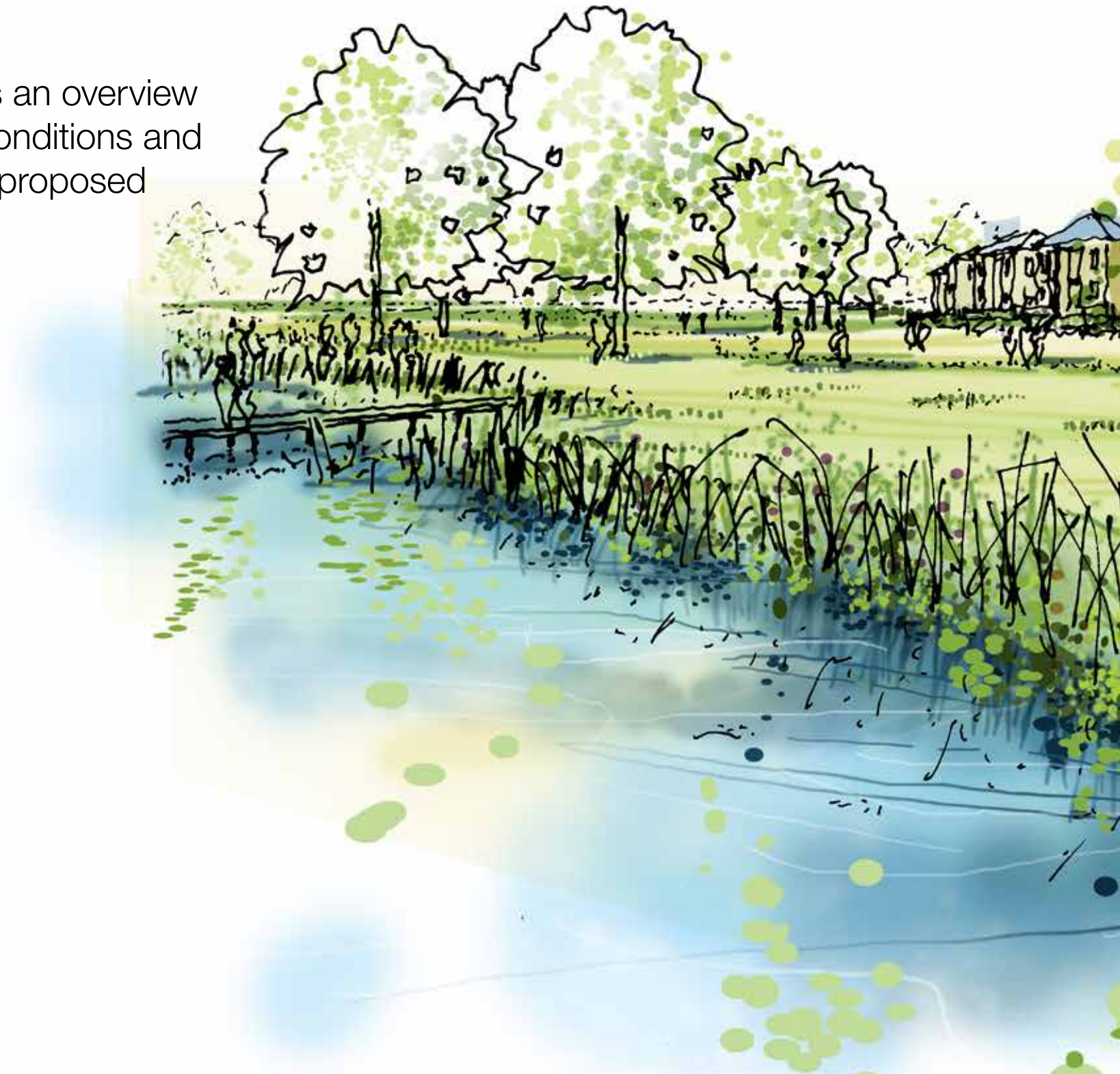
PART 03

Phase 1 Primary Infrastructure coding

5. PHASE 1

This section provides an overview of the Phase 1 site conditions and the objectives of the proposed development.



5.1 Phase 1 site and context

The 122-hectare site is broadly located to the north east of Longstanton, immediately to the west of the Cambridgeshire Guided Busway (CGB). It is approximately 10km to the north west of Cambridge.

The site comprises two separate areas, the 97-hectare primary development site, which is the focus of this design code, and 25 hectares of land identified for the provision of flood attenuation ponds adjacent to the B1050 Hatton's Road to the south west of Longstanton.

The primary development site comprises the former Longstanton golf club and agricultural fields. It is bordered to the north and east by the Longstanton Park and Ride (P&R) and the route of the CGB, beyond which are fields. To the south it is bounded by the remainder of the wider Northstowe site, including an area of fields to the north of Rampton Road, Rampton Drift and the former RAF Oakington airfield and Oakington Barracks. The village of Longstanton forms the western site boundary, with Longstanton conservation area located approximately 250m to the south west of the site. Existing agricultural land to the north west of the site is identified to form part of the wider Northstowe development.

The site is ideally located to promote sustainable modes of travel, the CGB / P&R is located immediately to the north of the site, with the CGB providing fast and reliable travel from Huntingdon (to the north) to Trumpington (to the south) via Cambridge. All services stop at the P&R with services approximately every 10 minutes. All new residents of the development will initially be within 1km of the P&R. In future they will be much closer to stops on the completed dedicated busway through the site.

There are three public rights of way in the western part of the site, providing links to Longstanton, and along the south eastern edge of the site (linking to Rampton to the east).

Future residents of the development will benefit from good pedestrian and cycle links into and through the site, linking existing public rights of way and creating permeable and safe access.

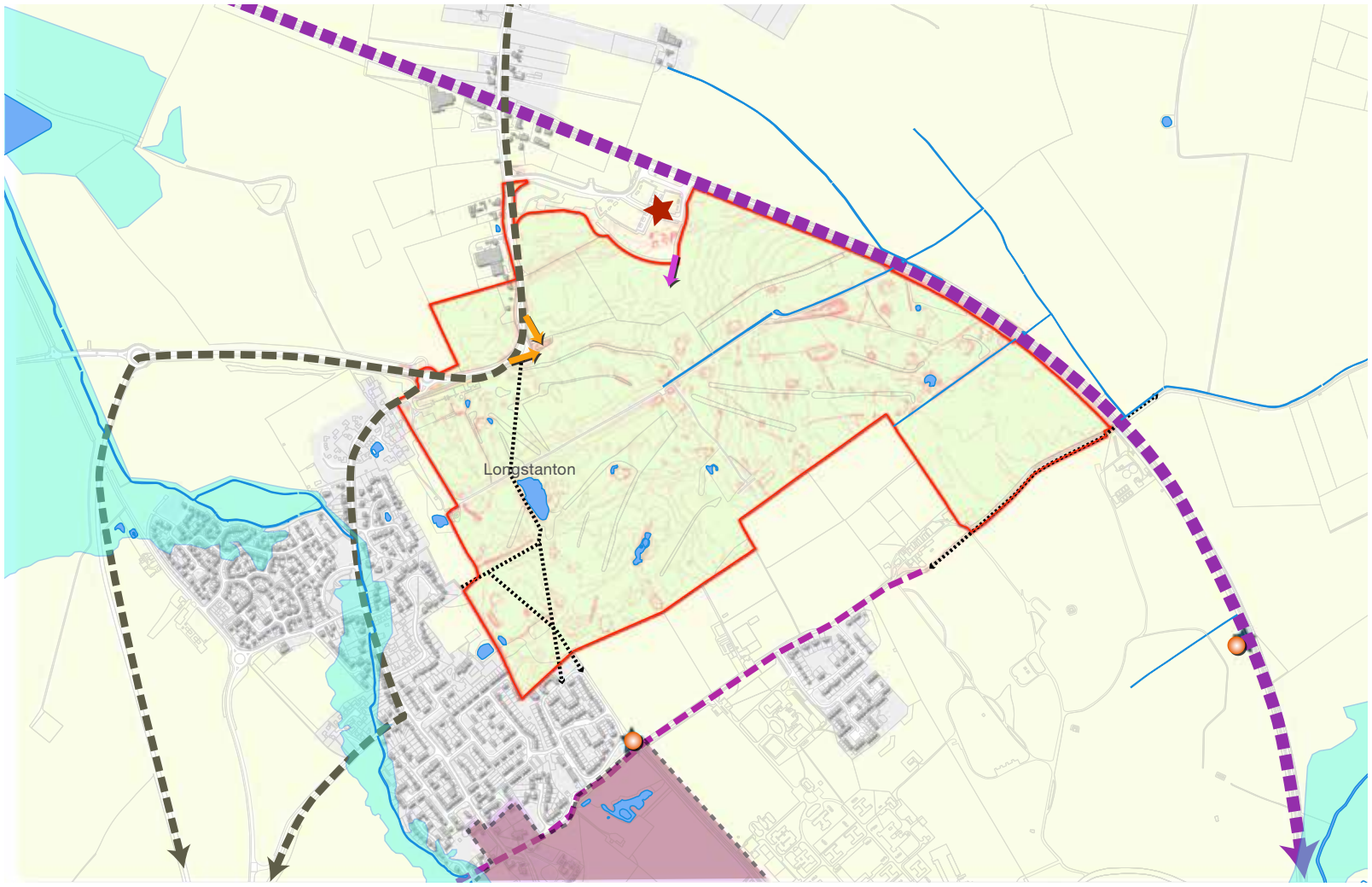
Kingfisher pond - located in western edge of the site

Aerial view from circa 2007 showing the site boundary

View to All Saints church from south west corner of the site

Cambridgeshire Guided Busway on east edge of site

All Saints church, Longstanton



Cambridgeshire Guided Busway / National cycle route no 51
Existing main road
Local Road
Rights of way and byway
Existing water ditches and ponds
Existing 1 in 100 years flood plain
Conservation area
Longstanton Park & Ride
Access to future busway connection
Access points
Listed structure – Oakington pill boxes

Figure 5.1 Site constraints plan from DAS

5.2 Phase 1 vision

Delivering a sustainable new community at Northstowe

The Phase 1 master plan is based on a series of design principles which aim to ensure that a vibrant new community will flourish at Northstowe. It seeks to create an inspiring place to live, that is harmonious with its surroundings and that is flexible enough to accommodate both the present and the future needs of the community.

Importantly, ensuring Phase 1 itself creates a sustainable mixed-use community has been central to the key design principles of the master plan.

Design principles

- A legible network of streets encouraging travel by bus, bike or foot will be provided
- Streets must not become overun with cars. Sufficient parking must be provided to suit the size and type of dwelling. On plot parking shall be the preferred option
- A development form should follow the characteristic of Cambridgeshire towns
- A self contained community will have a vibrant local centre and recreational facilities
- Water will be a defining feature
- A strong green framework will be provided through green corridors connecting the development with the water park on the western edge and sports areas in the western park.
- The primary school will be at the heart of the development
- Walkable neighbourhoods and direct cycle routs will encourage an active lifestyle and healthy living
- The new development will be designed as a high quality settlement to address climate change through low carbon living

1

ALLOTMENTS
An area for allotments and community orchard is provided. A large area is located to the west with additional community gardens provided within open space throughout the development making them easily accessible to all

2

SPORTS HUB
The sports hub and pitches allow for an active lifestyle and healthy living at Northstowe whilst providing a green buffer to Longstanton

3

LOCAL CENTRE
A vibrant local centre provides local amenities and open space for a self contained community

4

SUSTAINABLE DRAINAGE
The northern green corridor provides the main drainage, channel for the sustainable drainage system and further emphasises the presence of water

5

WATER PARK
The water park promotes water as a defining feature whilst providing a buffer between Northstowe and the surrounding countryside

6

CAMBRIDGESHIRE GUIDED BUSWAY
Access to public transport services and the encouragement of pedestrian and cycle use through the legible network of streets at Northstowe promotes sustainable movement

7

ACTIVE LIFESTYLE
A network of paths around the water park allow for easy access to walking, jogging and cycling routes and promote a healthy lifestyle

8

GREENWAYS
Both the greenways connect the eastern water park and western park, providing landscape and biodiversity value. They also provide areas of informal play and drainage

9

PRIMARY SCHOOL
The primary school is located at the heart of the new community, easily accessible by public transport and adjacent to the community park and greenway

Pl

EQUIPPED AREAS OF PLAY
Five equipped areas of play (NEAP (1) & LEAPs (4)) are provided for children and youth of the new community

Figure 5.2 Phase 1 vision plan

5.3 Phase 1 scheme

The development forms the first phase of Northstowe new town, allocated by SCDC within its adopted Core Strategy (2007) and brought forward in accordance with the Northstowe Area Action Plan (adopted by SCDC in July 2007) and Development Framework Document (DFD), which was endorsed by the Northstowe Joint Development Control Committee in July 2012.

Outline planning consent has been granted for:

- A fully integrated mixed-use scheme of up to 1,500 dwellings, including affordable housing in accordance with the section 106 legal agreement (s106)
- A mixed use local centre, including a community building and provision for retail, food and drink and other appropriate uses
- A three form entry primary school
- Approximately 5 ha of employment land including a household recycling centre and foul water pumping station
- Significant formal and informal public open space, including a sports hub, parks / play space and a network of footpaths and cycleways
- 1.57 ha of allotments
- Improvements to the existing B1050
- Safeguarding of land for the first length of an internal busway link to the CGB
- Flood attenuation ponds, including the creation of a water park
- Strategic landscape provision

As part of the outline planning application a series of plans have been approved. These are:

- Site location plan 155316/001;
- Tree retention/loss plan 155316/ph1/sk014 TR&RP;
- Water drainage strategy drawings: primary development site 2951/200/D-01 rev C and Hatton's Road Attenuation ponds 2988/FLD/302 rev D;
- Foul water drainage strategy drawing 2951/200/D-03 rev B;
- Ecological mitigation strategy: Environmental Statement figures 6.10a primary development site and 6.10b Hatton's Road attenuation ponds;
- Parameter Plan 1a): Land use, open space and landscape – primary development site
- Parameter Plan 1b): Land use, open space and landscape – attenuation ponds
- Parameter Plan 2: Movement and access
- Parameter Plan 3: Building heights
- Parameter Plan 4: Density
- Figure 5 of the Construction Management Strategy (Earthworks Strategy)

Master plan

The parameter plans and master plan are subject to minor modifications as part of the design development associated with the production of the code. Modifications can be summarised as follows:

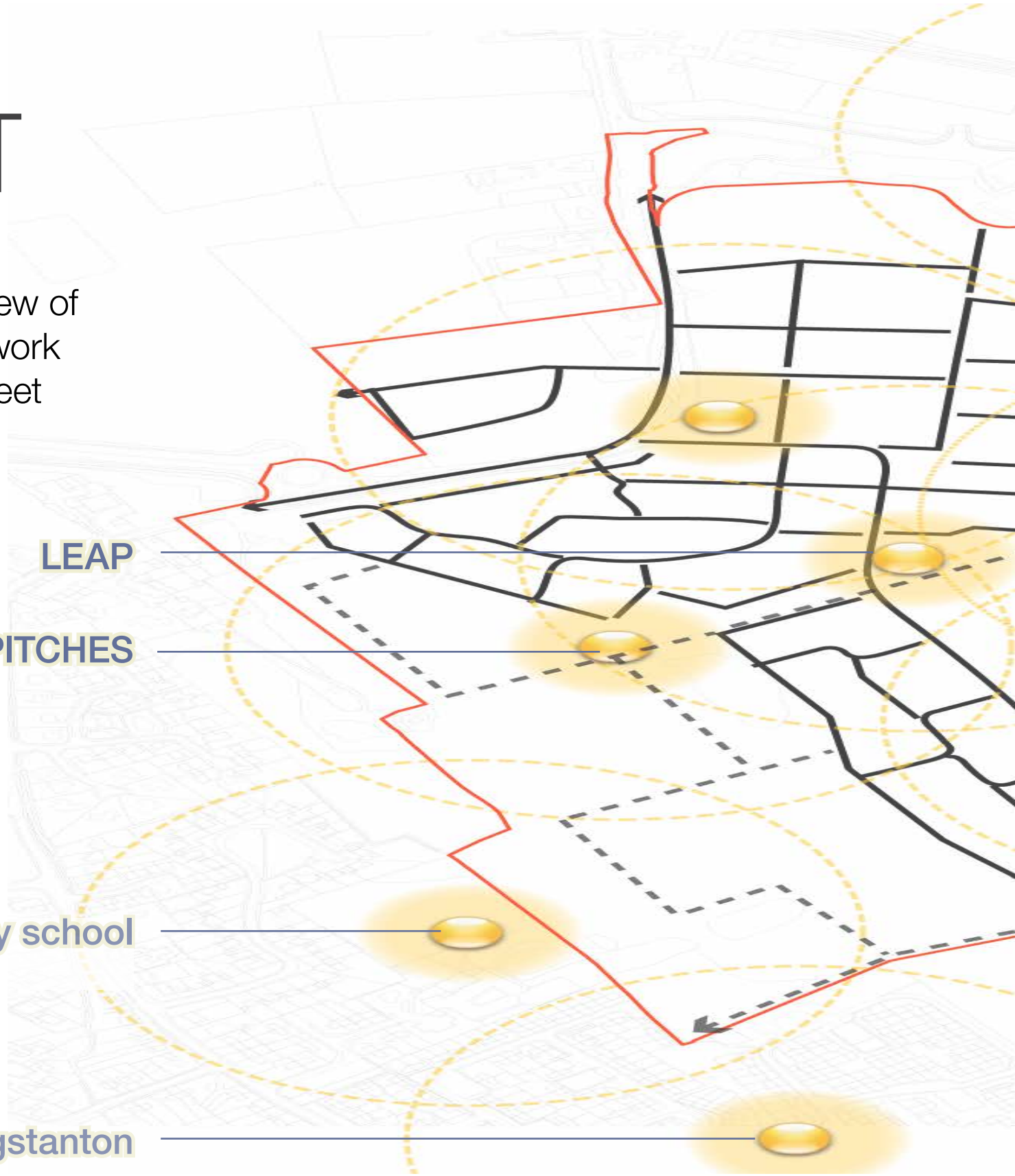
- Relocation of primary school site approximately 30m east to alongside the dedicated busway
- Rearrangement of employment land layout to east of the local centre
- Variation to access from the B1050 to remove southernmost access into the residential parcel on the western side of the B1050 and introduce an access opposite the local centre
- Downgrading of primary street to a lower order street between the local centre and dedicated busway / primary school

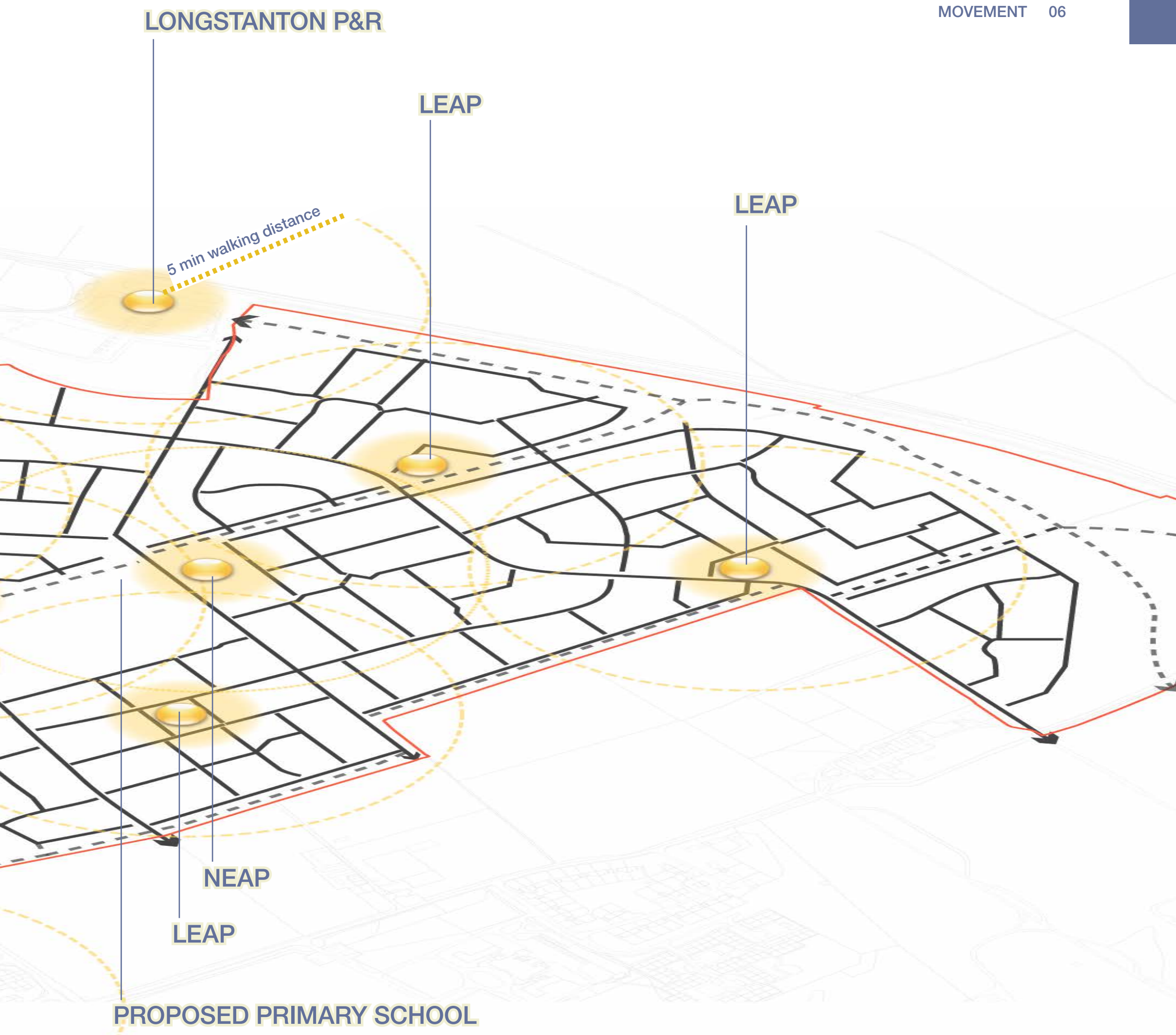
The master plan is continually undergoing technical testing and refinements which will be reflected within future reserved matter submissions.

Figure 5.3 Illustrative sketch master plan

6. MOVEMENT

This section provides overview of the Phase 1 movement network and the objectives of the street design.




LONGSTANTON P&R
LEAP
LEAP
5 min walking distance
NEAP
LEAP
PROPOSED PRIMARY SCHOOL

6.1 Walking network

Key design guidance

- Convenient and attractive direct walking routes will be provided to public amenities, shops, bus stops, local facilities, the primary school and adjacent neighbourhoods to encourage walking and a healthy lifestyle.
- All routes must be safe, overlooked and free from obstacles such as unnecessary signage and street furniture.
- All routes must be designed following 'safety by design' core principles and must provide safe movement at all times.
- Consistent colour and material must be used to increase the prominence of pedestrian areas and can also be useful;
    - To improve safety
    - To encourage compliance with traffic regulations
    - To reduce the amount of signage required

TYPE	MATERIAL	IMAGE
2m wide pedestrian route along dedicated busway **(within built form)**	Silver grey paving - (specification to be agreed at detailed design stage)	
2m wide pedestrian route along primary and secondary streets (within built form)	Asphalt (specification to be agreed at detailed design stage)	
3m wide green routes shared with bicycle users **(within water park)**	Asphalt with silver grey stone chippings	
3m wide green routes shared with bicycle users **(within greenways and parks)**	Self binding gravel - golden amber with timber edging	
2m wide route shared with bicycle users **(in landscape areas)**	Self binding gravel - golden amber with timber edging	

Table 6.1 Walking routes

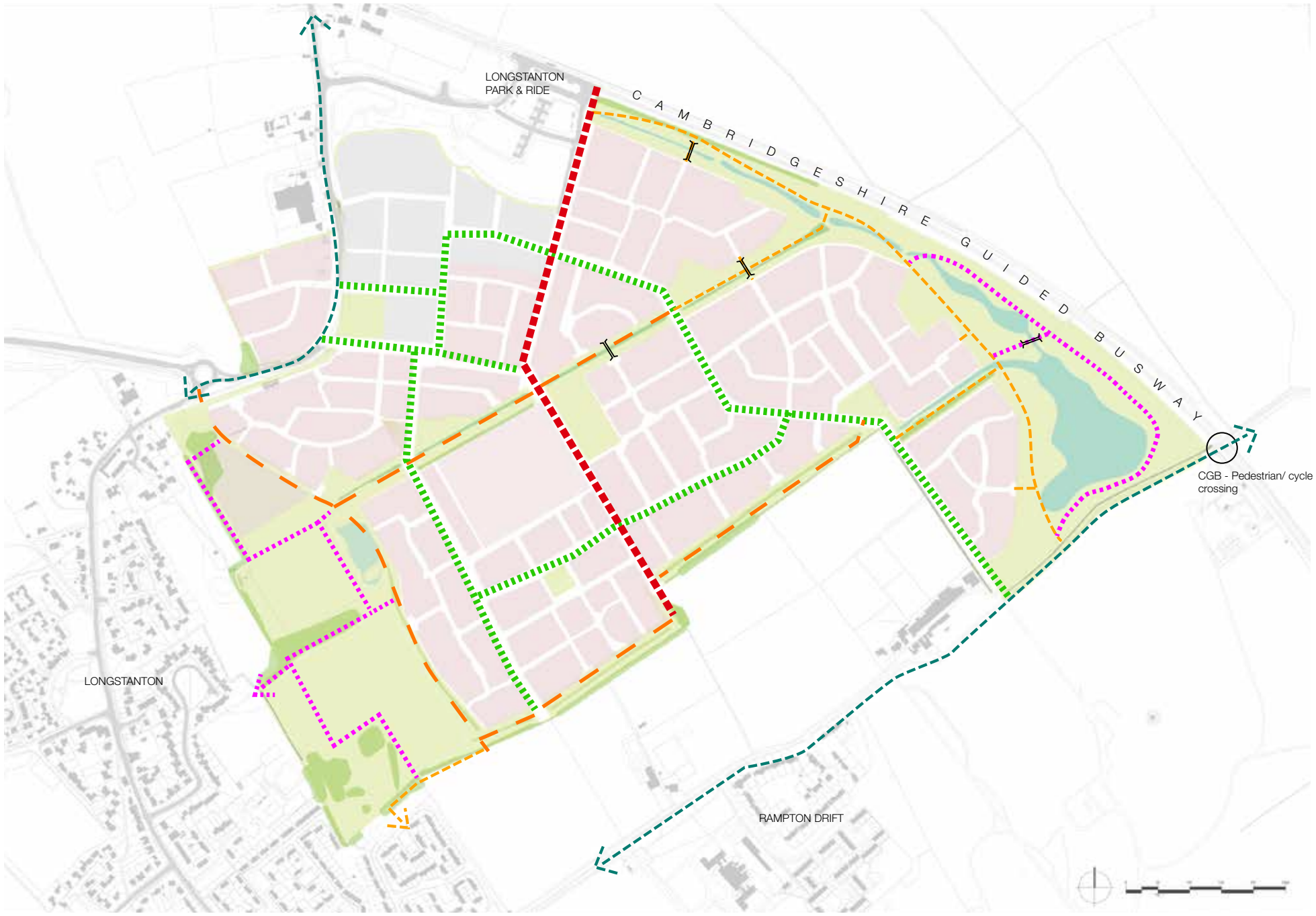


Figure 6.1 - Indicative strategic walking routes and linkages

- 2m wide footpaths along dedicated busway
- 2.0 m wide footpaths along primary streets
- 3m wide green routes - asphalt surface
- 3m wide green routes - self bound gravel surface
- 2m wide green routes
- Potential location for footbridges (pedestrian and cycleway)
- Existing routes and / or upgraded pedestrian connections

6.2 Bicycle network

Key design guidance

A network of safe cycleways will be provided to connect the street network with the open space, facilities in Longstanton village, towards Rampton Drift, to the B1050 and to the Longstanton P&R site.

The five types of cycleways in combination with the network of lower order streets will provide a safe network to move around the new development and beyond.

- A series of cycleways will be provided to connect the street network with the open space and adjoining Longstanton P&R and Longstanton village.
- All routes must be safe, overlooked and free from obstacles such as unnecessary signage.
- Five types of paths are proposed as defined in the table (on street cycle routes are coded under section 6.4)
- Consistent colour and material must be used to increase the prominence of cycleways and can also be useful;
    - To improve safety
    - To encourage compliance with traffic regulations
    - To raise the profile of cycling
    - To reduce the amount of signage required
    - To reduce conflict with vehicles

TYPE	MATERIAL	IMAGE
Minimum 3m wide cycle commuter route along dedicated busway (within built form)	Coloured asphalt - red (specification to be agreed at detailed design stage)	
Minimum 2.1m wide cycle commuter route along primary routes (within built form)	Coloured asphalt - red (specification to be agreed at detailed design stage)	
3m wide green routes shared with pedestrians (within water park)	Asphalt with silver grey stone chippings	
3m wide green routes shared with pedestrians (within greenways and parks)	Self binding gravel - golden amber with timber edging	
2m wide route shared with pedestrians (in landscape areas)	Self binding gravel - golden amber with timber edging	

Table 6.2 - Cycle routes

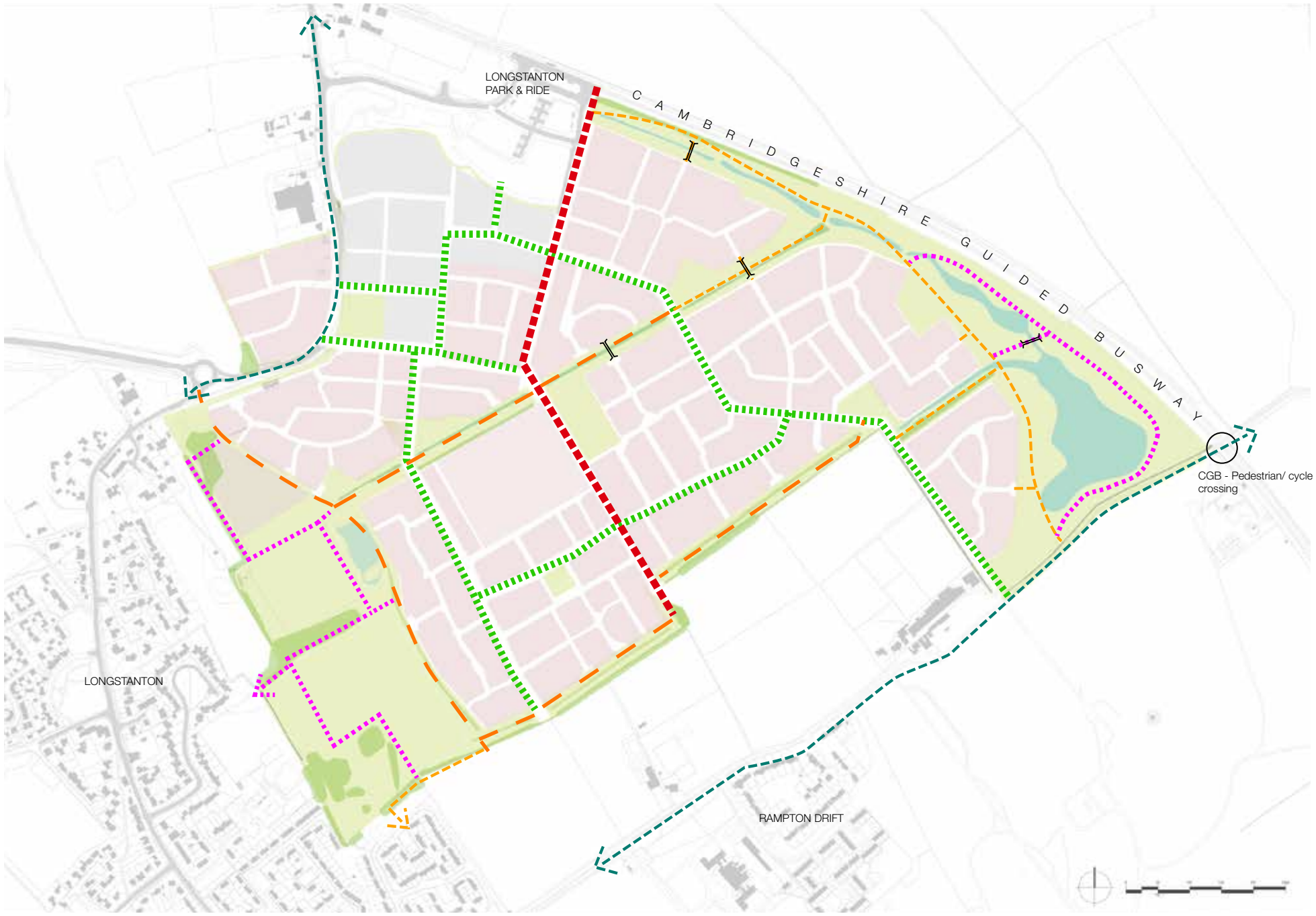


Figure 6.2 Indicative strategic bicycle routes and linkages

- Minimum 3m wide cycle commuter routes along dedicated busway
- Minimum 2.1m wide routes along primary streets
- 3m wide green routes - asphalt surface
- 3m wide green routes - self bound gravel surface
- 2m wide green routes
- Existing routes
- Potential location for timber bridges over swale or water body
- On street cycling

6.3 Public transport

Key design guidance

- An exemplar public transport network will be provided in the form of various local bus routes and the dedicated busway proposed through the development.
- The dedicated busway will be free from local traffic although there will be limited local access adjacent to some parts of the busway.
- Bus stops and other design features for the public transport route should be consistent throughout the development.
- Bus stops must have adequate kerbing, and a safe, lit area for passengers, including real-time information.
- Cycle parking should be provided at bus stops.

TYPE	MATERIAL	IMAGE
6.5m wide carriageway on dedicated busway **(dedicated road for buses free from local traffic)**	Asphalt (specification to be agreed at detailed design stage)	
6.1m wide carriageway on primary routes **(Shared with local traffic)**	Asphalt (specification to be agreed at detailed design stage)	

Table 6.3 Public transport

Image showing Longstanton P&R bus stop

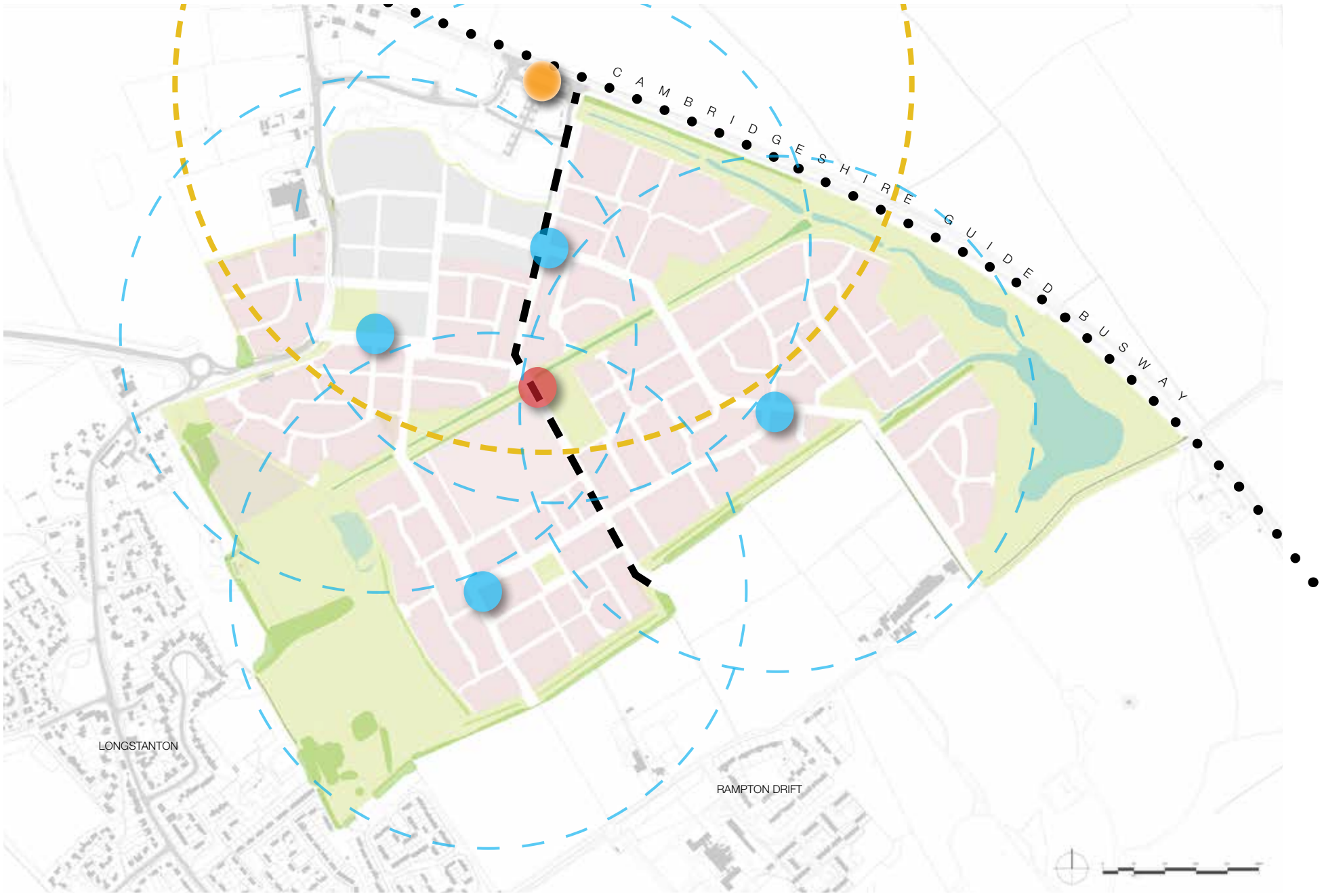


Figure 6.3 Indicative strategic public transport diagram

- Longstanton P&R stop on CGB
- Proposed bus stop on dedicated busway
- Proposed bus stop for local public transport
- Dedicated busway through Phase 1
- Cycle parking to be provided at key nodal locations such as bus stops

6.4 Streets hierarchy

Street hierarchy

All streets have been coded to minimise the potential for 'rat running' within the development.
The reserved mMatters application must demonstrate the potential for this is minimised. All highways must be designed to adoptable standards.

TYPE	MOVEMENT FUNCTION	CHARACTER	DESIGN SPEED	ADOPTABLE HIGHWAY	CARRIAGEWAY WIDTH	PEDESTRIANS	CYCLISTS	BUS MOVEMENT	KERBING	TRAFFIC CALMING
BUSWAY	Dedicated route for CGB and local public transport	Boulevard, highest percentage of building enclosure within housing parcels (75 to 100%), for guidance on building height see figures 6.5 and 6.7	30mph	21.5m with local access road on one side 16.5m when private driveway on both sides	6.5m	2m footway	3m cycleway	Free from general traffic carriageway	Low kerbing Separate detail to be provided for bus stops	
PRIMARY STREET	Key connecting route through site Site access / gateway Highest levels of movement for all modes	Dedicated cycle way, high to medium percentage of building enclosure (65 to 90%), for guidance on building height see figure 6.9	20mph	16.7	6.1m	2m footway	2.1m dedicated cycleway on both sides of carriageway	Mixed with general traffic. Bus stops on street	Maximum 100mm. Kerbing for bus stops to be agreed	Through raised table for junction squares On street parking Tree planting
SECONDARY STREET	Minimal through movement mostly local access plot access	Suburban layout, medium percentage of building enclosure, for guidance on building height see figure 6.11	20mph	9-12m	5.5m	2m footway	In carriageway	Mixed with general traffic	100mm	Through alignment / street furniture / On street parking
TERTIARY/ SHARED STREETS / MEWS	Generally lower levels of movement. Residential streets with plot access, shared surfaces Pedestrian/cycle friendly streets	Communities around a street, low percentage of building enclosure, for guidance on building height see figures 6.13 and 6.14	10-15 mph	5-8m	Minimum 5m wide for traditional streets Minimum 6m wide for shared streets	2m footway or shared surface	In carriageway, on shared surface	None	Maximum 100mm or none	Through alignment / street furniture
PRIVATE DRIVEWAYS	Just serving local properties	Communities around a street, low percentage of building enclosure.	10 mph	N/A	2.5-4.5m	On shared surface	On shared surface	None	None	Through alignment / street furniture

Table 6.4 - Street hierarchy

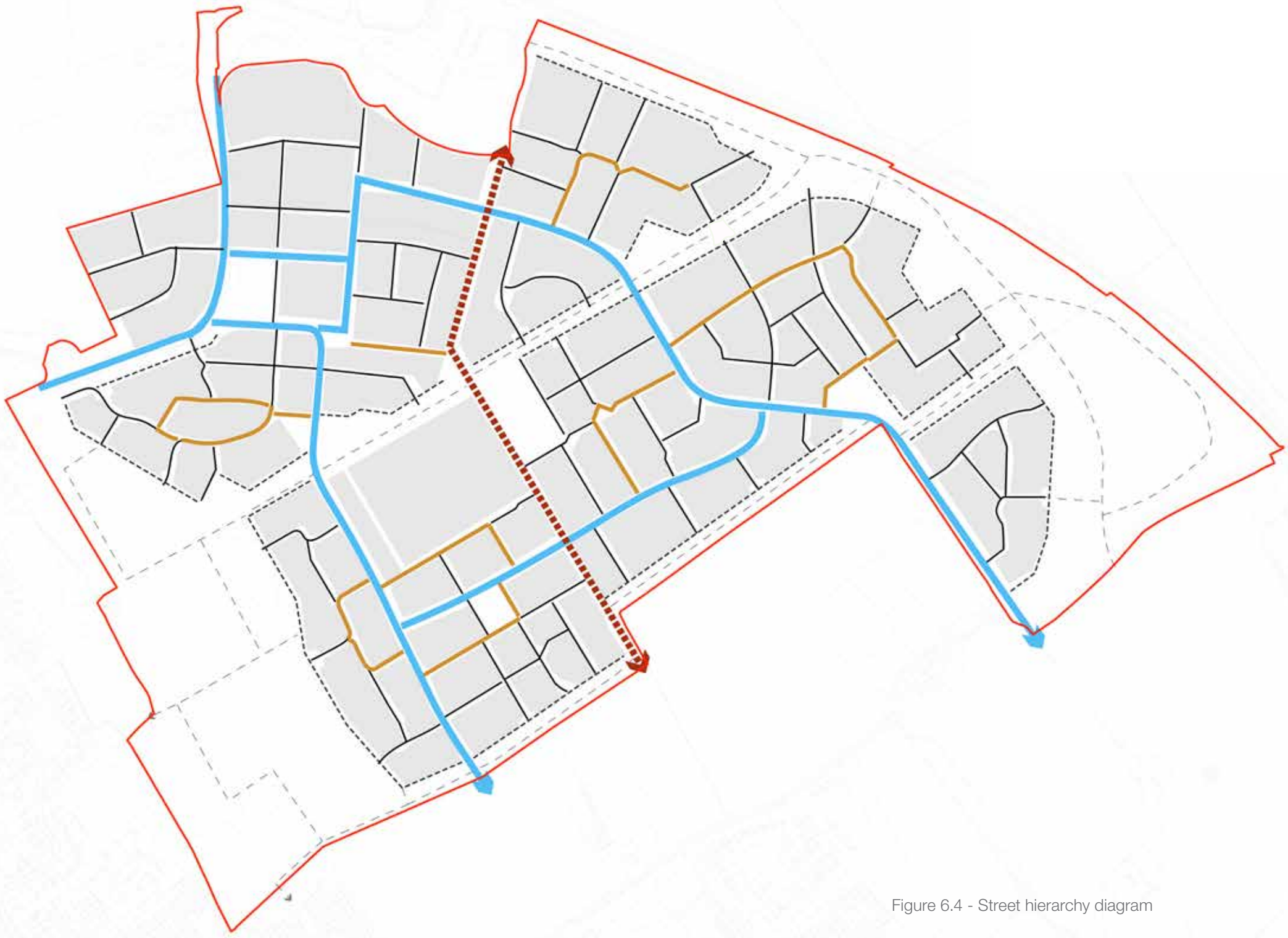


Figure 6.4 - Street hierarchy diagram

- Dedicated busway
- Primary street / B1050 improvement work
- Secondary street
- Tertiary street / mews
- Tertiary streets / private driveways
- Footways / cycleways

6.5 Dedicated busway

Character defining features

BOULEVARD

The Phase 1 stretch of the dedicated busway will be a residential boulevard providing primary public transport and pedestrian movement. The design of the boulevard must characterise the pedestrian and bicycle user priority and should strengthen the sustainable behaviour of Northstowe.

TRAFFIC CALMED ROUTE

Careful design and use of materials will ensure the busway will have a pedestrian and cycle friendly environment. The busway will be designed with traffic calming features to encourage walk to school behaviour and will also provide pedestrian friendly linkages to other public amenities. The stretch of the route fronting the primary school and the public park will be designed as a heavily traffic calmed place and will provide free and child friendly movement across the busway connecting to the play areas in the park from the school site.

CENTRAL GREEN VERGE

A central verge will be provided with tree planting not only to achieve an urban ecological link but also to represent the transition through the changing seasons, with use of soft landscape planting species on this key pedestrian activity place.

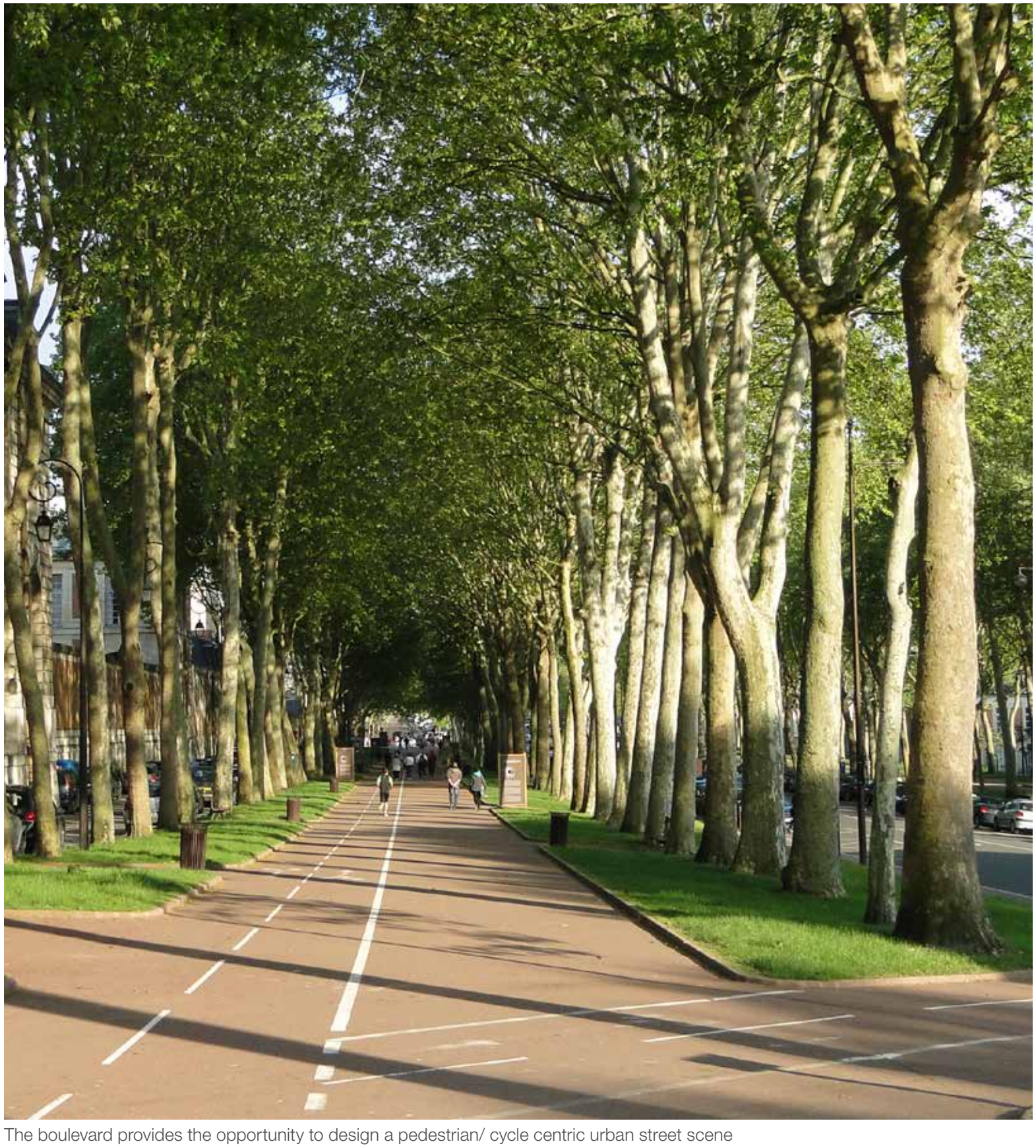
REGULAR BUILDING

A harmonious street scene will be achieved on either side of the busway by regular building lines, plot sizes, consistent building typology and a boundary treatment to plots. Use of building materials will be key to creating a cohesive street frontage and a public face of Northstowe on this key public transport route.

Use of shrubs and ground cover planting should carefully consider the transition through the seasons and provide year round attractive street scene

A central verge dividing vehicular traffic from pedestrian and cycle movement can be very effective not only to ensuring safety of users but providing green relief on the urban routes

A cohesive street scene should be achieved by use of consistent architectural style and boundary treatment on both sides of the street



The boulevard provides the opportunity to design a pedestrian/ cycle centric urban street scene

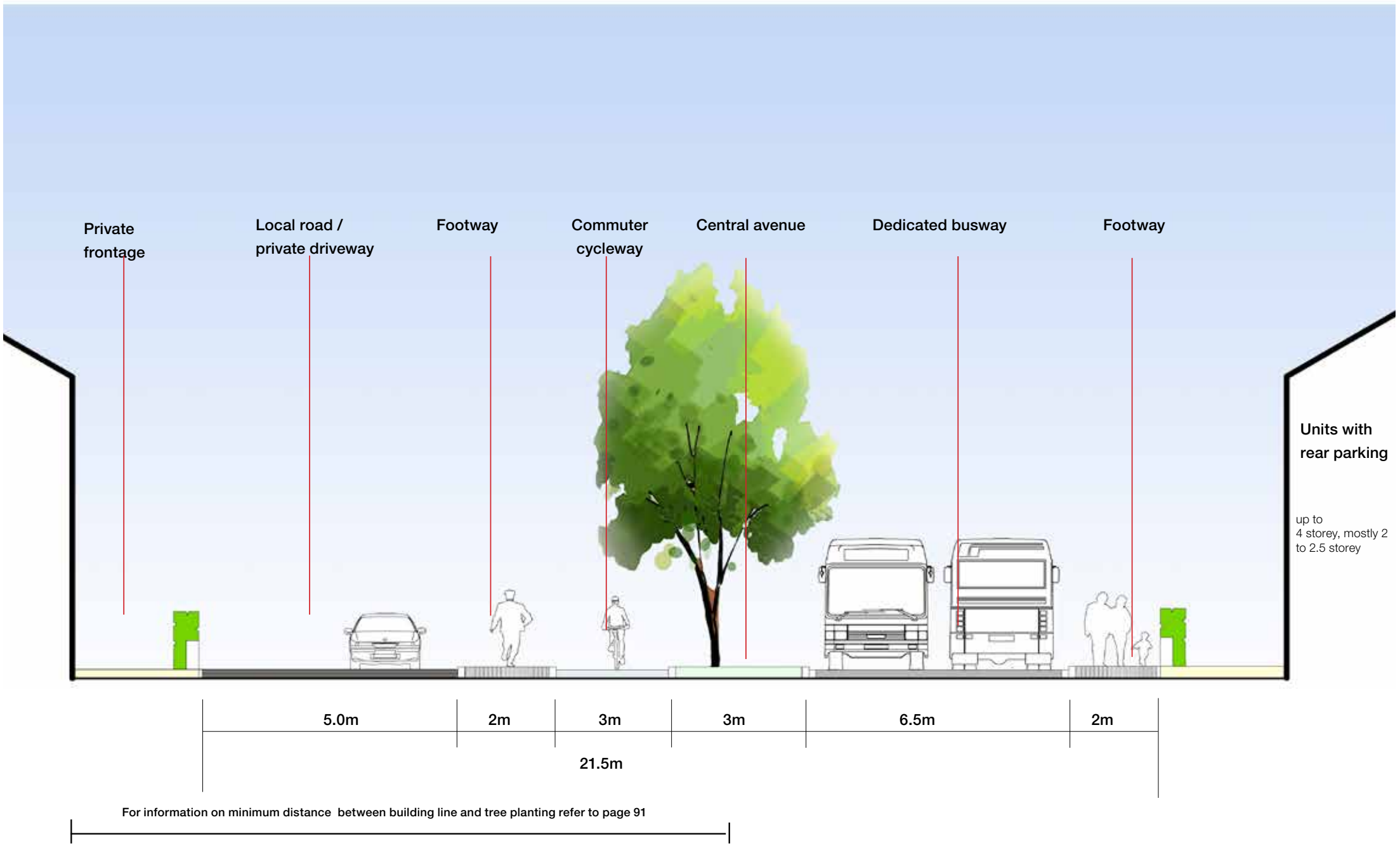


Figure 6.5 - Section - dedicated busway with local road

Scenario 1 - Local road / private drive and rear parking court

Bands in different materials could be used to break the continuous linear form of the busway and to create a more visually pleasing environment

Housing on the other side of the busway needs to be provided with rear parking arrangements

Continuous enclosure to plots must be provided without compromising secure by design principles and natural surveillance. Low hedging could be used to promote green character of the street

Shared surface /private driveway for residents is provided on one side of the dedicated busway in the form of an access road / private drive, segregated from busway carriageway

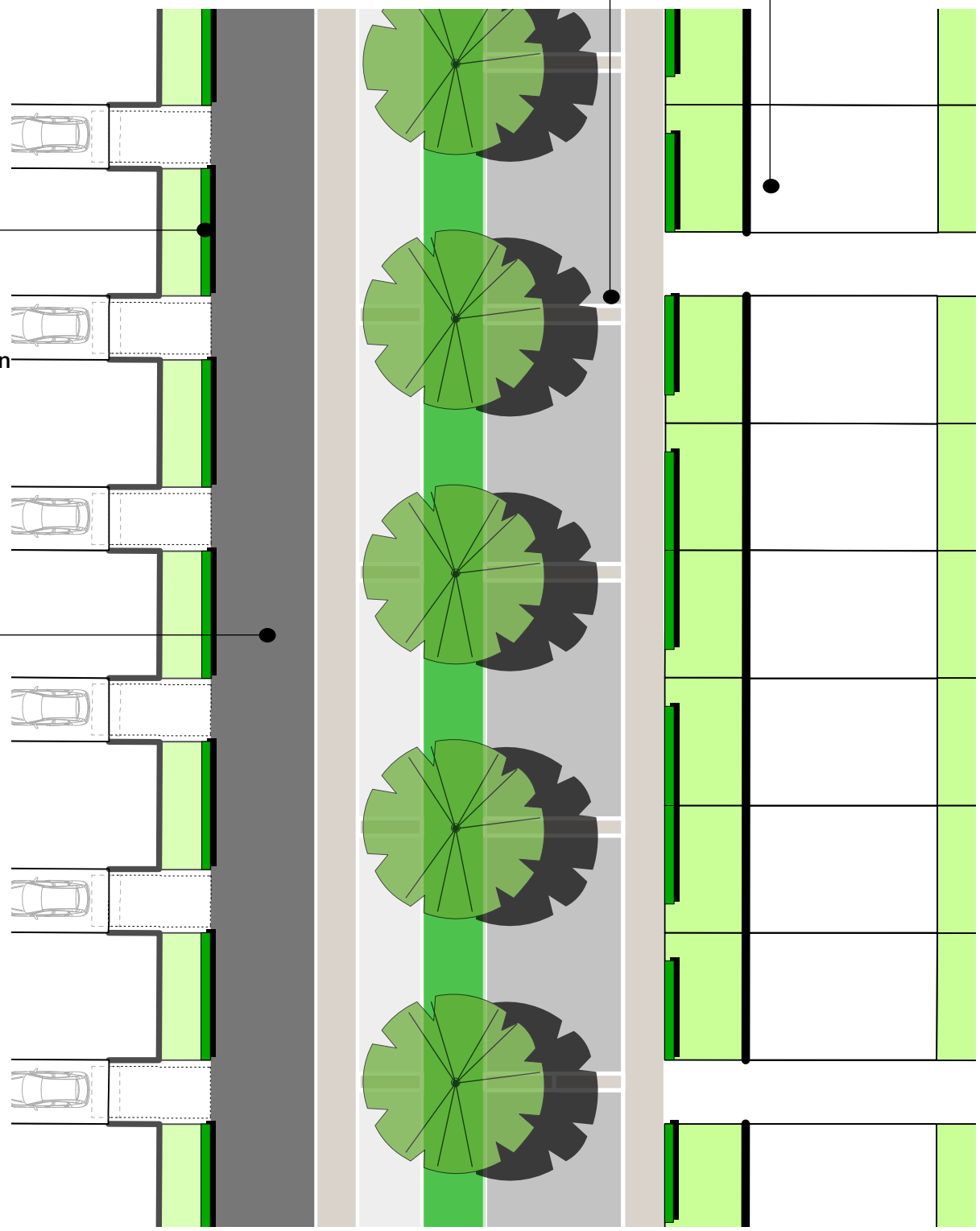


Figure 6.6 - Plan - dedicated busway with local road

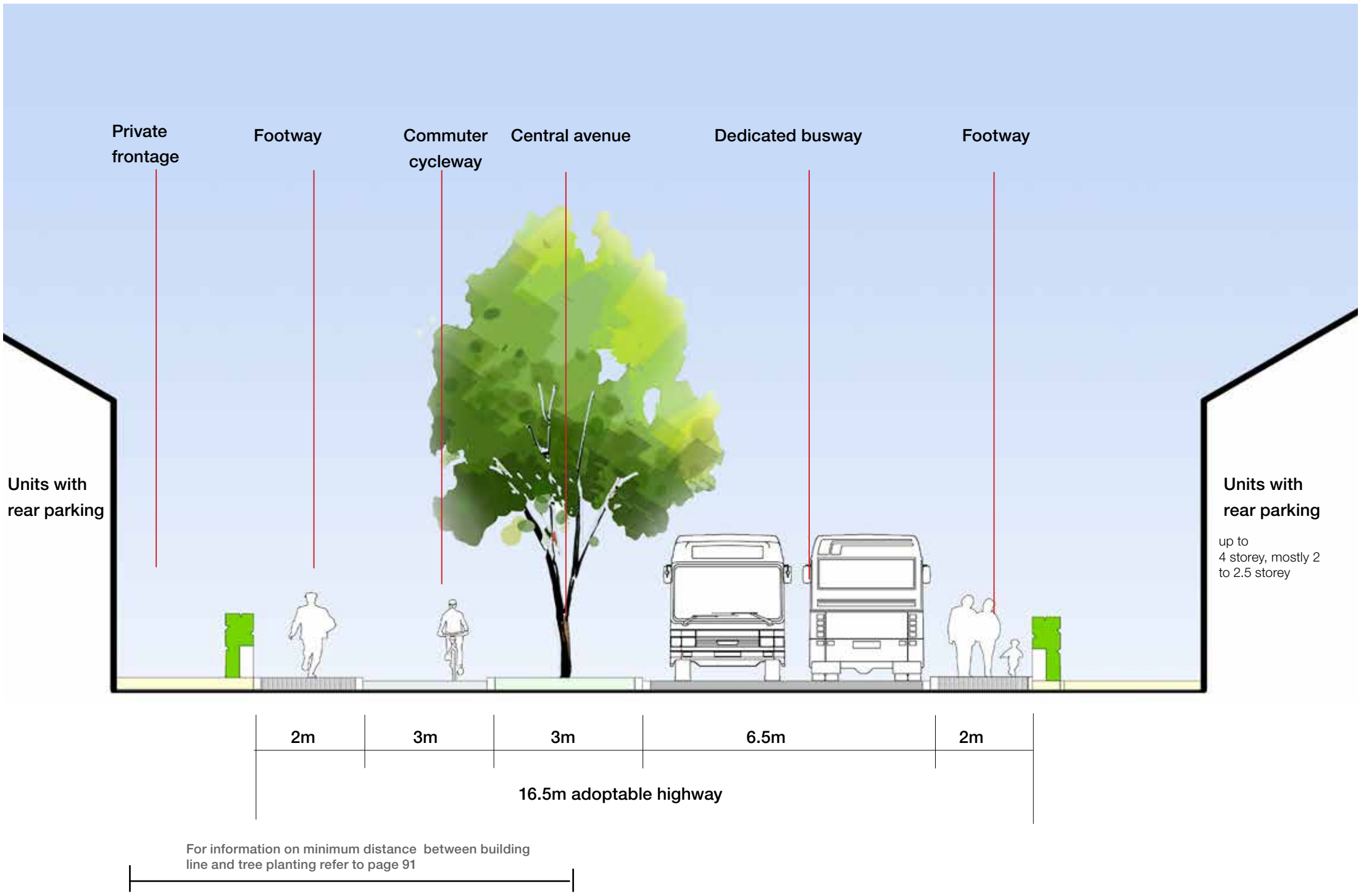


Figure 6.7 Section - dedicated busway with rear parking

Scenario 2 - Rear parking

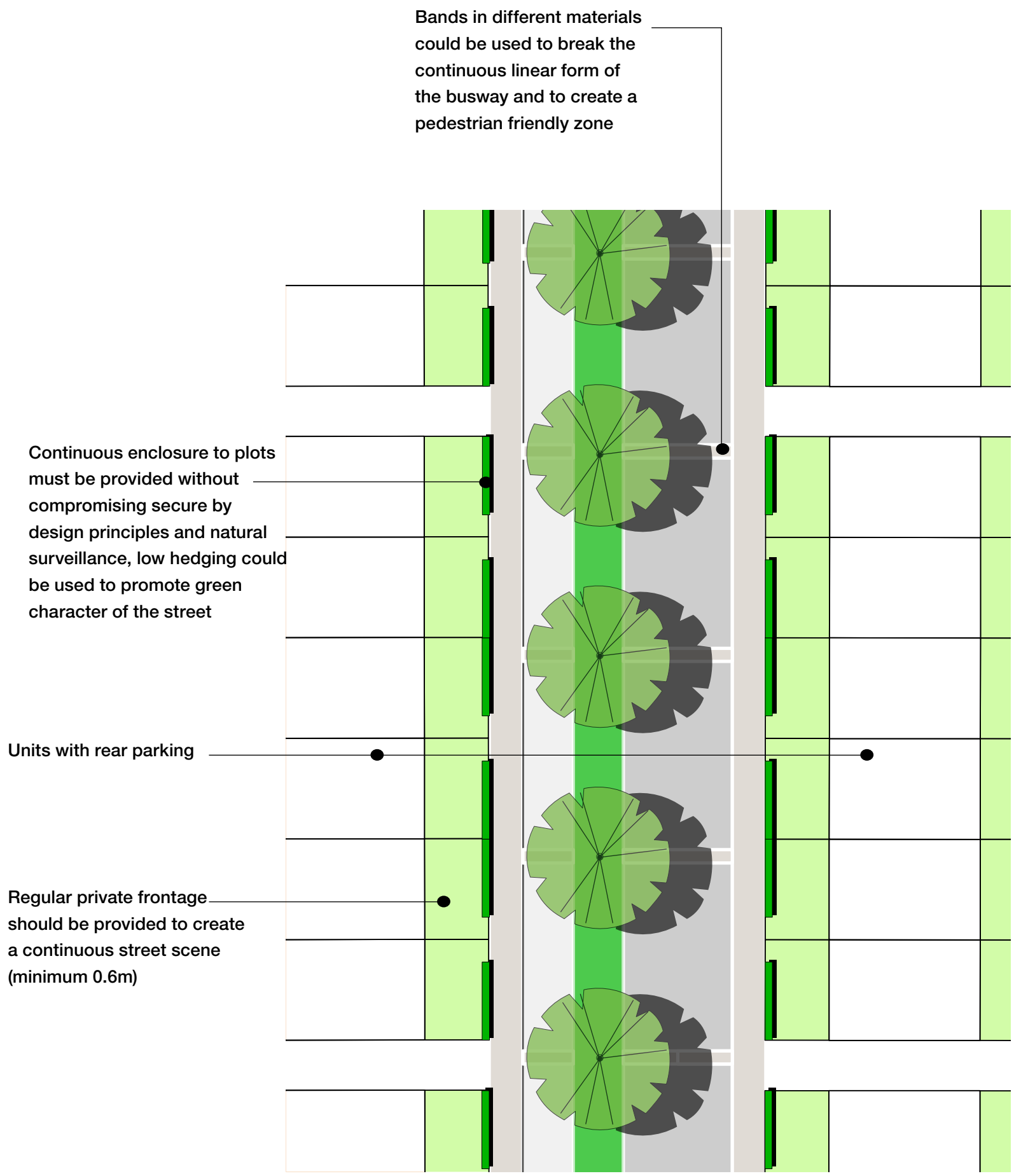


Figure 6.8 - Plan - dedicated busway with rear parking

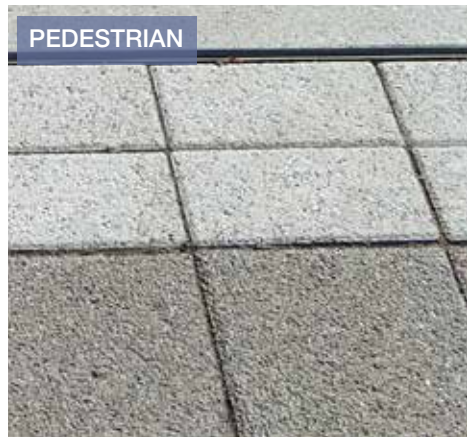
DEDICATED BUSWAY
BESPOKE MATERIAL PALETTE

Simple surface materials with the combination of timber and steel furniture is envisaged to create the unique identity of the dedicated busway.

TREE PIT

High quality hard surface tree pit detail should be provided in hard landscape or paved areas and ideally should match the pavers of surrounding areas. The surface treatment and detailed specifications to be agreed with South Cambridgeshire District Council

PEDESTRIAN



High quality silver grey paving, specifications to be agreed at a detailed design stage

CYCLE WAY

High quality coloured asphalt, specifications to be agreed at a detailed design stage

SEATING

Marshalls - Sineu Graff cast iron and timber seating or similarly approved

CYCLE STAND

Marshalls - Sineu Graff wishbone steel and stainless steel cycle stand or similar approved

BOLLARDS

Marshalls - Rhino stainless steel bollards with hazard ring or similarly approved

BINS

Marshalls - Sineu Graff timber litter bins or similarly approved

LIGHTING COLUMN

Windsor - Manhattan tubular steel or aluminium lighting column or similar approved. The specification to be agreed at a detailed design stage

Large trees / feature trees

The character of the dedicated busway is defined by key large-species trees forming approximately 40% of the total number of trees along the length of the route. The primary trees are to be concentrated where they minimise effects on existing and future building foundations (e.g. adjacent to open spaces, at the centre of the widest sections of the street or where buildings are set back from the street). However, to provide a rhythm to the overall street experience the maximum spacing between primary trees shall be 25m. In combination with medium/ smaller trees the visual effect of a boulevard must be achieved.

Platanus hispanica	London Plane
Tilia cordata	Small leaved lime

Medium / small trees

Secondary tree species are to be used primarily as accents along the busway to create visual interest in specific places for specific purposes. They will break up the uniformity of the avenue to emphasise key changes, such as where secondary streets cross, leading up to junctions and parks, or changes in housing layout. They provide a more localised character along the busway and help to visually emphasise node points and changes. The list is a wider palette than is anticipated to be used.

Acer pseudoplatanus	Golden Sycamore
Alnus cordata	Italian alder
Betula pendula Dalecarlica	Swedish birch
Corylus colurna	Turkish hazel
Ginkgo biloba	Maidenhair tree
Liquidambar acalycina	Sweet gum
Robinia psudoacacacia 'Bessonifolia'	False acacia
Carpinus betulus 'Frans Fontaine'	Hornbeam
Liriodendron tulipifera	Tulip tree

Shrubs / underplanting trees

The underplanting is primarily to provide localised visual interest for adjacent residents and pedestrians, to provide a variety of form, colour and seasonal variety. The shrubs are typically larger growing species than along the primary streets, or larger-growing cultivars of the same species. The shrubs are designed to be of a similar mature height to aid maintenance, with some slightly smaller shrubs to act as ground cover or to provide more tidy edges where there is slower moving pedestrian traffic (such as at signalised junctions). The list is a wider palette than is anticipated to be used.

Carex pendula	Pendulous sedge
Ceanothus 'Skylark'	Californian lilac 'Skylark'
Cornus kousa var chinensis	Chinese dogwood
Cornus sanguinea 'Midwinter Fire'	Dogwood 'Midwinter Fire'
Cotoneaster × watereri 'John Waterer'	Cotoneaster 'John Waterer'
Euonymus fortunei 'Silver Queen'	Spindle 'Silver Queen'
Philadelphus 'Belle Etoile'	Mock orange 'Belle Etoile'
Photinia × fraseri 'Red Robin'	Christmas berry 'Red Robin'
Pittosporum tenuifolium 'Loxhill Gold'	Tawhiwhi 'Loxhill Gold'
Rosmarinus officinalis 'Miss Jessop's Upright'	Rosemary 'Miss Jessop's Upright'
Rubus tricolor	Chinese bramble
Stipa gigantean	Golden oats
Viburnum bodnantense 'Dawn'	Arrowwood 'Dawn'

6.6 Primary street

Character defining features

SUBURBAN RESIDENTIAL SCALE

These streets act as the main vehicular routes in and through the development linking together the principal destinations and providing local strategic connections. The design of the street scene requires a high level of consistency throughout the development.

TREE LINED AVENUE

On street parallel parking must be provided on one side of the street throughout the development. Trees must be planted at regular distances within the 2.4m wide parking corridor to provide green character and by alternating the side on carriageway acting as a traffic calming elements.

ENCLOSURE AND CHARACTER

A coherent street scene by consistent use of materials and style must be provided. Enclosure must be achieved through combinations of built form and planting.

BUILDING MASS AND FORM

Consistent building lines and setbacks. Buildings grouped to maximise enclosure. Predominantly 2-2.5 storeys with repeated vertical emphasis.

Tree lined verges will be provided with parking arrangements on one side of the carriageway

Continuous enclosure could be provided in the form of well designed consistent boundary treatment

Primary streets will provide separate 2.1m cycle ways on each side of the carriageway

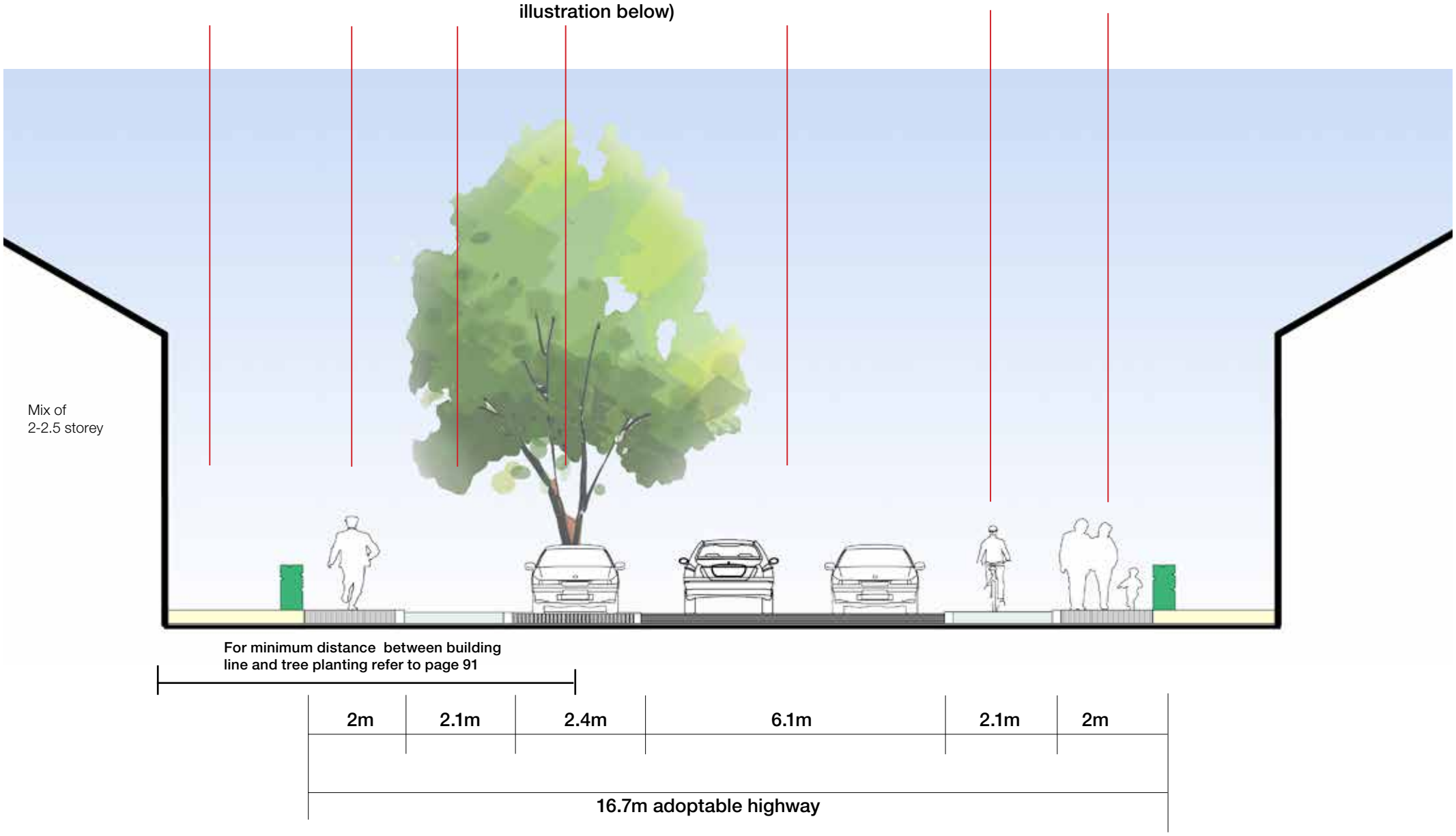


Figure 6.9 Section primary street

Figure 6.10 Illustrative view of primary street