- A café to encourage activity and provide natural surveillance.
- WC facilities.
- Cycle maintenance stations.
- A parcel delivery hub for drop-off and collection.
- Real-time mobility information through smart screens and QR code downloads.
- Design based on 'Secure by Design' principles while maintaining placemaking and inclusivity.

Infographic illustrating mobility hub elements

Mobility hub (CGI) in town square setting

Cycle parking

MO.41 Cycle parking **must** be provided close to homes and buildings, ensuring convenience and security.

MO.42 It **must** be covered and accessible, encouraging use regardless of weather conditions.

MO.43 Cycle parking **must** be more convenient than on-plot or off-plot car parking.

MO.44 Secure cycle enclosures **should** be located at front entrances or side access points.

MO.45 Enclosures **must** accommodate various cycle sizes and include power for electric bike charging.

MO.46 Visitor and staff cycle parking **must** be provided at key nodes, using Sheffield-style cycle stands.

Eddington Cambridge - mobility hub bike store

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Parking

MO.47 Car parking **must** be designed to support placemaking, ensuring that it does not dominate the local environment.

MO.48 Well considered parking **should** be convenient, safe, and attractive, integrating seamlessly into streets, blocks, and plots while providing access to EV charging points.

MO.49 Parking standards are set out in the Rugby District Council Local Plan and **should** allow for both allocated and unallocated residential parking solutions. This flexibility could enable more people focused design approaches instead of prioritizing vehicle storage.

Unallocated residential parking
MO.50 This **could** provide an efficient way to accommodate vehicles, adjusting for the average rather than maximum car ownership.

MO.51 In some development areas, all parking needs **could** be met in this way.

Allocated residential parking
MO.52 This **must** be accommodated on plot or in designated private parking courts or car barns.

Non-residential parking
MO.53 This **should** be integrated into the built form where possible, such as in semi basements or decks. Surface level parking must be positioned towards the rear of plots, away from the main street frontage, with landscaping used to reduce visual impact.

Nansledan, Newquay - employment hub landscaped car park

Parking types
MO.54 Developers **should** adopt parking solutions appropriate for the site and there **should** be a mix of approaches included to avoid dominance of one type, including:

On Street Parking
MO.55 This **must** be in designated bays interspersed with planting and street trees.

MO.56 Perpendicular layouts **could** be considered where street width allows.

MO.57 Bays **should** be at least 6m long and 2.5m wide on secondary streets, while tertiary streets should allow for 6m x 2.0m bays.

Parking Courts
MO.58 These **must** be overlooked for safety, **should** not exceed twelve spaces, and **should** incorporate green infrastructure.

MO.59 Front parking courts **should** only be used on Tertiary T2 streets and must include street furniture and soft landscaping.

Sherford Plymouth - use of inset parking with trees

Nansledan Newquay - parking court with EV charging

On-plot parking

MO.60 At the side of the property **must** provide natural surveillance and be long enough to fit a car behind the building line.

MO.61 At the front of the property **must** be set back at least 6m from the pavement, with screening through hedges or bin stores.

MO.62 In the rear garden **could** be appropriate if well lit, overlooked, and does not impact quality of life.

MO.63 Integral garages **should** be designed carefully to avoid dominating facades.

Kings Worthy - use of double garages as parking colutions in street scene

MOVEMENT

Related movement considerations

Emergency services

MO.64 All developments **must** ensure full accessibility for emergency vehicles.

MO.65 Developments with limited vehicle access points **must** account for alternative routes to ensure continued access if a road is blocked.

Key requirements include:

MO.66 A minimum carriageway width of 3.7m between kerbs **must** be maintained for fire service vehicles.

MO.67 Fire service vehicles **must** be able to get within 45m of all residential property doors.

MO.68 Fire service vehicles **must** not be required to reverse more than 20m.

MO.69 These requirements **must** align with guidance in the Warwickshire Design Guide, Part 3.

Refuse & recycling collection

MO.70 Developers **must** incorporate effective refuse collection strategies, ensuring accessibility and integration with the public realm.

MO.71 Detached/semi-detached housing: bins **must** be placed to the side or rear of properties.

MO.72 Terraced housing: collection **must** be from bin stores to the front of the property.

MO.73 Communal bin stores: these **must** be integrated into building footprints with rear access and designed to avoid blank facades.

MO.74 Layout considerations: tertiary streets **must** be designed in service loops to allow efficient refuse collection.

MO.75 Collection Points: al dwellings **must** be within 25m of an adopted road for refuse collection.

Highway adoption

MO.76 All primary, secondary, and most tertiary streets (T1/2) **should** be adopted by Warwickshire County Council as the Highway Authority.

MO.77 Industrial estate roads could remain private with appropriate public transport and public rights-of-way agreements.

MO.78 The adoption process **must** comply with:
- Warwickshire Design Guide standards.
- Section 38 Agreements under the Highways Act 1980.
- Local authority procedural requirements for adoption.

The Warwickshire Design Guide provides further details on technical and procedural aspects of highway adoption.

Also refer to:

Public spaces
Built form
Homes + buildings

RBC local plan policy: DS8, DS9, HS1, D1, D2 + South West Rugby Masterplan SPD (2021, updated 2024)

Warwickshire Design Guide

Kings Worthy - well-designed bin store

Nansledan Newquay - adopted street