MAKING A
NEW
BOLTON
WOODS

Design and Access Statement

November 2014

urbo

CANAL ROAD URBAN VILLAGE LIMITED

Developers

CANAL ROAD URBAN VILLAGE LIMITED

urbo

City of Bradford MDC
www.bradford.gov.uk

Consultants

urbed — **Urban Designer**

CIVIC ENGINEERS — **Civil Engineer**

p·ie — **Landscape Designer**

Mott MacDonald — **Highway Engineer**

HOW — **Planning Consultancy**

This Document

This Design & Access Statement has been produced by URBED, HOW, Civic, MottMacDonald and Planit on behalf of Canal Road Urban Village Ltd. It supports the Hybrid planning application for New Bolton Woods.

If you have any questions or require further information then please contact Emily Crompton.

emily@urbed.coop - 0161 200 5500

Contents

1.1 Introduction

This document has been prepared as a Design and Access Statement to support the hybrid planning application for New Bolton Woods in Bradford. The document describes the masterplan that has been developed for Canal Road Urban Village Ltd (CRUVL). It describes an indicative masterplan for a new neighbourhood of up to 1,000 new homes divided into a number of sub neighbourhoods and including a new local centre.

The Bradford–Shipley Regeneration Corridor stretching between Bradford City Centre and Shipley has been identified by Bradford Metropolitan District Council (BMDC) as one of its four main priority areas for regeneration. This includes plans for up to 3,000 new homes to meet needs of the city's growing population.

This Design and Access Statement has been developed to support a hybrid planning application for the largest site currently available within the regeneration corridor. This is to be developed by CRUVL, which is a joint venture between BMDC and Urbo Regeneration. Urbo is itself a partnership between Arnold Laver Timber (which occupies part of the site), Bolsterstone and AGD Regeneration.

This joint venture company was established in October 2010 and is tasked with delivering the regeneration of the central section of the Canal Road Corridor as a sustainable new neighbourhood of Bradford over the next 10 – 15 years. The masterplan includes around 1,000 new homes plus a new school, community facilities, a local centre, sports provision, open space and employment opportunities.

The masterplan which covers 30.7 hectares of land has been developed by a design team headed by URBED (Urbanism Environment and Design) working with OMI Architects, Landscape designers Planit, Civic Engineers (formerly Stockleys), HOW Planning and Mott MacDonald Highway Engineers.

This team has been working for more than five years on plans for the site. As part of this a number of consultation exercises were held in 2012, 2013 and earlier this year which are described in Section 4 of this report, and expanded upon within a supporting document: Statement of Community Engagment.

Part of the masterplan has already been brought forward as a planning application and was granted permission in April 2013 (shaded in grey labelled Phase 1 on the drawing to the right). This was on land previously allocated for housing in the Bradford Unitary Development Plan.

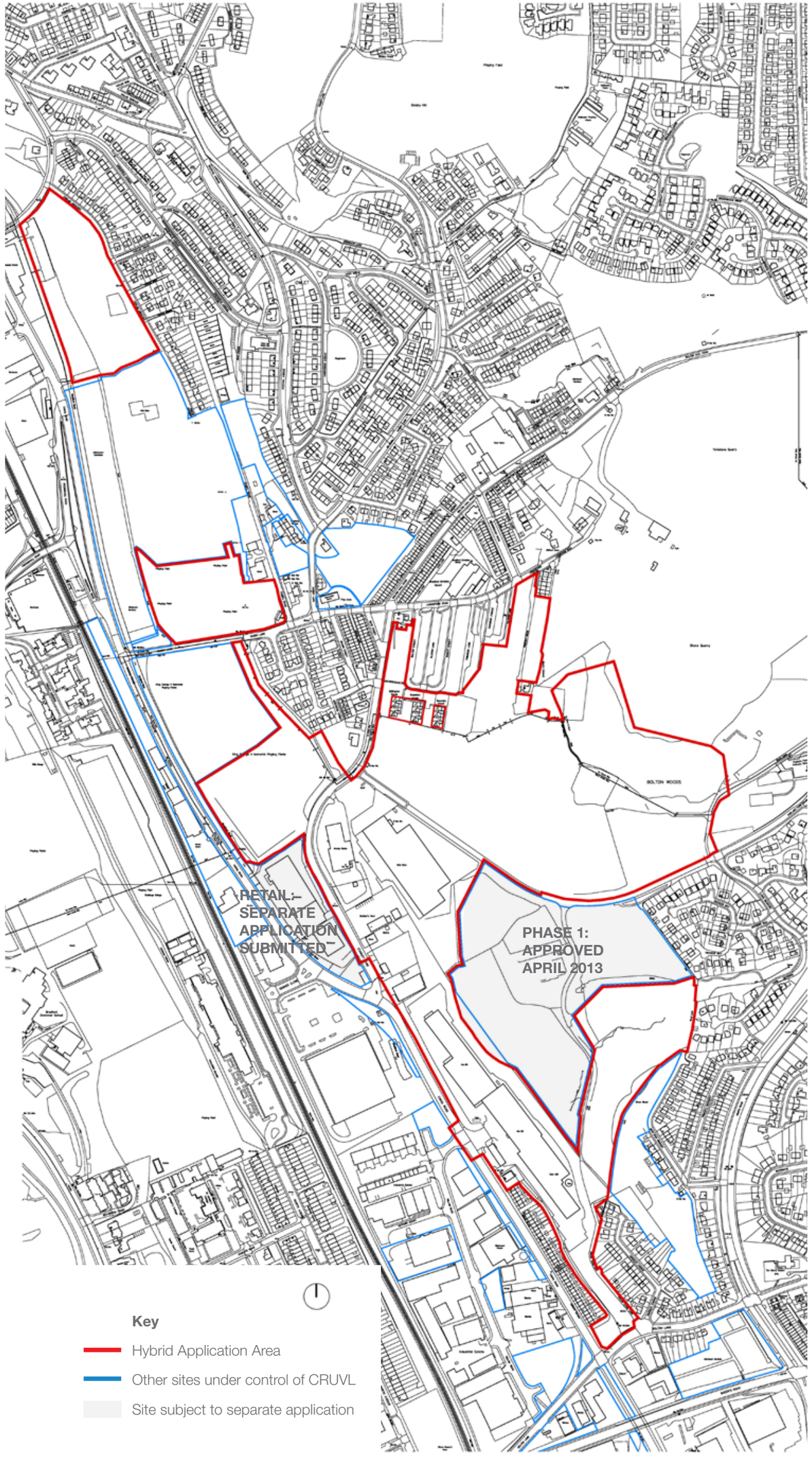
There is one other full planning application coming forward separately, which is for two new foodstores and some other smaller units. The area is also indicated on the plan to the right. It is significant to this application as it will help form part of the regeneration of this area.

The masterplan aims to create a new sustainable urban neighbourhood, linked to the existing neighbourhood of Bolton Woods. The whole plan will be developed over 10-15 years so clearly the plan needs to retain a strong degree of flexibility. To this end the plans in this Design and Access Statement are illustrative. This means that they show the current intentions of the applicant and the most likely way in which the site will be developed, but they cannot be fixed.

This document is organised in 9 Sections. The first three provide background to the development, the wider context and the site. Section 4 then describes the origins of the masterplan, the vision for the neighbourhood and the way in which the plan has developed and the consultation feedback.

Section 5 describes the structure and layers of the masterplan and includes the illustrative plans. It is followed by two sections that look in more detail at the streets and open space networks. The final section then looks at each of the neighbourhoods and sets out a design guide for their development.

This Design and Access Statement should be read in conjunction with the other plans and documents supporting the application.



2. Context

2.1 Bradford Context

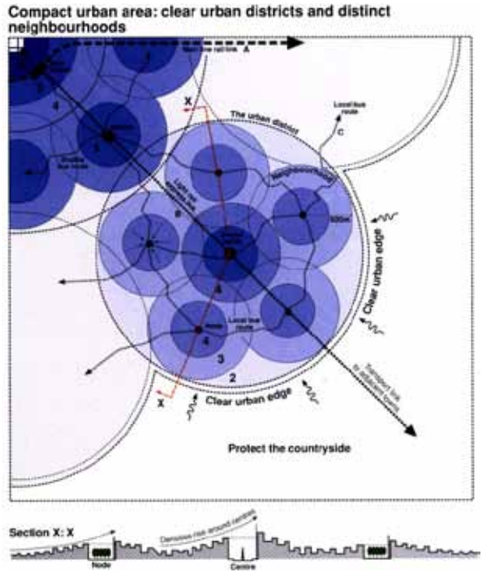
If we are to create a new neighbourhood we need to understand how it fits within the existing neighbourhood structure of North Bradford. Like many cities, this is a patchwork of neighbourhoods, some built recently and others based on original towns and villages (like Shipley and Bolton Woods). To different extents these neighbourhoods have their own identity based partly on their physical character and partly on their communities. Each also has a centre and a range of community and recreational facilities such as pubs, parks and clubs.

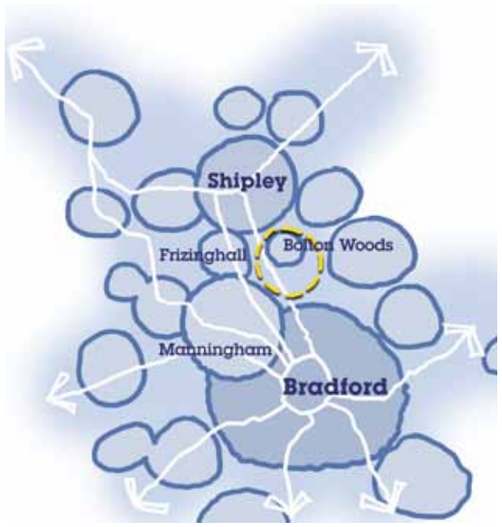
There are a number of ways in which the Canal Road Corridor could be developed as explored in the Shipley and Canal Road Corridor Area Action Plan. It could be developed by expanding each of the surrounding neighbourhoods, or by creating links between them or by a series of smaller ‘villages’. However, we have opted to insert a substantial new neighbourhood into this structure, building the village of Bolton Woods into a neighbourhood that has as strong an identity as Manningham on the opposite side of the valley.

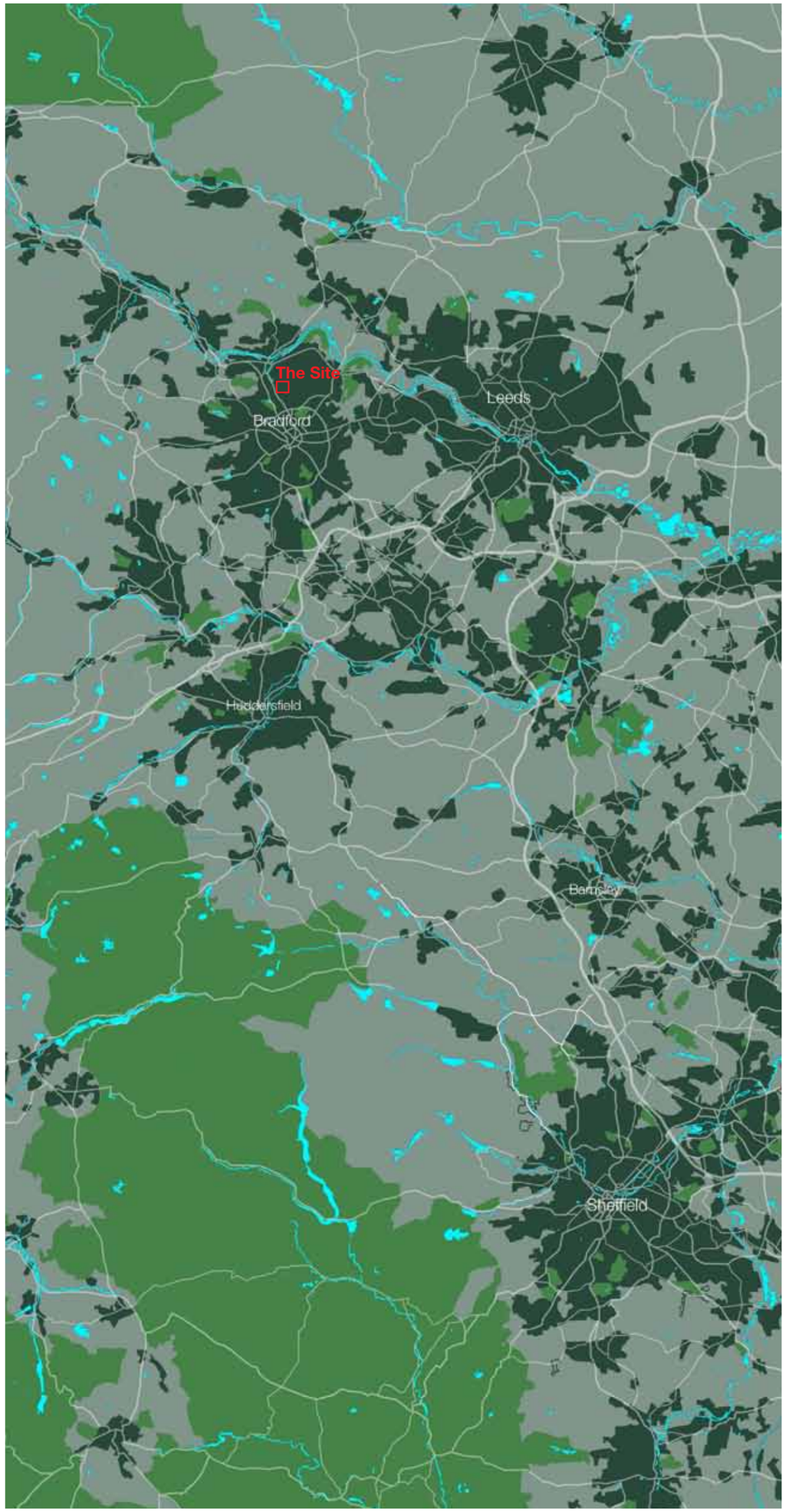
The diagram to the right is from the Urban Task Force report in 1999 and shows the structure of an urban neighbourhood such as this. This shows a series of neighbourhoods clustered around a city centre in dark blue, each of which has a strong centre and is in turn surrounded by sub neighbourhoods. This is what we are seeking to achieve in Bolton Woods.

There is often a danger that new development is inward looking and fails to relate to the surrounding neighbourhood. Permeability therefore needs to be extended into the surrounding neighbourhoods, taking any opportunity available to make links into the existing housing areas.

In this way the existing residents of Bolton Woods, of the Kings Road area and potentially the future residents of the redveloped Marshall’s Quarry will feel part of the area and able to use the shops and other facilities. The plan of the new neighbourhood needs to be designed to knit together these surrounding neighbourhoods so that the scheme becomes part of a wider integrated whole.







The site’s national context

2.2 Policy Context

The Development Plan

Section 38(6) of the Planning and Compulsory Planning Act 2004 states that decisions should be made in accordance with the development plan unless material considerations indicate otherwise. The development plan for the purpose of determining this application is the saved policies of the Bradford Replacement Unitary Development Plan (RUDP) (October 2005); although these policies have now come to the end of their intended lifespan.

In accordance with the RUDP Proposals Map, the site has the following policy allocations:

> Employment under Policy E6 "Employment Zones" in the southern-central part of the site;

> Open Space under policies OS1 "Urban Greenspace", OS2 "Recreational Open Space", OS3 "Playing Fields" and OS4 "New Sites for Recreation Open Space & Playing Fields" in the north and eastern parts of the site;

> Local Conservation Importance under Policy NE9 "Sites of Local Conservation Importance" in the far south of the site;

> Quarry Buffer Zone under Policy S/NR4 "Bolton Woods Quarry Buffer Zone" in the eastern part of the site; and

> Highways and Cycle Network Safeguarding under Policies TM10 "The National and Local Cycle Network", TM20 "Highway Improvements & Cycle Way Improvements" and D10 "Transport Corridors" in the western part of the site.

A full assessment of the application proposals against the adopted development plan is included within the Supporting Planning Statement.

Emerging Local Plan

BMDC has not yet adopted its new Core Strategy. However, the document is at an advanced stage with the Publication version issued for consultation in February 2014. The Core Strategy is expected to be submitted for Examination in the latter part of 2014.

Core Strategy DPD Publication Version
The Core Strategy DPD is currently at the Publication stage and will form part of BMDC's new Local Plan which will gradually replace the policies within the RUDP. Bradford's new Local Plan will cover the period up to 2030 and will guide strategic development within the District. Whilst the Core Strategy does not allocate specific sites for development it does identify strategic locations for development including the Shipley and Canal Road Corridor. The following strategic draft policies are of relevance to this application:

> SC4 'Hierarchy of Settlements' – details the proposed hierarchy of settlements in the District stating that the Regional City of Bradford (including Shipley and Lower Baildon) will be the prime focus for development in the District.

> BD1 'City of Bradford including Shipley and Lower Baildon' – states that the Regional City of Bradford (including Shipley and Lower Baildon) will accommodate 28,650 dwellings and approximately 100 hectares of new employment land in the period up to 2030.

> EC3 'Employment Land Requirement' – sets a planned requirement for 135 hectares of employment land within the district including 100 hectares within the City of Bradford met from a variety of sources.

> EC5 'City, Town, District and Local Centres' – relates to sustaining and enhancing the District's hierarchy of centres requiring the application of the sequential test and retail impact tests for planning applications for main town centre uses that are not in an existing centre or are not in accordance with a Development Plan Documents.

> HO1 'Scale of Housing Required' – details the principle for achieving sustainable housing growth in the District.

> HO2 'Strategic Sources of Supply' – requires housing need to be met in part through additional new deliverable and developable sites allocated for housing development within the forthcoming Local Plan Development Plan Documents.

> HO7 'Housing Site Allocation Principles' – states that the sustainable allocation of sites within the Shipley & Canal Road Corridor AAP will be based on a range of key sustainability principles.

> EN1 'Open Space, Sports and Recreation' – relates to existing and proposed open spaces and recreation facilities. These will generally be protected from development unless alternative equivalent or better provision is provided.

> EN2 'Biodiversity and Geodiversity' – seeks to protect and enhance biodiversity and geodiversity in the District.

Shipley and Canal Road Corridor AAP
The Canal Road Corridor has been identified by the Council as an area with significant regeneration potential. The AAP recognises a number of key drivers for change including the Corridors potential as a strategic location for new development, and its potential to make a significant contribution to the regeneration of the District and to deliver the necessary levels of housing and development in the area.

The Shipley and Canal Road AAP is the first stage in the preparation of the AAP DPD. The main purpose of the document is to develop the vision and key objectives for the area, identify the key issues and options for delivering development and prompt interested parties to put forward sites and proposals for consideration.

Of relevance to this application is the central section of the AAP. This represents the main opportunity for delivering housing and economic growth in a sustainable manner. Given the existing uses present in the central section, a transformational strategy is proposed to make the area an attractive residential location. The following areas within the AAP have been identified for the proposed types of development (see table 1 below):

Approved New Bolton Woods Masterplan
On 9 October 2012, the Council's Executive Committee considered the proposals for CRUVL's draft New Bolton Woods Masterplan and resolved that the Masterplan as prepared and submitted by CRUVL be approved and become a material consideration that can be taken into account in the consideration of any planning applications.

The Masterplan covers the central section of the Canal Road Corridor Regeneration Area, and is considered by the Council to have the potential to make a significant contribution to meeting a range of key regeneration objectives for the Bradford District including:

> The provision of new homes across the District annually in order to meet the housing needs of the growing population;

> The stimulation of much needed economic development through assisting the creation, consolidation and growth of local businesses;

> The attraction of new property development investment to address the long term negative impacts caused by market failure endemic within parts of the District; and

> The improvement of accessibility to new jobs, training and skills development opportunities for local people.

National Planning Policy Framework

The overarching policy objective of the NPPF is the presumption in favour of sustainable development. Paragraph 6 of the NPPF highlights that the policies in paragraphs 18 – 219, when taken as a whole, constitute the Government's view of what sustainable development means in practice. The NPPF at paragraph 7 indicates that there are three dimensions to sustainable development: economic, social and environmental.

Table 1: Proposed Uses Within AAP Development Zones

Area	Zone	Name	Emerging Proposal
New Bolton Woods	NBW2	Employment area/Poplars Farm	Residential and open space (Bradford Wildlife Area)
	NBW3	South Poplars Park Road	Residential and open space (Bradford Wildlife Area)
	NBW4	Employment area Stanley Road	Residential / employment and neighbourhood centre including; retail / community / health / business / to meet local need
	NBW5	Land north Poplars Park Road	Residential and open space
	NBW6	King George V Playing Field	Playing pitch and primary school/ residential
	NBW7	Livingstone Road Flats	Residential redevelopment
	NBW11	Poplar Crescent	Residential and open space

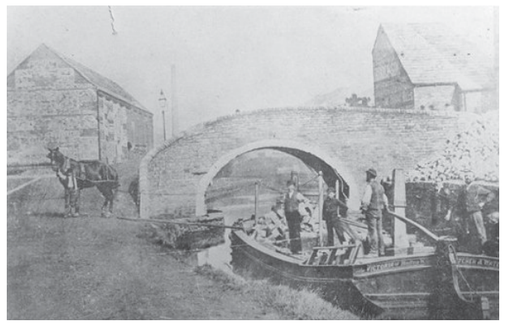
2.3 The Site History

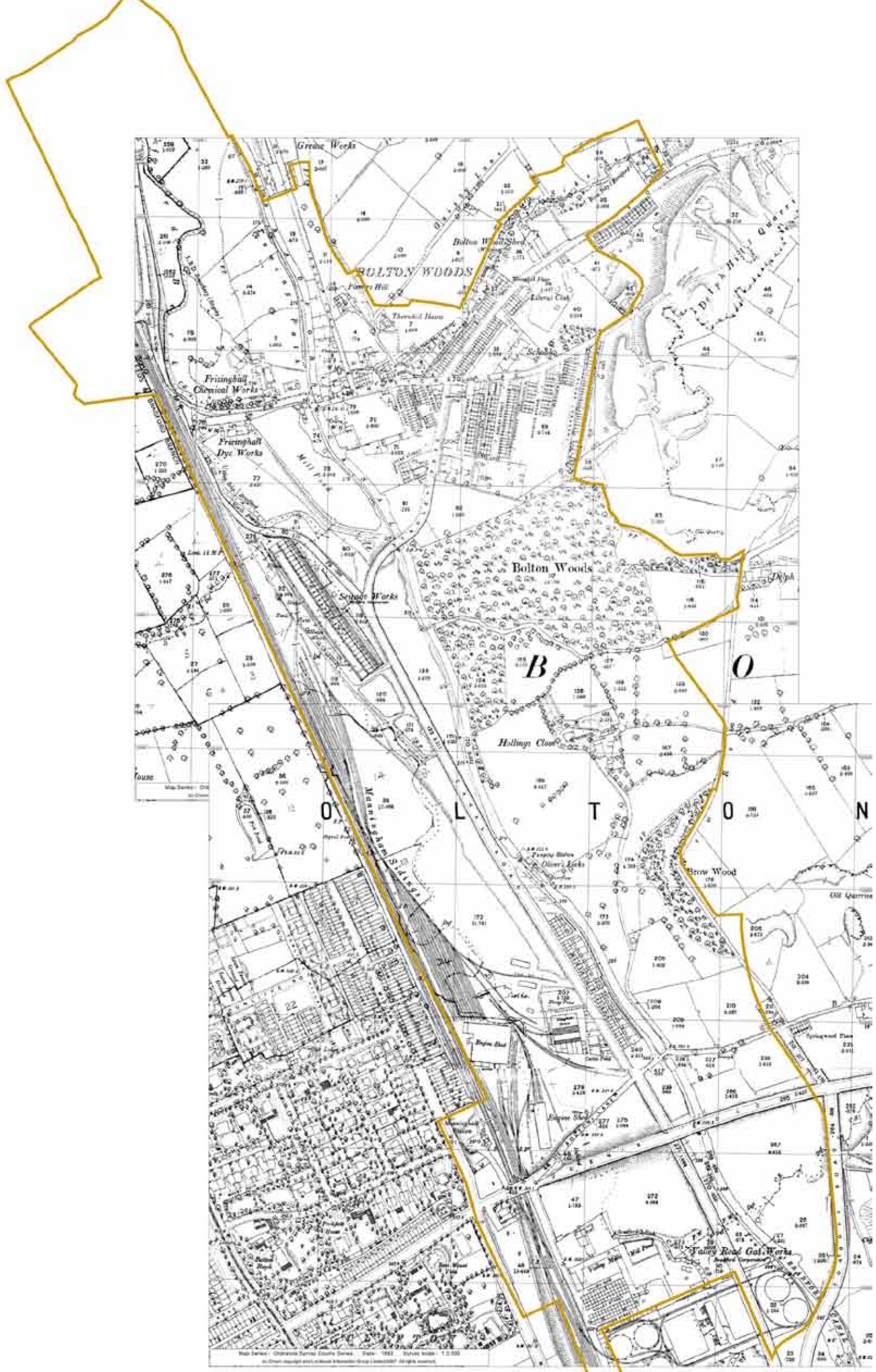
Our investigation into the history of the area shows that Bolton Woods has a long history, having developed as a small village on a busy junction between Bradford and Shipley then later expanded to serve the nearby quarry. It was once thriving and full of shops but became isolated and declined when Canal Road was cut along the valley bottom depriving it of passing trade.

It is a strong and close-knit community that has retained a strong identity notwithstanding social and economic problems. Further problems have stemmed from poor quality housing development such as the former Council flats which are now scheduled for demolition and redevelopment. The Bolton Woods community is however a good nucleus on which to build a new neighbourhood.

Our review of the historical growth shows that Bolton Woods used to sustain a healthy number of local shops. In the 1920s Bolton Woods supported 28 shops. Today only 2 small shops exist in the area. Over the following pages we describe how Bolton Woods grew to be a bustling village and subsequently declined.

View up Bolton Hall Road


Old Venture Bridge



1892 Bradford Canal Road

Initial JV Study Area

2.3 The Site History

1890s

Bolton Woods developed around the crossroads of Stanley Road and Livingstone Road. At this time Stanley Road was the main road linking Bradford and Shipley. Development of the village began in 1869 to house workers from the stone quarry to the north east of the village and workers from the local textile industries located along the canal to the south west of the village. Building began at the bottom of the hill with the highest quality housing built there in order to attract buyers.

The lower quality working class housing was placed ‘out of sight’ at the top of the hill. By 1892 many of the streets and houses still present today had been built.

The valley bottom contained a number of textile and chemical industries located along the canal. A mill pond and sewage works was also in existence in the valley bottom between the railway and the canal.

1920s

The map opposite shows that there was very little change to the form of the streets within the village since the 1890s. The main changes were to the existing buildings with many houses converting rooms facing the street into shops. By 1920 Bolton Woods had 28 shops and it would probably have been possible to get most things without having to leave the village. The adverts on the previous page include 2 grocers, 2 fishmongers and a butchers.

Major changes in the area occurred to the south-west of the village. The brook was re-aligned in order for Canal Road to be built along the side of the railway. For the first time in its history Bolton Woods was no longer on the main route from Bradford to Shipley. The mill pond was also removed and the sewage works relocated to a different part of the valley. To the north-east the quarry continued to expand.

1960s -Today

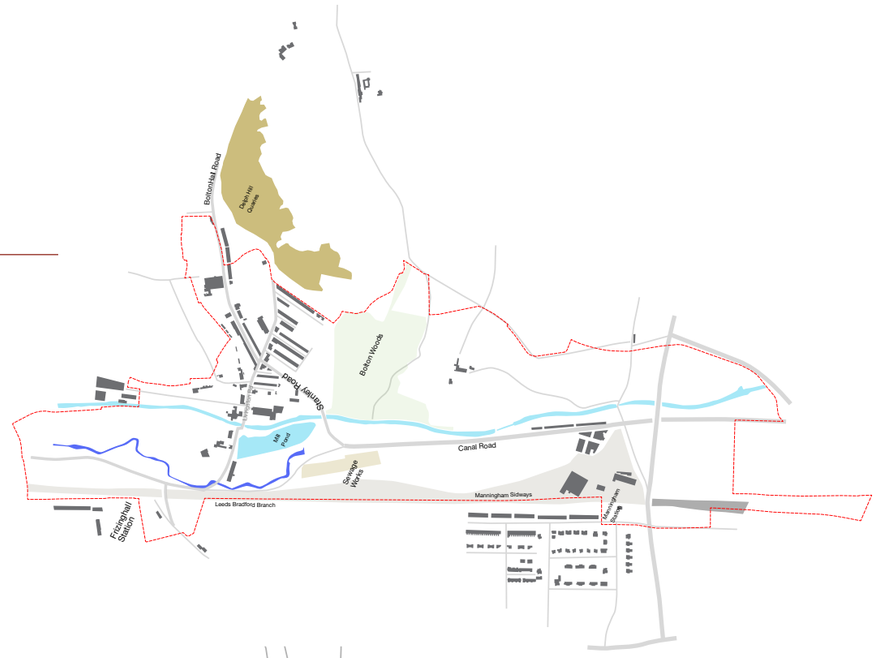
Looking at the map opposite, there were very few changes to the original fabric of Bolton Woods village. As individual ownership became more popular many of the houses were modernised with indoor bathrooms and WCs. Electrical lighting was also installed in many of the properties. The only change to the street pattern is the growth of the village to the west along Gaisby Lane.

In the early 1960s (after the map opposite was drawn) a large number of back-to-back houses were demolished. On Bolton Hall Road the land was left vacant but along Livingstone Road the houses were replaced by the existing local authority maisonettes.

To the south-west of the canal the sewage works were removed and used as a playing field. Along Canal Road a number of industrial buildings began to develop on either side. Many of these are still here today.

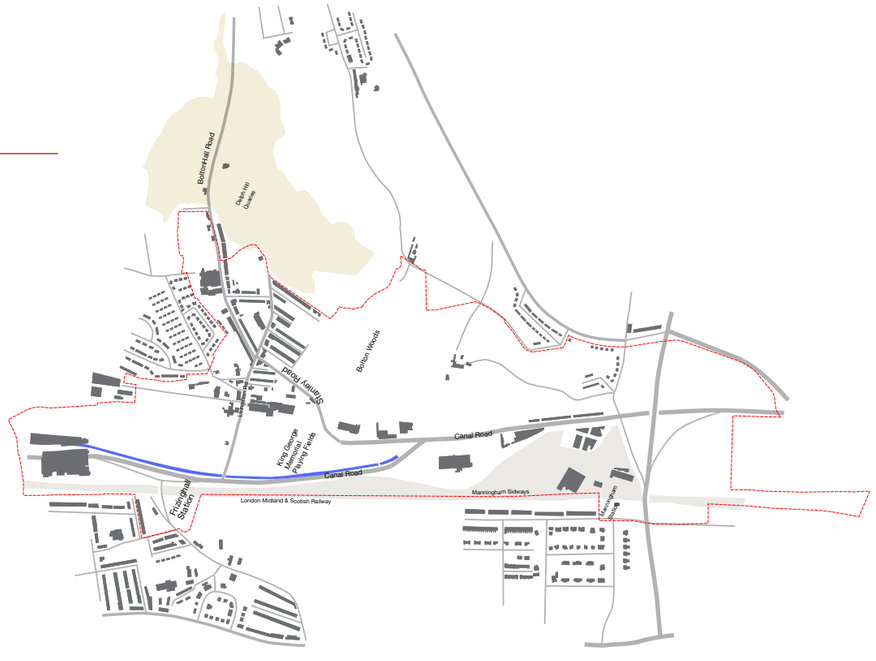
Today the area remains relatively unchanged since the 1960s with the exception of the demolition and redevelopment of Gaisby Mill on Gaisby Lane for 45 new houses by Gleeson Homes and the closure of most of the shops along Bolton Hall Road now only two shops remain; a general store and a fish and chip shop.

1890s



1920s

1960s



2.4 The Site Today

To determine the quality and capacity of existing social infrastructure to meet the needs of existing and future residents within the area, a mapping and capacity exercise was undertaken of the existing social infrastructure locally. This included a review of the existing provision of primary and secondary schools, health facilities, community centres, sports and recreation facilities.

Ward Boundaries

The site is in both *Windhill & Wrose* and *Bolton & Undercliffe* wards. The scheme will look to connect the two currently separated communities, with the local centre being a focus for the existing housing as well as the new neighbourhoods.

Schools

The performance and reputation of schools is an important consideration in the housing choices of families. Properties in the catchment area of high performing schools attract a premium whereas family homes close to poorly performing schools may take longer to sell.

Primary Schools
Bradford Christian School is the only primary school located directly within the Partnership area with a further five primary schools located within a 1.5 mile radius including the nearby Poplars Farm Primary, Frizinghall Primary, Swainhouse Primary, Grovehouse Primary and St Francis Catholic Primary. The capacity and performance of each school is set out in the table in the following section.

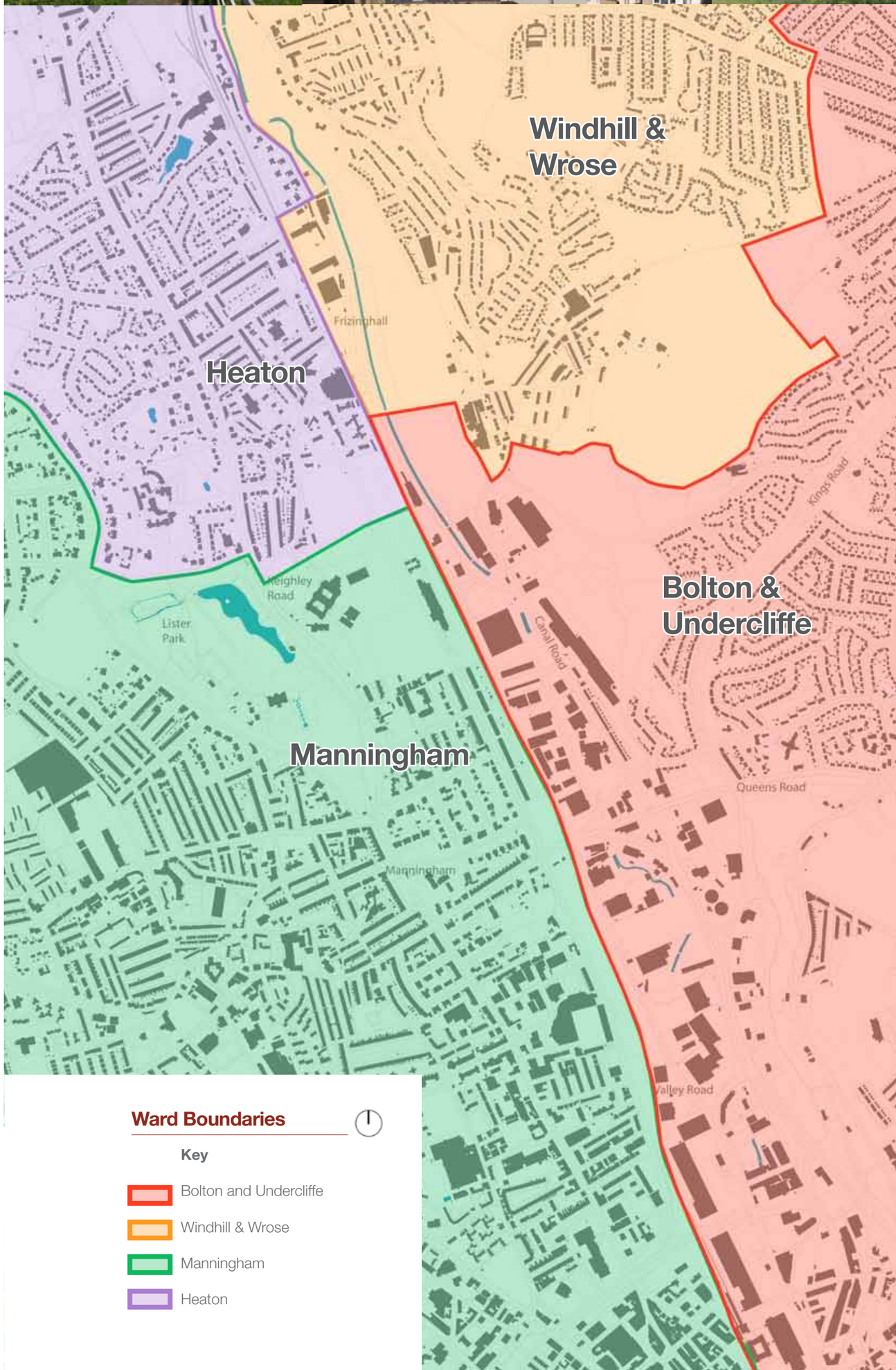
The development of an estimated 1,200 new homes over the next 15 years within the area would, together with forecast population growth, and capacity forecasts generate the need for additional pupil places that will probably not be met by the existing primary school network. This is expected to result in the need for additional school places through the expansion/relocation of existing primary schools locally or through the development of a new primary school to meet demand for places. The masterplan proposes to provide a new primary school within the Local Centre and CRUVL is working with BMDC to deliver this facility.

Secondary Schools
The nearest state secondary school to the Partnership area is Hanson Academy, a large specialist technology college catering for 11- 18 year olds with 1,790 pupils, of which 288 are sixth form students.

The school underwent a major refurbishment and rebuilding programme as part of Phase 2 of the Building Schools for the Future Programme. The new facilities opened in July 2011 and 2012.

A number of other secondary schools are located nearby including a number of faith schools including the Bradford Christian School, St Joseph's Catholic College and Immanuel CE College and Bradford Grammar School.

Education Contributions from New Residential Development
The planning requirement regarding education provision for new residential development is set out in the Bradford Replacement Unitary Development Plan (RUDP) under Policy CF2 which requires that 'where new housing proposals would result in an increased demand for educational facilities which cannot be met by existing schools and colleges, the Council will seek to enter into a planning obligation under Section 106 of the Town and Country Planning Act 1990, in order to secure the provision of, or contribution towards, new or extended facilities.'



Ward Boundaries

Key

- Bolton and Undercliffe
- Windhill & Wrose
- Manningham
- Heaton

2.4 The Site Today

The level of contribution required is usually determined by BMDC's Education officers based on the existing surplus of places within the existing school system and the estimated number of new school places generated by the development. This is however subject to Section 106 Viability Testing and should be considered in that context as part of the planning application for New Bolton Woods.

Discussions with the Education Schools and Capital Manager indicates that a new primary school will be required to meet the education needs of the new community based on the estimated 1,200 new housing numbers and projected population growth with public funding potentially available to deliver the new school. CRUVL is working with the Council to establish how this will be funded and delivered within the masterplan. It will be a very important component of the new Local Centre. Schools should generally be located close to a centre and at the heart of the community where they are most easily accessible.

This is an important aspect of the masterplan and can only be delivered by developing part of the current King George V playing field.

Health Facilities

No existing health facilities are located within the Partnership area with the Frizinghall Medical Centre the nearest health facility located approx 1.5 miles from the area to the west of Canal Road, the other side of the railway.

The proposals to develop an estimated 1,200 new homes over the next 15-20 years or so will result in a need for new heath facilities to be developed locally to meet increasing demand for health services. The proposals for the area (set out later) include the development of a new local centre that should therefore seek to provide for new health and community facilities in partnership with the Bradford District Clinical Commissioning Group and BMDC.

Car ownership levels are extremely low in Bolton Woods increasing the need to make health provisions local and within walking distance of residents.

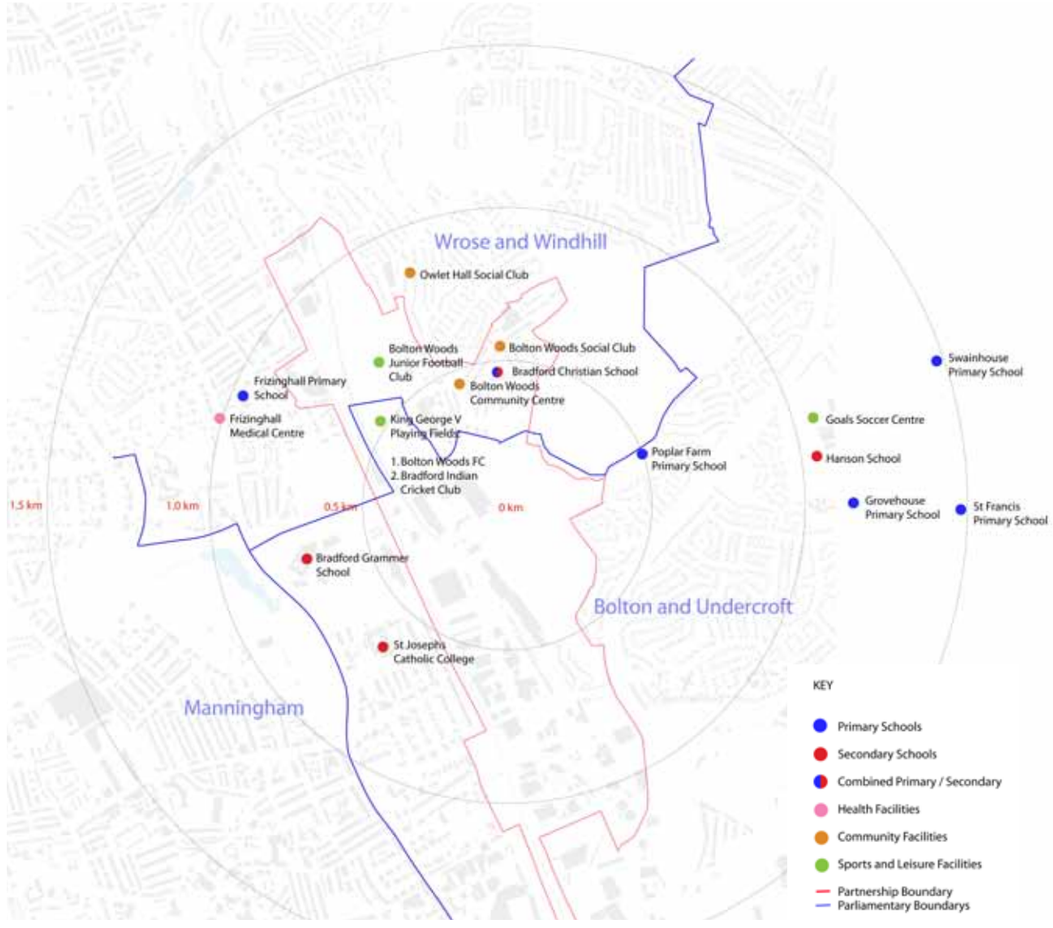


Table 2: School Capacity Study

School	Distance from Partnership area (centre of Poplar Farm Road)	Capacity (Number of Places)	Surplus Pupils (or Surplus Places if -ve) 2012- 2015	Performance based on Key Stage 2 Average Point Score 2010	Notes
Poplar Farm Primary School	0.1 miles	210	18 (8.5%)	27.3	
Bradford Christian School **	0.4 miles	201	-34 (-17%)		
Swainhouse Primary School	1 mile	420	-58 (-13.8%)	25.2*	A new extension was built in 2009 to provide a centre of excellence for deaf and hearing impaired children
Frizinghall Primary School	1.1 miles	393	47 (11.2%)	24.3	
Grovehouse Primary School	1.5 miles	420	2 (0.4%)	27.3	
St Francis Catholic Primary School	1.5 miles	243	154 (63.3%)	26.3	Improvements during 2010 included an extension and internal improvements to increase capacity

* 2009

**All years school - no separate data for Primary School

2.4 The Site Today

Community Facilities

Existing community facilities within the Partnership area are limited with the Bolton Woods Community Centre the main facility locally. This provides a mix of services including an early years nursery, crèche, youth group, programme of courses and advice, social events for the elderly and rooms for hire.

The area also maintains two social clubs - the Bolton Woods Social Club and the nearby Owlet Hall Social Club, which provide venues for a variety of social events.

The Frizinghall Allotments located adjacent to Canal Road have been largely disused since 2000 and are now closed due to contamination with arsenic and other toxic substances caused by historical operations at the former chemical works.
After consultation with the local community and staff of the existing community centre, it is felt that the development could include proposals for new community facilities within the local centre to serve an expanded local population. These would be most appropriately located close to shops around Stanley Road in the Local Centre. Uses such as child-care, medical services, post-office and other uses to benefit the community will be delivered where possible to create a strong and sustainable Local Centre.

Sports and Leisure Facilities

The area accommodates large areas of public open space. This includes a number of sports and leisure facilities including the Bolton Woods Junior Football Club on Powell Road and the King George V Playing Fields off Canal Road. These are home to a number of local sports clubs including Bolton Woods Seniors FC and the Bradford Indian Cricket Club.

In addition, a privately run 5-a-side football centre is located to the east of the area and is owned and managed by Goals Soccer Centres with 13 5-a-side astro turf pitches and associated facilities.

We believe there is strong potential to incorporate and enhance sports and leisure provision within our masterplan as part of a healthy mix of community uses enhancing the vitality of New Bolton Woods. This approach should be thought through carefully in the on-going planning and design work. The proposals will also allow for children's play space to be incorporated in the masterplan, some of it in landscaping works. A key element of the sports and leisure strategy is for health and well-being in the community to be enhanced by improved formal facilities but also easier to use roads and landscaped routes. These will encourage walking, cycling and running etc.

Retail

There are very few shops in the immediate area, as identified in the historical analysis. The nearest food shop is approximately 1.5km from the site, outside Bolton Woods along a busy main road. Low car ownership in Bolton Woods makes it difficult for people to access shops. They currently tend use public transport with heavy shopping bags or costly taxi services. Like any successful community, local people need and deserve local shops for convenience and also as a social focal point for the local community.

New retail space will provide for the existing community as well as new residents coming into the area. This will consist of two neighbourhood food stores and other local shopping facilities.

This retail need has been consulted on with BMDC and the existing community. Local residents identified a retail offer as a high priority for the area.

2.5 Urban Context

The figure ground plan to the right shows the current urban structure of the area. This plan shows just the buildings and removes all other detail. It is a useful device for showing the density and grain of an urban area together with the extent to which streets and other public spaces are enclosed by buildings.

The figure ground plan shows the site as an open area in the valley surrounded by neighbourhoods on higher ground. On the western side of the valley stands the Victorian neighbourhood of Manningham. This is built along Manningham Lane which can be clearly seen on the plan and around Lister Park. The gallery in Lister Park together with the Bradford Grammar School and Challenge College are within landscaped settings.

To the east the development is more suburban in character built on the eastern slopes of the valley and the stone quarry. The only historic form in this area is the remnant of the original Bolton Woods village centre immediately to the north of the site.

The valley bottom is characterised by large footprint buildings including the Arnold Laver timber yard and the industrial estate between Canal Road and the railway. These buildings do not relate to the road and it is difficult to pick out any urban form in this area.

2.6 Heritage Context

The site's location in a valley means that it faces the neighbourhoods of Manningham and Heaton. The World Heritage Site of Saltaire is 2 kilometers away, but the development site cannot be seen from here.

There are no conservation areas on the site itself but the design of the masterplan has considered its position facing neighbourhoods such as Manningham, which has some focal buildings, including the Grade II* listed Lister Mill. This, along with the grand Lister park, helped inform the masterplan to complement the urban structure by mirroring this accross the valley.

Cartwright Hall - Grade 2 listed

Lister Mill, Mannigham - Grade 2* listed

Conservation Areas & Listed Buildings

Key

- Grade II* Listed Buildings
- Grade II Listed Buildings
- Conservation Areas

2.7 Road Network

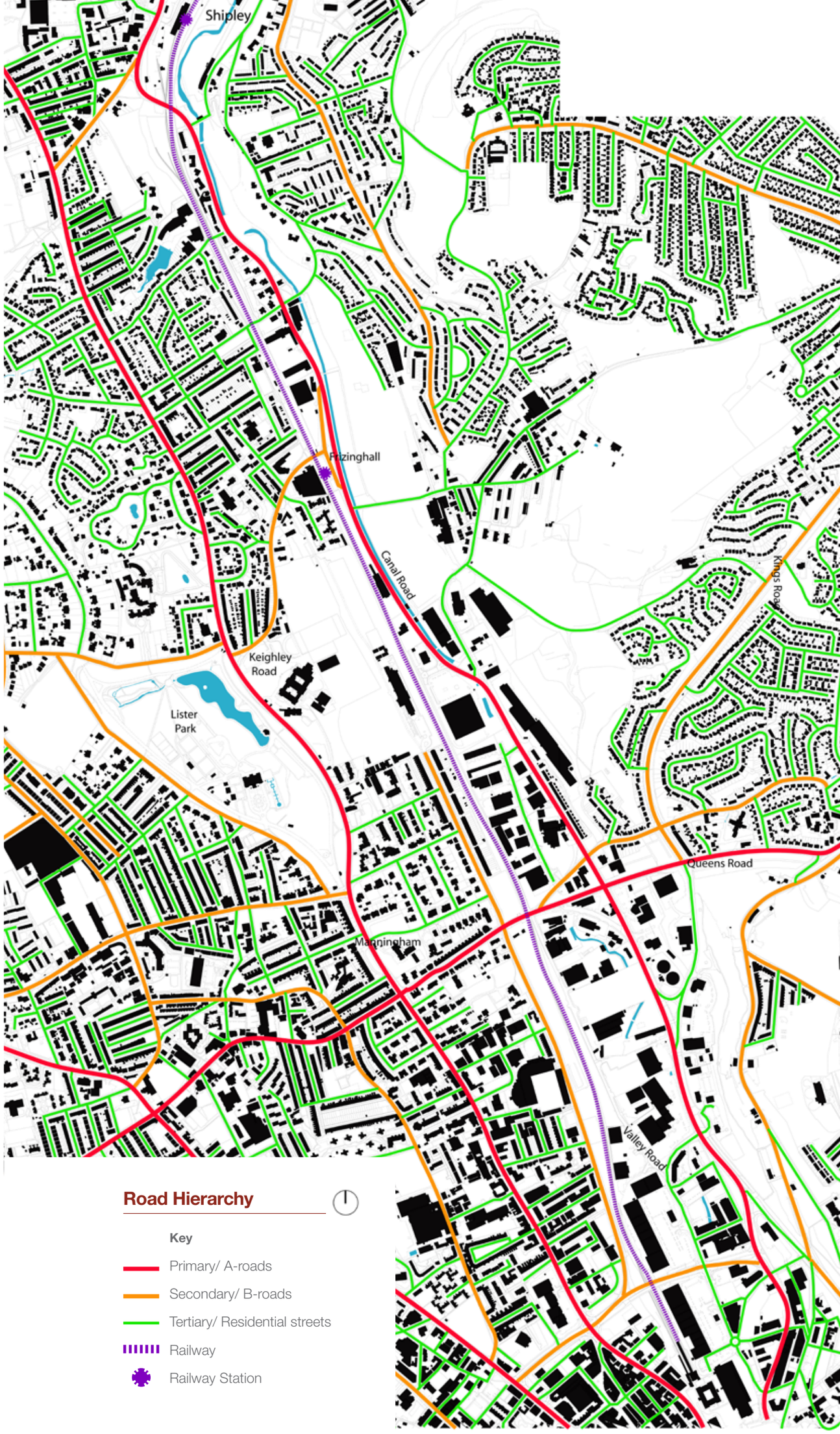
The plan to the right shows the road hierarchy of the area. The red routes are the two primary roads; Manningham Lane is the original route and is a lively high street lined with shops. It is also the main bus route into the city centre.

Canal Road in the valley bottom is the main arterial traffic route to the north of the city linking Bradford to Shipley. This is a much later route dating from around 1900 and now linking directly into the Shipley Airedale Road, which is part of Bradford's ring road. The street carries around 40,000 vehicles a day and is heavily congested during peak periods.

These two roads are linked by Queens Road, a Victorian cross-town route which traverses the valley on a viaduct. There are two links from this viaduct to Canal Road, Bolton Lane and Station Road, both of which create constrained junctions due to underlying traffic issues.

The orange routes show the secondary streets and the green shows the local street network. Apart from Queens Road there is only one other cross-valley route at Frizinghall Road. Other than this the street networks within each neighbourhood are very self-contained and the area as a whole feels very fragmented.

Due to the pressure of traffic on Canal Road a number of options for improving capacity and reducing congestion have been considered including junction improvements and better traffic management. Work is being carried out to improve Stanley Road junction. Alternative modes of transport are important to the development.



Road Hierarchy

Key

- Primary/ A-roads
- Secondary/ B-roads
- Tertiary/ Residential streets
- Railway
- Railway Station

2.8 Public Transport

The plan to the right shows the public transport network of the area. The railway provides excellent links to Bradford and Leeds and there are a variety of local bus routes helping to connect neighbourhoods.

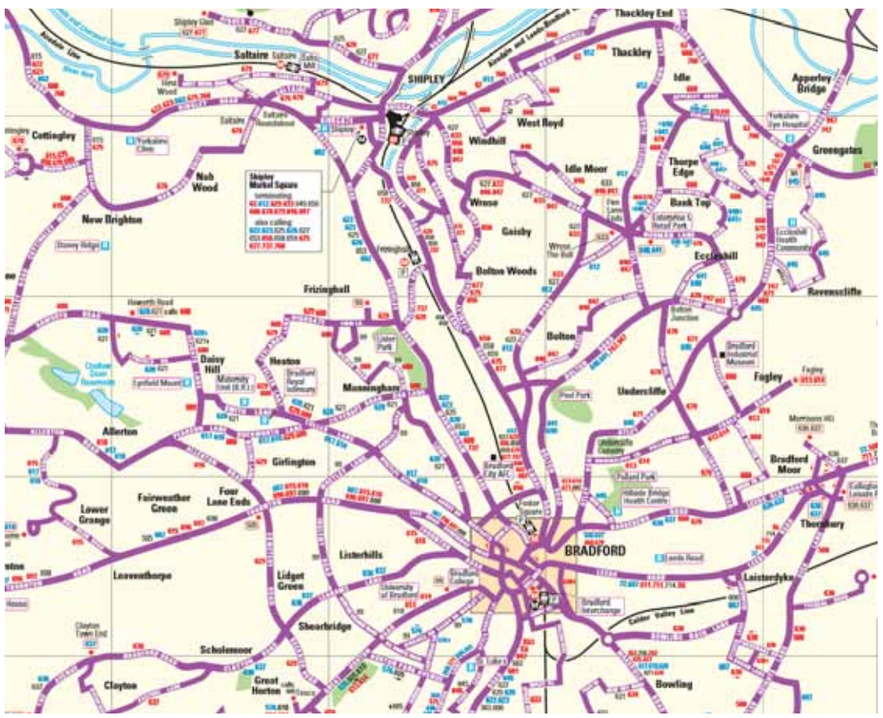
The Corridor has a newly improved bus service. A Quality Bus Corridor (QBC) has recently been introduced along Manningham Lane linking Keighley and Bradford.

This stretch of the Corridor has a local railway station at Frizinghall on the line from Leeds/ Shipley to Bradford Forster Square Station with an excellent service. Trains are half hourly through the day and hourly late evening. Journey time to Bradford Forster Square is 6 minutes and Leeds is 22-27 minutes depending on the exact service. The line also extends to Skipton and Ilkley. Fares to Bradford are also very low; with an anytime same day return under £2.00. A direct service to London also operates from Bradford Forster Square and connections can be made from Shipley or Leeds to further regional and national stations.

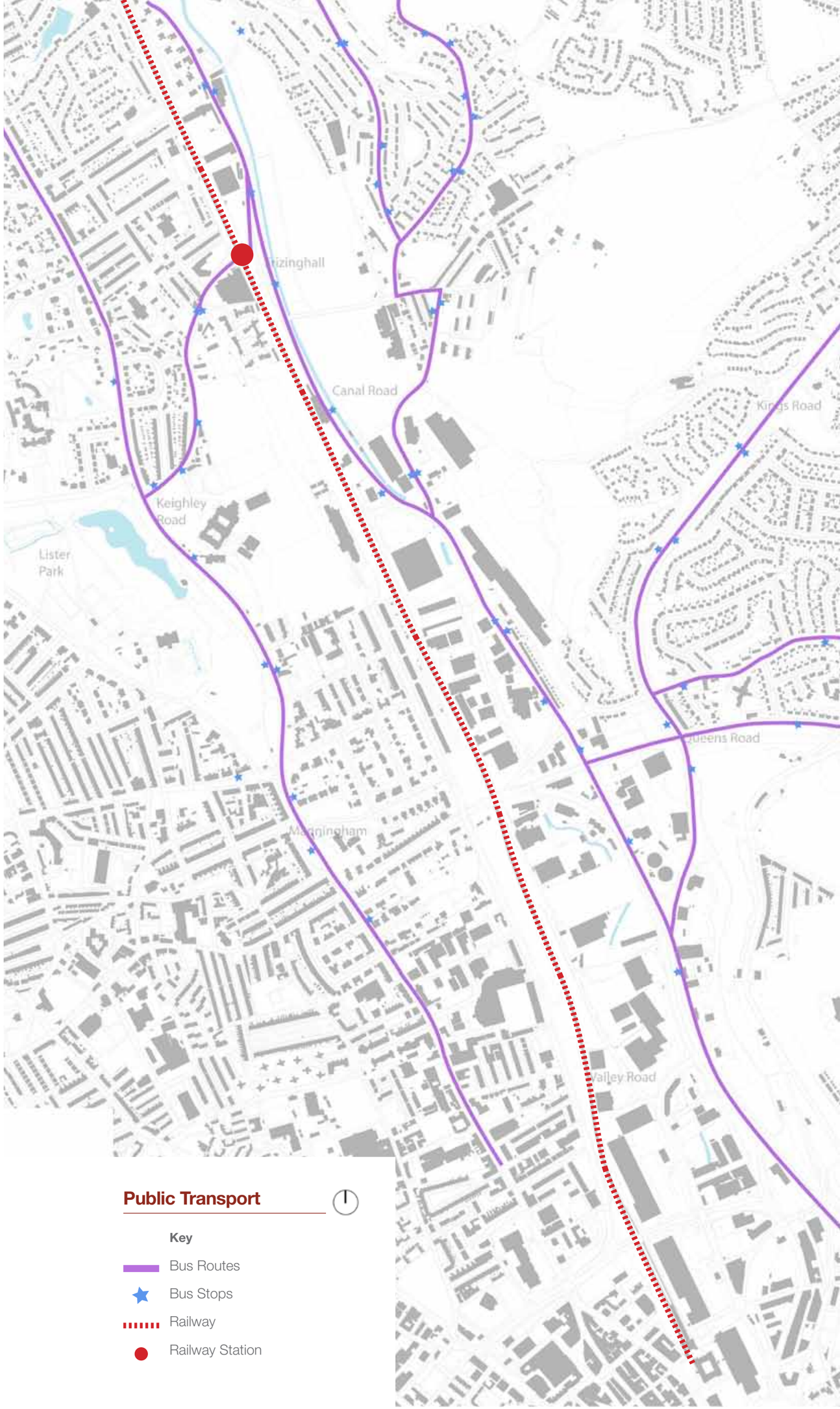
Cycling and walking along the corridor is not currently easy. A cycle route has been developed along the valley and a Sustrans route (66) has very recently been partially implemented. The Partnership is engaging in this delivery process to improve cycling infrastructure.

Pedestrians are provided with pavements along Canal Road on broad footpaths. However, this is not a pleasant environment due to pollution, noise and spray. The railway is a highly restrictive barrier to East-West cross-valley movements with a lack of crossings except at road junctions.

The urban nature of the site means that existing connections can be exploited and avoids the need for substantial new infrastructure. This creates opportunities to provide viable alternative and sustainable forms of transport unlike comparative out-of-town greenfield sites. These existing characteristics can be capitalised upon to enhance the available services and connections for both existing and new residents.



Bradford Area Bus Map

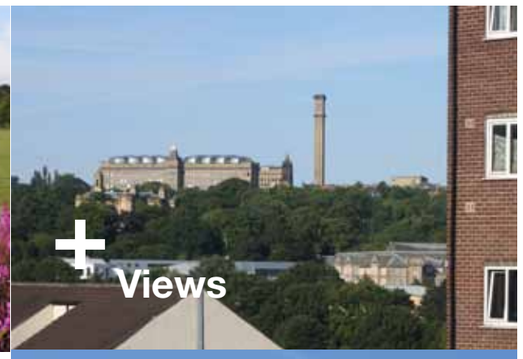


2.9 Open Space

The public realm plan (opposite) shows the areas where public access is possible including streets, public squares and open spaces. This highlights the two major open spaces of Lister Park and Bolton Woods as described below.

The area is very well provided with open space as illustrated on the plan to the right. The best area of open space is Lister Park, a fine Victorian amenity with a large lake, recreational areas and an art gallery. To the east of this the Grammar School also stands in landscaped grounds. Lister Park is mirrored on the eastern side of the valley by Bolton Woods. This includes a small remnant of woodland and surrounding land, which has limited public access and is not public open space. This open area runs up the valley sides to the quarry which has been worked in such a way that it can't be seen from within the valley. The valley floor also includes playing fields to the north of the site running into a linear park leading into Shipley.

Poplar's Farm, a site of local nature conservation value and designated as a Bradford Wildlife Area (BWA) in the RUDP is located within the application site.



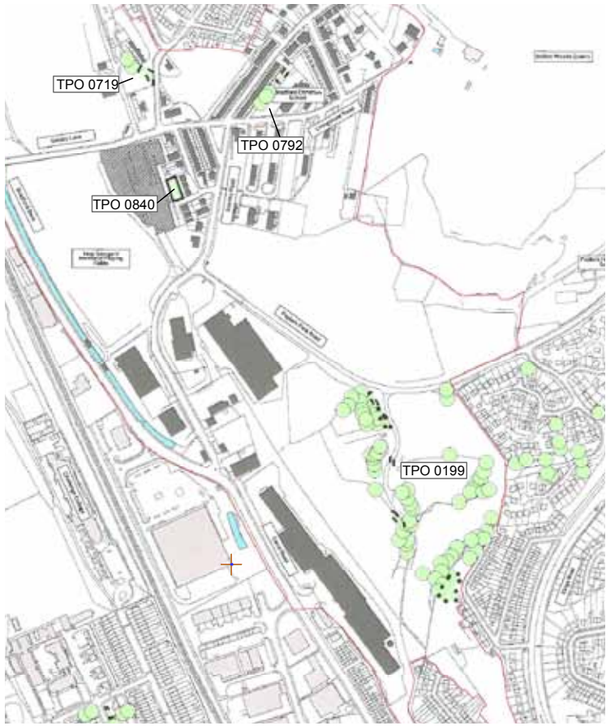
2.10 Trees & Wildlife Areas

The area is known for its green spaces and there are several areas of high quality trees and copses. To ensure we took the ecology of the area into accont when designing, ecology specialists TEP were commissioned to carry out a detailed tree survey of the area.

The design of the masterplan has taken into consideration feedback from TEP, with revisions showing improvements in woodland connectivity, the retention of young plantation woodland in the north part of the Poplars Farm wildlife area and the removal of housing from the core of Brow Wood. There are still opportunities to make further improvements through linear tree/structured planting in certain locations.

TEP also conducted an abroricultural survey of the site which will assist in conserving important trees. Mapping of the Tree Preservation Orders will also help to ensure that these important trees are protected during construction and integrated into the design.

BDP completed an ecology/biodiversity assessment of the Shipley Canal Road Corridor in June 2011. Integrating biodiversity into open space and green infrastructure plans would see further improvements in this area.



Wildlife Areas & Trees

Key

- Category A (Trees of high quality and value)
- Category B (Trees of moderate quality and value)
- Category C (Trees of low quality and value)
- Category R (Trees unsuitable for long term retention)
- Wildlife Areas

3. The Site

3.1 Site Description and Ownership

Where the previous chapter detailed an understanding of the urban form of the area this chapter focuses on the site constraints. The plan to the right shows the ownership of the land inside and around the red line. Below is a series of panorama photographs taken at different stages throughout design development.

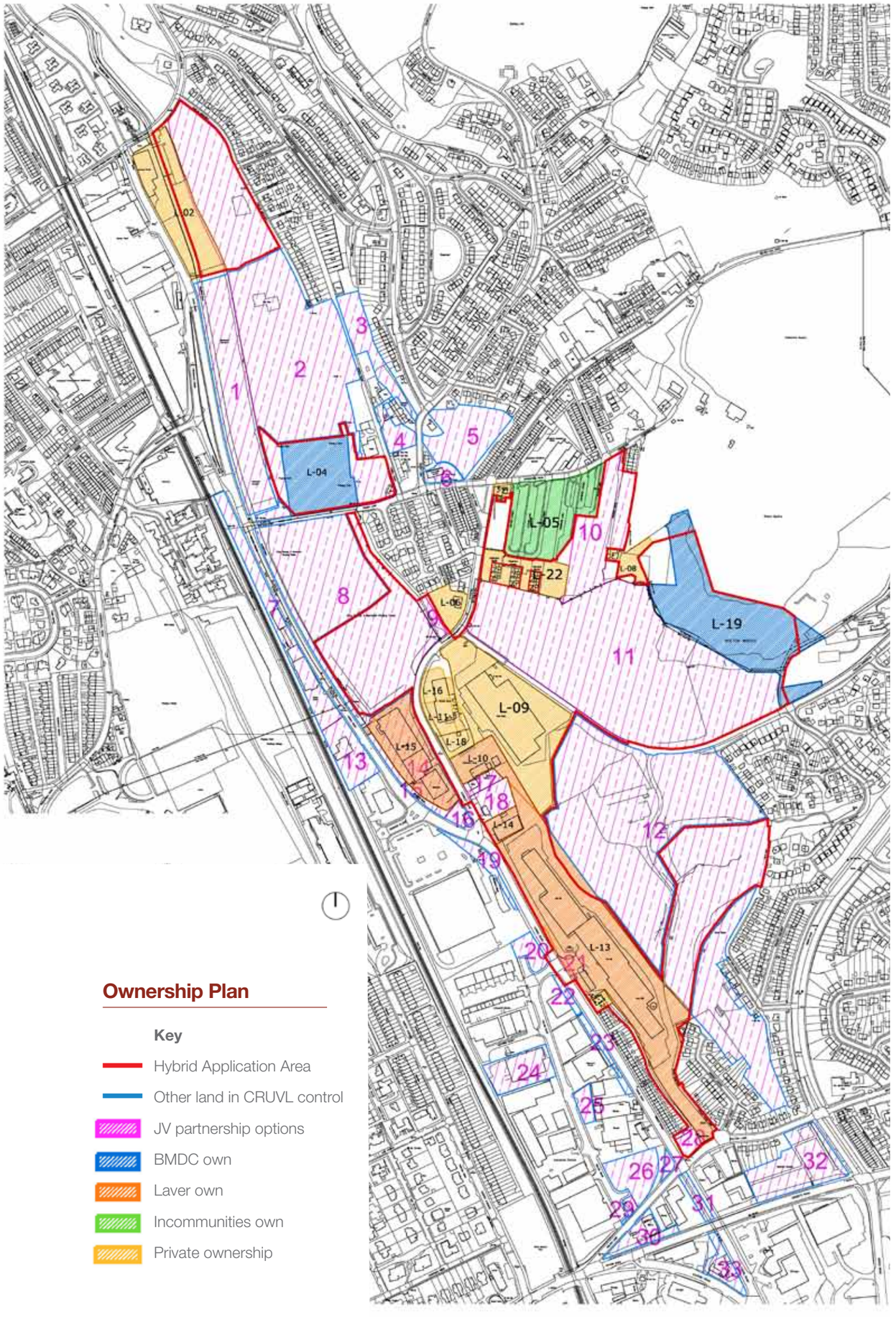
The site consists of land which the JV partnership, CRUVL, have options over; this is indicated in pink. Within this there are parcels of land owned by Lavers and BMDC itself. There are a number of sites which are in private ownership and the council is looking to CPO these in order to bring forward this important and much needed regeneration scheme.

Gaisby Lane 2011

Poplars Park Road 2011

Burley Street 2014

Poplar Crescent 2014



Ownership Plan

Key

- Hybrid Application Area
- Other land in CRUVL control
- JV partnership options
- BMDC own
- Laver own
- Incommunities own
- Private ownership

3.2 Site Constraints

Civic Engineers, the appointed engineers of the partnership have undertaken a review of the key technical issues and constraints to the development of the area. A summary of the key findings is set out below.

Utilities and Services

GIS information shows utilities primarily to the west of the site, within Canal Road and Stanley Road. Utility providers' plans have been obtained for the entire site area and those main services and sewers which must be retained or diverted to facilitate development are shown on the plan opposite.

Within the site boundary the majority of utilities are shown running along Stanley Road and as such preserving this alignment within public open space would limit the requirement for utility diversions.

Further constraints are posed by the following services:

> Gas Mains and Water Mains supply pipes run from south to north across King George's Field

> A network of surface and foul water sewers run across the site from Poplar's Park Road to Canal Road

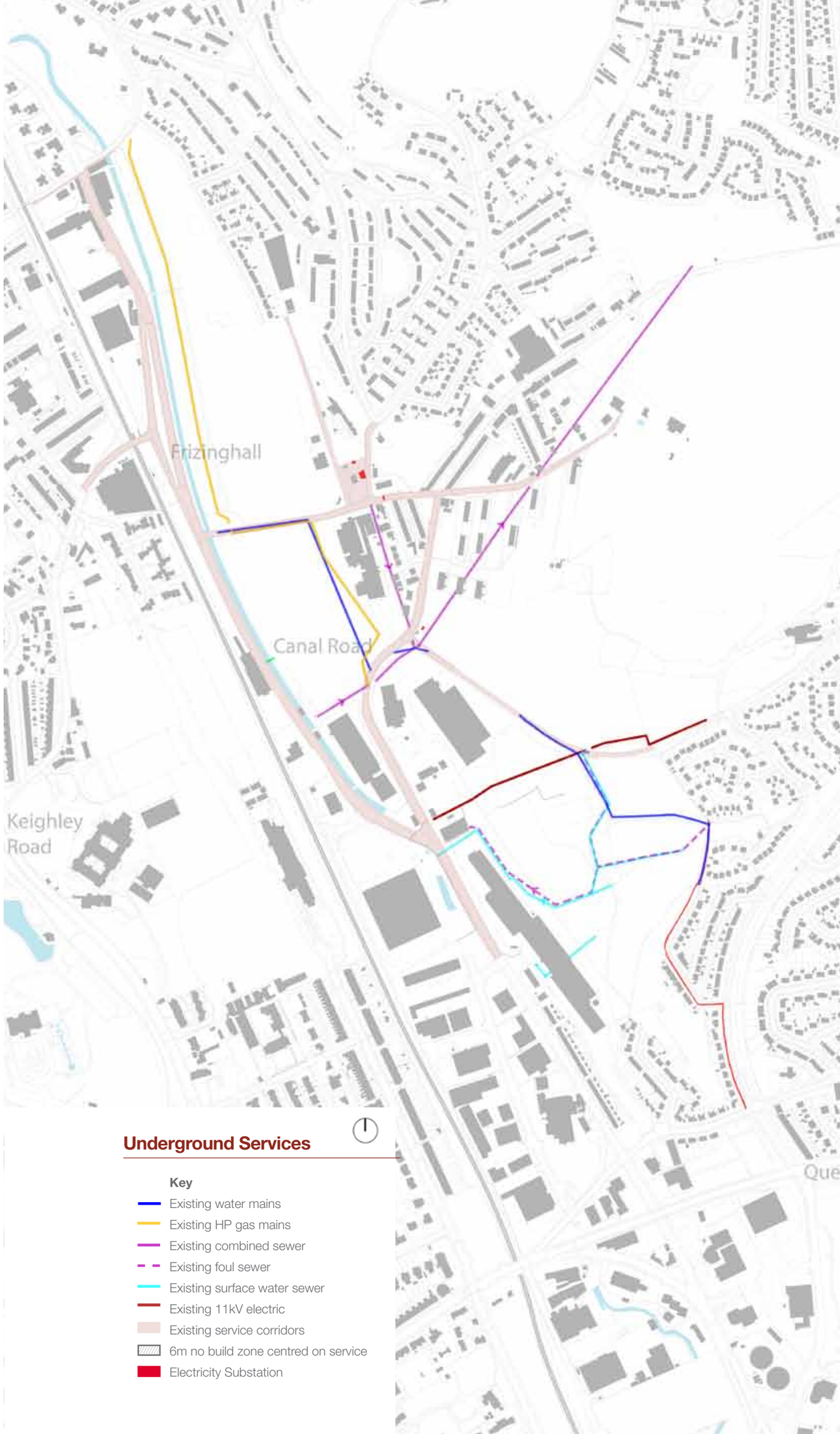
> An electricity cable runs above ground from Poplar's Park Road to Canal Road.

> The Bradford Esholt Tunnel runs at depth beneath the site although based on the depth of the sewer and precedent it is expected that building over this sewer will be permitted.

> Large diameter sewers run across the Bradford Beck and outfall to the Bradford Esholt Tunnel.

As well as determining the presence of utilities it has also been important to establish constraints on capacity in the local area as significant reinforcement could potentially be required to serve the development; this will impact on costs and phasing.

A Capacity Assessment and an Energy and Water Supply Strategy has been developed to determine how the demand for energy and water can be reduced, minimising the supply required.



3.2 Site Constraints

Geo-Environmental

Analysis of the geo-environmental characteristics of the area show that the site can be split into two distinct areas.

In order to rationalise the conditions across the site three different cases have been determined which are referred to as the *Hillside, Lavers Yard* and the *Valley Bottom*. These areas are identified on the section and described in more detail on the following pages of this note.

Whilst the ground conditions will not directly constrain the development they will influence the cost associated in constructing different types of building and landscape in different areas of the site. Some examples of how the ground conditions may impact on the cost of development are as follows:

Where suitable bearing strata is present at a significant depth then piled foundations may be required; this would not necessarily present an efficient solution for lower rise, small footprint buildings.

Where dealing with contaminated ground then a potential method of remediation would be to provide a clean capping layer beneath soft landscaped areas to break the pathway between contamination and future end users; the depth of the required capping is likely to be greater in residential private gardens than it might be to public, managed open space.

In ground which is contaminated there is a risk of ground gas. Protection measures are likely to be required within building floor slabs and/or foundations. In such instances higher rise buildings will require less protection/per unit or area of development.

Hillside

Varying depths of Glacial Till (from 0m to 8m in some locations) over Sandstone/Mudstone should allow spread footings to be utilised for low rise properties (to 3 storeys).

Due to the gradient on which the buildings will be constructed careful consideration has been given to how the levels are managed and walls facing up the hill will be designed as retaining structures. Limited previous development means that contamination to this area is unlikely and it is not anticipated that special gas protection measures will be required to houses on the Hillside.

Valley Bottom

Deep made ground over layers of alluvium (including peat in places) over Glacial Till over Sandstone/ Mudstone mean that piled foundation are likely to be required in the Valley Bottom.

The historical development in the valley bottom includes a sewage works and filter beds (circa 1890-1950), Chemical Works and Dye Works (circa 1890-1950) and a Refuse Tip (Circa 1950-1980) as well as a number of other Mills and Works from the mid 20th Century to the present day.

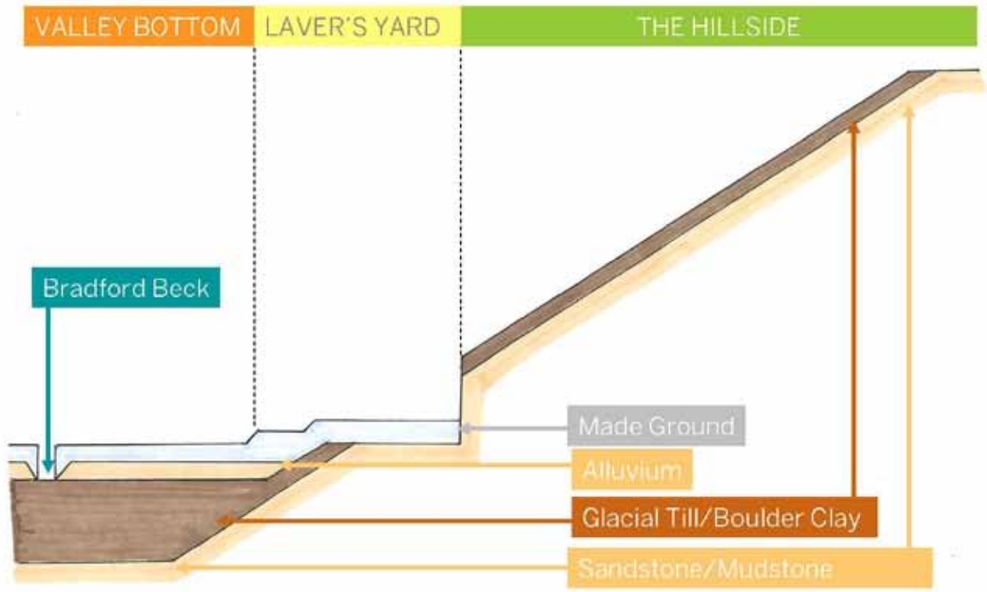
These uses are potentially contaminative and are likely to have left remnant contaminants within the made ground across the area. However, the site can be made suitable for development through simple remediation measures such as the installation of clean capping and potentially ground gas protection measures.

Lavers Yard

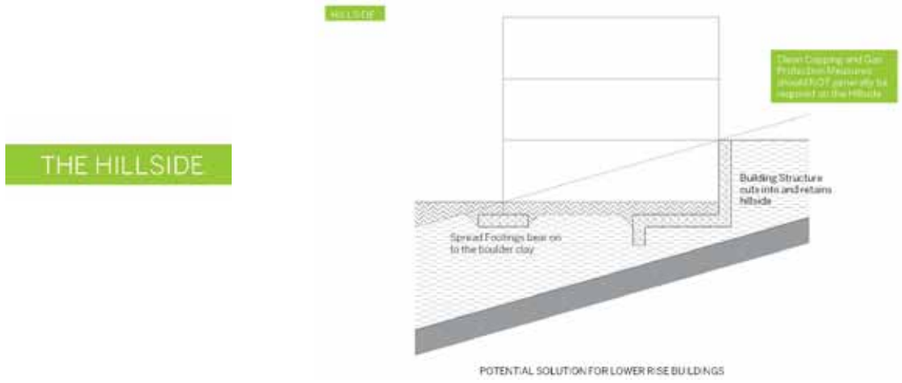
Lavers Yard sits to the east of Stanley Road and is elevated above the Valley Bottom. The site is occupied by light industrial uses and is partly cut into the hillside.

Given the anticipated ground conditions in this area of the site, it is possible that piled foundations may be required, although ground improvement combined with raft foundations or simple strip footings may be achievable in some locations for lower rise properties.

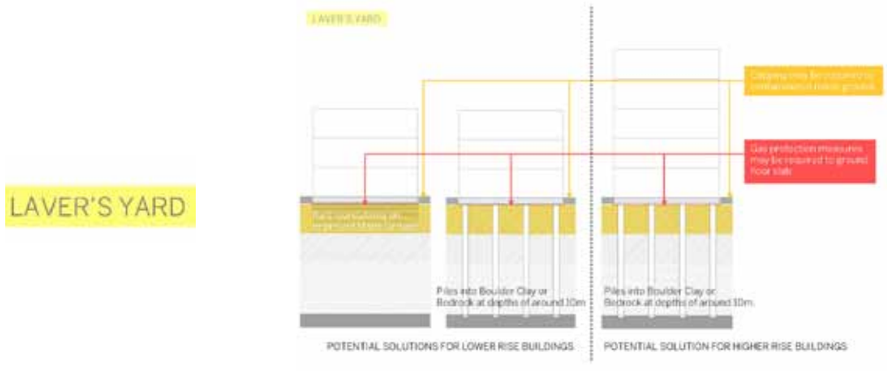
The potential presence of contamination means that similar remediation measures may be required as are anticipated for the Valley Bottom.



ILLUSTRATIVE SECTION THROUGH SITE LOOKING NORTH

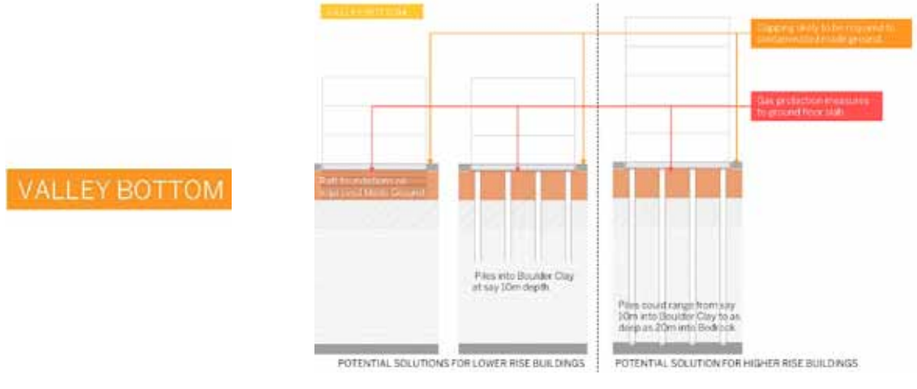


POTENTIAL SOLUTION FOR LOWER RISE BUILDINGS



POTENTIAL SOLUTIONS FOR LOWER RISE BUILDINGS

POTENTIAL SOLUTION FOR HIGHER RISE BUILDINGS



POTENTIAL SOLUTIONS FOR LOWER RISE BUILDINGS

POTENTIAL SOLUTION FOR HIGHER RISE BUILDINGS

3.2 Site Constraints

Flood Risk Analysis

The Environment Agency's (EA) flood maps are generally used by local authorities as a guide to the likely flood risk at a site and as part of the process for deciding whether a Flood Risk Assessment (FRA) for the site should form part of any planning application.

BMDC have produced more detailed flood mapping which has been used to refine the extents of the flood zones and it has been agreed that this mapping will form the basis of Assessment in this instance.

The site is predominantly located within Flood Zone 1, with a low probability of fluvial flooding (i.e. less than 1 in 1,000 annual probability of flooding from rivers or the sea). Within the site and adjacent to Bradford Beck are areas identified by BMDC Flood Modelling to fall within the following flood zones:

> Flood Zone 2 which is land assessed as having 1 in 100 or greater annual probability of flooding from Bradford Beck; (shown lightest blue on the map to the right).

> Flood Zone 3a which is land assessed as having 1 in 100 or greater annual probability of flooding from Bradford Beck; (shown medium blue on the map to the right).

> Flood Zone 3b which is land assessed as having a 1 in 20 or greater annual probability of flooding from Bradford Beck; (shown darkest blue on the map to the right).

A Sequential Approach has been applied to the layout of the development such that the majority of proposed development is situated on land which falls within Flood Zone 1. Where development is proposed within Flood Zones 2 and 3 it will be designed to ensure that it is safe for the life of the development and does not increase the risk of flooding elsewhere. This will be achieved through a range of measures including the raising of ground floor levels, and the incorporation of sustainable drainage techniques to manage run off.

To the north of the development, adjacent to Poplars Road, works are proposed to re-profile the ground to provide an improved flood plain provision whilst enabling development of land which is currently shown as having a 1 in 20 or greater annual probability of flooding.

It is anticipated that the surface water discharge from the site will be restricted to the pre-development condition, with an allowance made for climate change when assessing the post development rainfall. Potential measures for the management of surface water include:

> Green Space (including green roofs) - providing increased areas of green space will reduce the volume of water which needs to be managed on site and as such maximising the green space provision should be the first step prior to considering means of managing run off.

> Rainwater Harvesting - due to the likelihood that areas of impermeable surface will increase post development, the Code for Sustainable Homes may require Rainwater Harvesting to be installed in some or all homes to limit the volume (rather than simply the flow) of surface water discharged from the site. A potential alternative means of limiting the volume of discharge is to provide soakaway.

> Soakaway - it may be possible to discharge surface water into the sandstone and other permeable layers beneath the site, particularly to the Hillside areas. If feasible then this method of surface water management may be the most environmentally sustainable and cost effective.

> Swales and Ponds - provision of swales and ponds within the Public Realm and Streets can provide surface water management whilst contributing positively to the amenity and ecology of the place. As the attenuation is provided at surface level the requirement for excavation and buried infrastructure is limited.

> Permeable Paving - in suitable ground permeable paving can be used to collect and discharge surface water to the ground. Where the ground beneath the paving is impermeable then the sub-base can provide a volume of storage but must be positively drained to sewer or watercourse.

> Below ground storage and oversized pipes - the most common mean of providing surface water attenuation is through the provision of below ground storage or oversizing of drainage pipes. This option can require significant infrastructure and excavation.

3.2 Site Constraints

Topology

A LIDAR Survey of the area has been made available and provides a detailed picture of the topography of the site and the design issues in relation to levels.

The eastern portion of the site sits on a steep hillside with the top of the hill at approximately 162m AOD, with a further stockpile of spoil generated from the adjacent quarry to the top of the hill taking the maximum level to approximately 188m AOD.

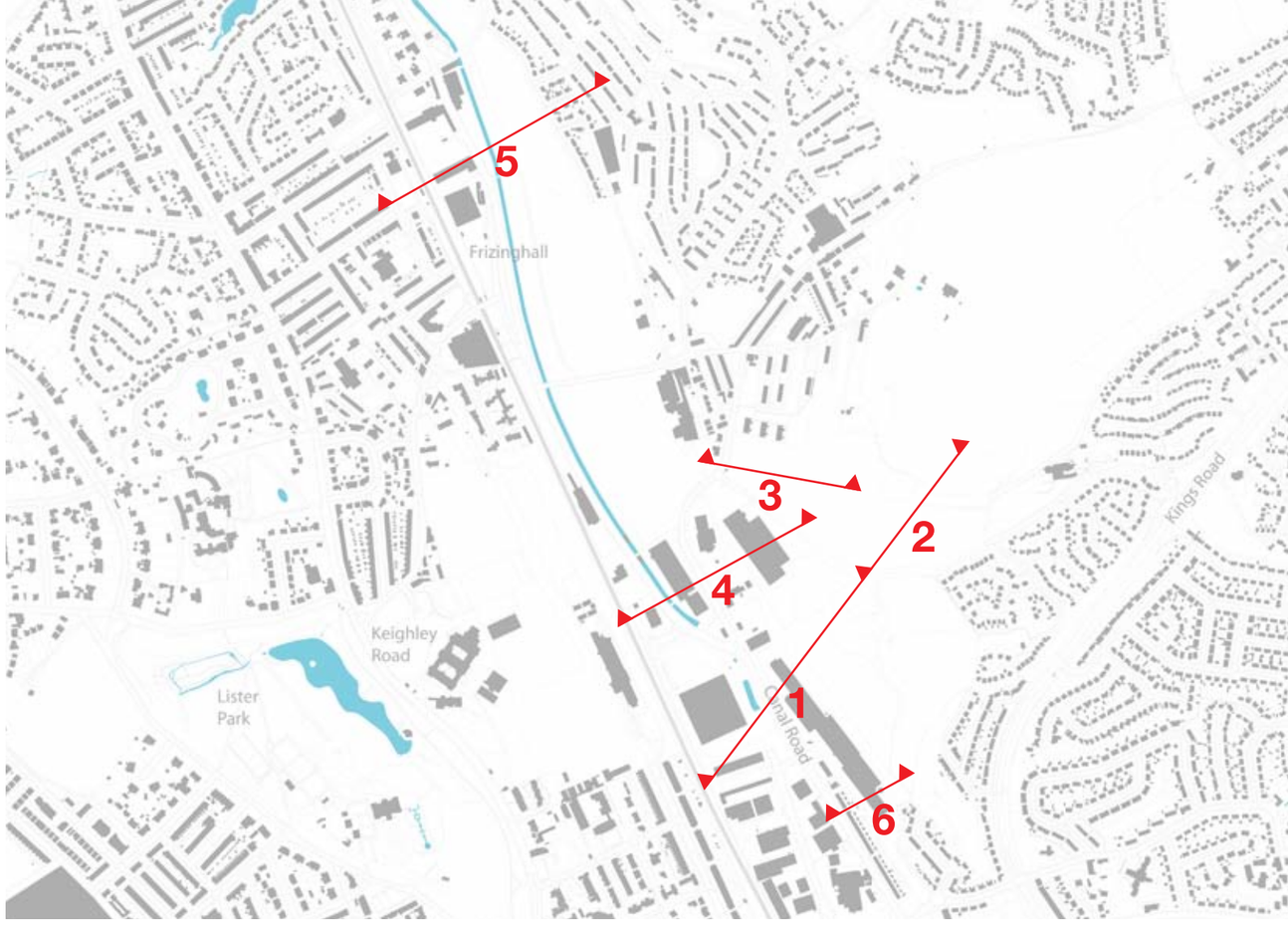
The valley bottom sits at approximately 80-85m AOD with the Bradford Beck running from south to north in a cutting along the western boundary of the site with Bed Level varying between 76 to 78m AOD.

Topography was a significant factor in developing the proposals with much of the hillside lying at a gradient of approximately 1 in 4 with areas of shear cliff face up to 10m in height to the west of Poplars Park Road. The strategy for managing the level differences through the proposed landscape and house types was a key factor in developing the design.

3.2 Site Constraints

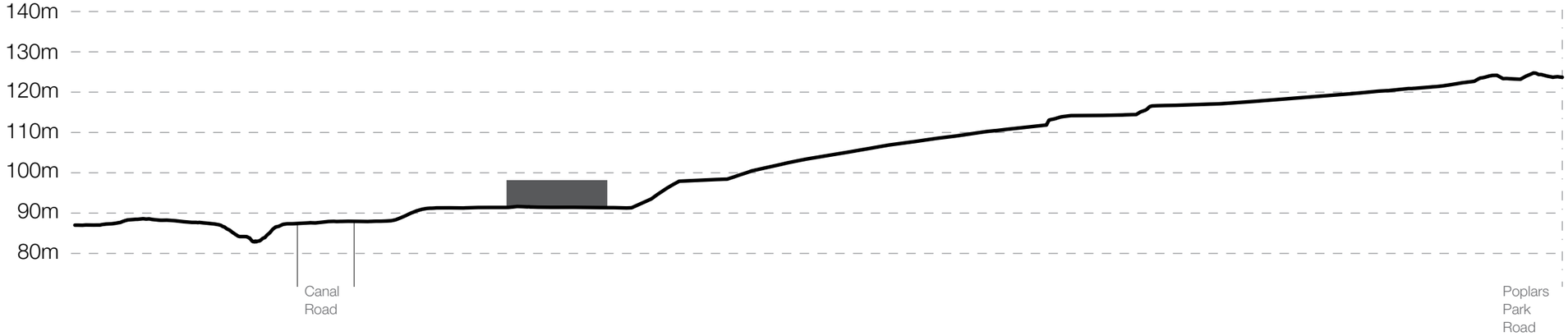
Existing Sections 1:1250

A number of existing sections have been drawn to understand the topography. This informed the design of the overall masterplan, and informed our thinking of building on a sloping site.

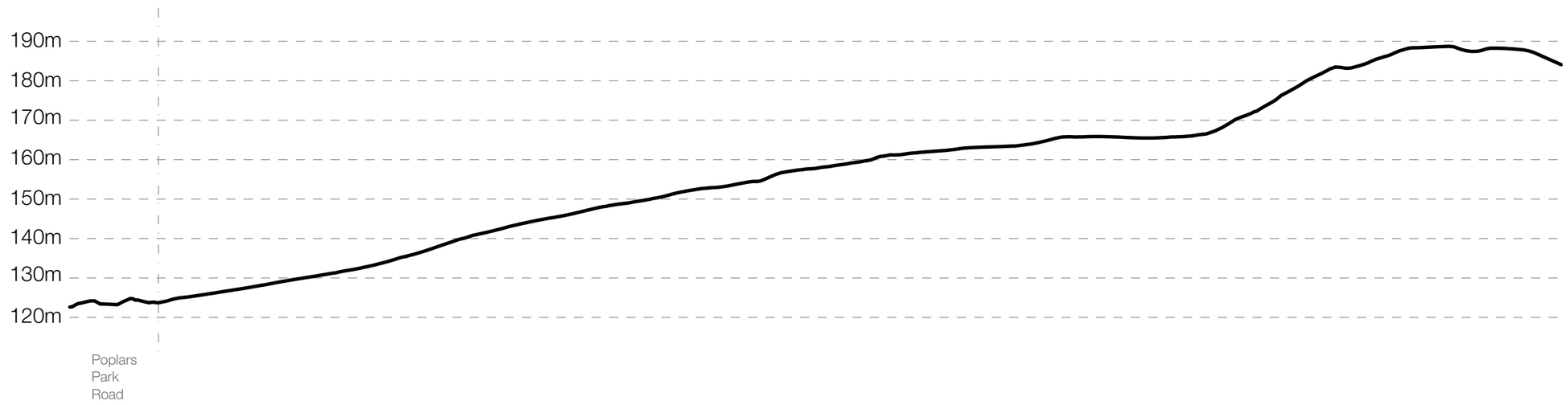


Section Key Plan

Section 1

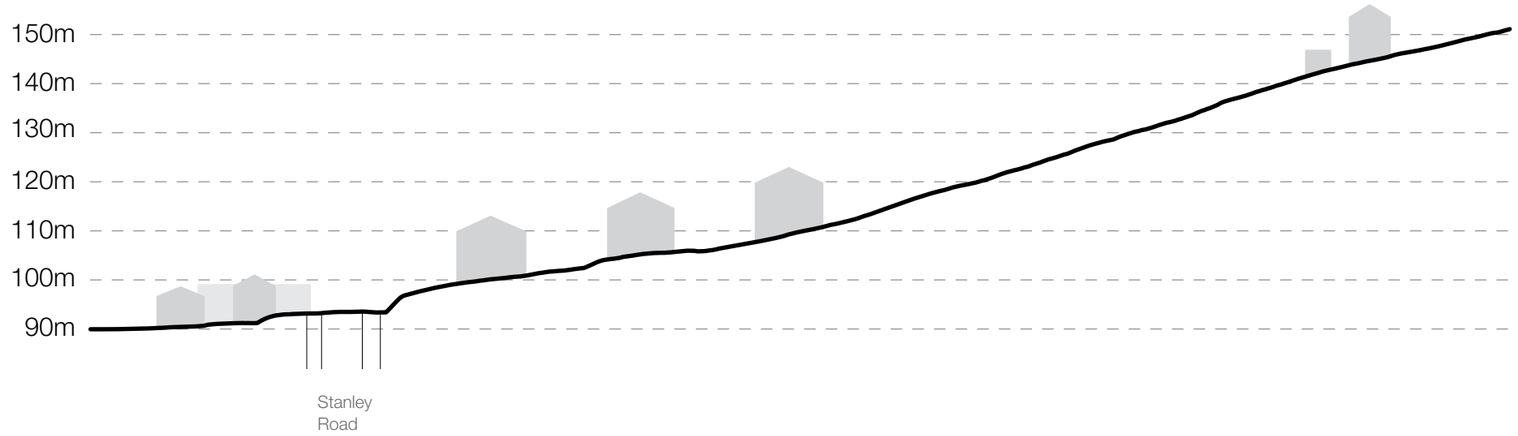


Section 2

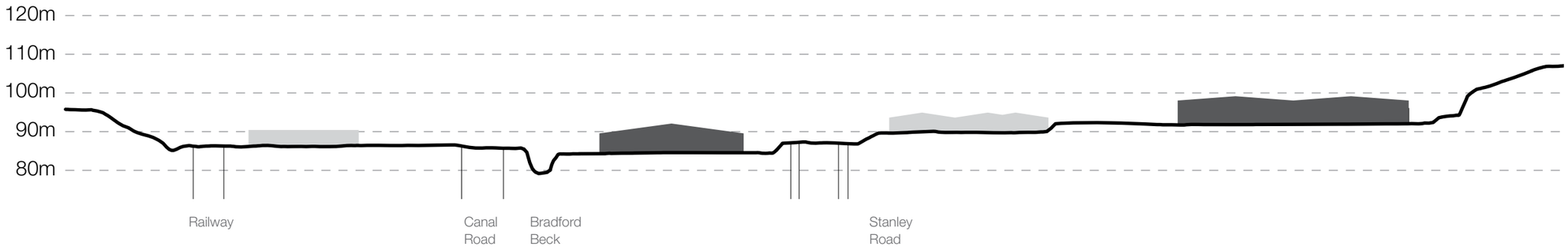


3.2 Site Constraints

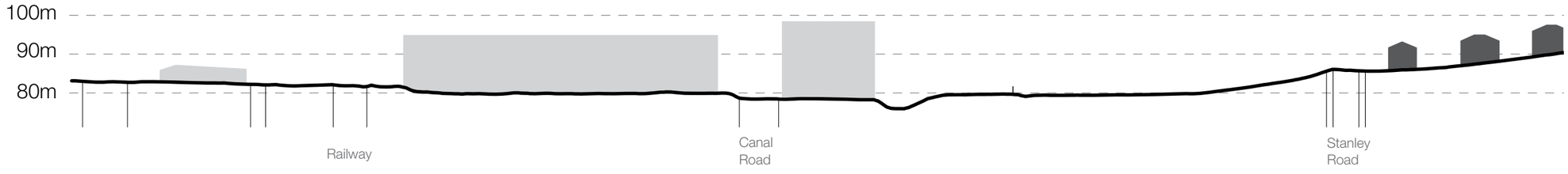
Section 3



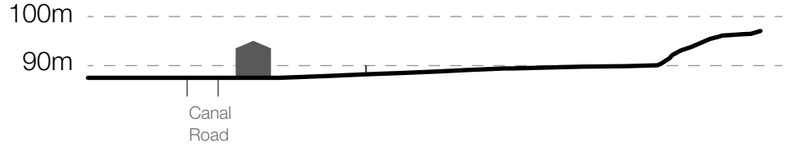
Section 4



Section 5



Section 6



3.2 Site Constraints

Public Rights of Way

There are a number of existing designated Public Right of Way throughout the site, as well as the recent addition of the ‘Greenway’, Sustrans Cycle Route 66, a designated cycle path, which has been built by Sustrans and BMDC.

Stopping-up orders and Modification orders will be necessary as the development comes forward. The intentention is for public right of ways to be re-aligned with new roads and pathways created in the scheme.

There are several bridleways across the site. These will be maintained, or moved as appropriate. The partnership aims to maintain and improve as and where necessary.

Public Right of Way

Key

- Cycle Path
- Dales Way
- Footpaths/ Bridleways

4. Masterplan Development

4.1 Masterplan Origins

The ideas behind New Bolton Woods have developed over a period of years and began with proposals to restore the canal into Bradford City Centre from Shipley which affected the Arnold Laver timber yard. This proposal led to Arnold Laver engaging planning consultants.

At the same time Arnold Laver were creating a regeneration development company – Urbo to pursue their 60 acre, mixed-use Chesterfield Waterside project and Urbo soon became the driver for the New Bolton Woods project. Drivers Jonas and Taylor Young were appointed in 2005, jointly by Arnold Laver and Bradford MDC to look at the area's full potential. A masterplan was produced in Spring 2006 that identified potential for a large-scale residential-led mixed-use development along the Canal Road Corridor. In terms of delivery the report advocated the creation of a public-private partnership to assure delivery of the masterplan.

Having sown the seeds of a new large-scale regeneration area, Bradford MDC and Urbo set about forming a delivery partnership and also refining the study work on the area.

URBED were appointed by Urbo in 2007 to refine the masterplan and the urban design approach to accommodate the desired uses in a new sustainable plan.

After a sustained period of collaborative work and negotiation the formal joint venture company Canal Road Urban Village Ltd (CRUVL) was created in 2010.

CRUVL then worked with URBED and a wider professional team to develop the masterplan further. This resulted in a fairly settled masterplan gaining approval by the Council's Executive in 2013. CRUVL and Urbed also worked with the Council's forward planning team to dovetail this work with the key principles in the emerging Area Action Plan for the Bradford-Shipley Canal Corridor, carrying out independent public consultation and co-ordinating with the Council's own planning consultation.

In this way a strong consensus has been developed between planning policy, regeneration delivery plans and community views.

4.2 The Vision

In the early stages of the project the team spent a lot of time working on the vision for the site. The nine points on the facing page sum up this vision.

1. A Choice of High Quality Housing
One of the most important objectives for the Partnership is to deliver a wide range of high quality sustainable homes for a variety of age groups. This will range from affordable housing to higher value housing in the sort of mix that can be seen in any popular village or small town. The houses will be of contemporary design but will use materials appropriate for their setting in West Yorkshire. This is a vital part of Bradford's requirement to meet housing needs locally.

2. A New Local Centre at the Heart of the Community
Any successful village has a strong centre where local shops and other shared facilities are located. Bolton Woods used to have this when it was thriving and we now have the opportunity to re-establish a new local centre in a location that will ensure it's success and sustainability. It will serve the local community and be a focal point for activity and interaction.

3. A Sustainable Place
Our challenge is to regenerate Bolton Woods as a sustainable place so improvements are long-lasting. Buildings will be designed to the best modern standards of high quality. We will look to minimise the carbon footprint in our design and construction and provide homes that will be cheap and efficient in their use of energy and other resources. We will encourage cycling and walking by making routes safe and attractive and by managing traffic movements as far as possible. We will also encourage travel by train, improving access to Frizinghall station.

4. Attractive Landscape and Open Spaces
Bolton Woods benefits from open space and green areas at present although some of these are already allocated for new housing development and others are difficult to access and are poorly maintained. The Partnership intends to provide a series of well-landscaped, high quality open areas and linear parks for the community to enjoy. These will be a major part of the area's attractiveness and could also include new water-spaces as part of the restored canal.

5. New and Improved Sports Facilities for the Community
Bolton Woods already has some good sports facilities, and we believe there is an opportunity to support these through investing in improved facilities including a new cricket pitch at the heart of the community. They can be linked to the new centre and be a valuable attraction representing the New Bolton Woods.

6. Strong Identity and a Unique Character
We recognise the unique history and character of Bolton Woods and will look to create a successful place, having full regard to its past but very much looking to the future. We believe it's possible to make an attractive new village by planning in all the things that people would choose to have there, whilst still ensuring that it is founded on the historic context of Bolton Woods.

7. A Strong Sense of Community
By creating a place with a wide range of housing and community facilities, people of all ages and backgrounds will feel at home. By working to make New Bolton Woods more attractive we can foster a continued sense of local pride. We hope this will build on some of the good work done in the community to date.

8. Contemporary Design that is Built to Last
We believe that design quality is hugely important in ensuring New Bolton Woods is built to last. We will work with leading designers to ensure the place is attractive and pleasurable to live, work or enjoy leisure time in. Attention will be paid to landscaping and public spaces and routes. Play areas will be provided for children and safety and security will be 'designed-in'. Houses will be built to be long-lasting and 'low-energy' in accordance with the latest standards.

9. A Place with a Village Feel
We hope to create a New Bolton Woods that builds on its history and becomes a well-defined and well-connected Village between Bradford and Shipley. Like all successful villages it will have a strong centre as a focal point for the community. This will include good shops, community, sports and leisure facilities, places to work and open spaces to enjoy. The population will be able to live in a wide range of new houses in addition to the current streets, to suit a broad community from young families to elderly residents.

1 A CHOICE OF HIGH QUALITY HOUSING

2 A NEW LOCAL CENTRE AT THE HEART OF THE COMMUNITY

3 A SUSTAINABLE PLACE

4 ATTRACTIVE LANDSCAPE AND OPEN SPACES

5 NEW AND IMPROVED SPORTS FACILITIES

6 STRONG IDENTITY AND A UNIQUE CHARACTER

7 A STRONG SENSE OF COMMUNITY

8 CONTEMPORARY DESIGN THAT IS BUILT TO LAST

9 A PLACE WITH A VILLAGE FEEL

4.3 Masterplan Timeline

The masterplan presented in this document has taken many years to develop. In this section we go through the design development and map significant changes from options drawn in 2011 to the current masterplan scheme.

2011

July

In 2011 we developed a series of 4 options for the partnership. This included reinstating the old canal and an extensive research study was done into the viability of the proposal. This has been lost in the current masterplan, but the historic route of the canal forms a green link throughout the site, so in future if this does become viable the canal could be designed into the masterplan.

September

A preferred option was drawn up and tested in terms of open space, development capacity, retail capacity and tested

December

There were a number of changes through the development of this masterplan. One of the main ones being determining the appropriate scale of the supermarket which would anchor the local centre. The council were consulted thoughout this stage.

2012

April

The design team modelled and mapped the hilside, the contours guiding where the roads had to be routed. We also took on board comments from council officers about the need for networked green spaces and created a hillside park which mirrors Lister Park on the other side of the valley in Mannigham.

July

In order to present the scheme to the public we presented a masterplan sketch to demonstrate the hillside. We took an exhibition to a fun day in Bolton Woods and at Wrose carnival and canvassed opinion on the scheme. People made comments about the kinds of facilities they wanted to see as part of the scheme.

October

In October the partnership submitted a outline planning application for Phase 1 of the masterplan. This was ahead of the hybird application. This was due to funding becoming available to build the housing in a certain time frame. Outline planning permission was granted in April 2013. Construction started shortly on Phase 1A and is now almost complete.

4.3 Masterplan Timeline

2013

In order to inform the road network, Civic and URBED worked on understanding the topography and strategies for building on such a steep slope. The road network dictated the development plots and concept sections through the hillside were drawn.

March

We took the updated masterplan back to the public for a series of events including a neighbourhood forum and answered resident queries about the scheme.

Summer

The team were also working up a much more detailed scheme for the retail component of the masterplan which focused around the local centre. This helped inform officers how much commercial space would be developed as part of the masterplan and helped establish the principle for a new small supermarket upon which to anchor the development.

Sports provision was another element of the masterplan which was developed more fully to inform conversations with Sports England regarding the amount of sports fields created and lost as part of the masterplan.

2014

April

In 2014 the team drafted the final masterplan to go to design review and to exhibit to the public as a pre-application masterplan.

June

The scheme was reviewed by Integreat Design Panel, who made recommendations which informed the final design.

DESIGN
REVIEW
BOARDS

Integreat Design Review

July

The final masterplan illustrated in this Design and Access Statement is a culmination of design development influenced by comments from stakeholders including residents, council officers, and the design panel.

September

4.4 Public Engagement

Below is a brief overview of the consultation process undertaken for the regeneration and masterplanning of the Bolton Woods area in Bradford over the past two years. A detailed account can be seen in the Statement of Community Engagement, submitted to support the application. Public engagement is key to URBED's work, ensuring that people who live in the area, community members and key stakeholders are all given the opportunity to have a say in how an area should be transformed and on proposed development.

Consultation sessions were carried out to inform the masterplan for the area and to take on board views of local residents. Councillors and business owners were also given the opportunity to voice their opinions about the proposals.

The initial consultation strategy was to engage community members through a series of design charette workshops, a bus tour and exhibition.

In 2012, the initial set of workshops were advertised, unfortunately only 7 people showed up to the first event and it became apparent that the area is suffering from consultation fatigue due to the earlier extensive BDP consultation process. We decided to change our approach and spoke with local councillors, the area coordinators and residents who had attended to find out some key community events which we could attend that year.

The strategy was amended to ensure that as many people were consulted as possible. We chose to hold a consultation stand at 2 separate community events where there was guaranteed good turnout of local people.

We presented the vision and the initial masterplan and gathered local opinion for the wider area at a community fun day and at a local carnival.

Events were advertised by leaflet distribution of 1000 properties closest to the site. This leaflet included the material at the public exhibition, details of the events and also a questionnaire with a free post address for returning comments on the proposals.

The team also attended a neighbourhood forum in the Wrose area, where they presented the plans and gave residents an opportunity to comment on the initial masterplan.

Following these initial events the design team took the comments on board and further individual conversations continued throughout this time. The team then returned to present the emerging masterplan in March 2013. This was through two exhibitions at Bolton Woods Community Centre and Poplar Farm Primary School.

In addition, two public meetings were held, where a presentation was made and then questions were answered by members of the design team.

The team continued individual conversations with residents, local businesses and community members. Pre-application discussions also took place as well as conversations with statutory bodies such as Sport England.

In June 2014 the final masterplan was submitted to integreat, Yorkshire's design panel. It was also presented to the public in an exhibition in July 2014, at Bolton Woods Community Centre and Poplar Farm Primary School.

More information on each event is detailed in the Statement of Community Engagement along with results and key findings.

Initial workshop and engagement at Bolton Woods Community Centre Spring 2012

Presenting the public on the emerging masterplan summer 2012

Displaying the updated masteplan summer 2013

Pre-application exhibition at Bolton Woods Community Centre and Poplar Farm Primary School summer 2014

4.5 Pre-Application Discussions

As part of the joint venture requirements, Urbo held a number of detailed pre-application discussions with Bradford Metropolitan District Council (BMDC) over the past two and half years to help inform the proposed masterplan and planning submissions.

The following meetings have been held:

> 20 January 2012 – Pre-application meeting

> 15 March 2012 – Masterplan design meeting

> 07 September 2012 – Masterplan design workshop

> 08 January 2013 – Meeting to discuss pre-application consultation programme

> 05 February 2013 – Technical matters update meeting

> 02 April 2014 – Scheme update meeting

> 03 June 2014 – Planning requirements meeting

> 02 September 2014 – Further scheme update and legal matters meeting

The discussions and outcomes from the above meetings have been used to help inform the design evolution of the proposed scheme as detailed within this Design and Access Statement.

Access Consultation

Mott MacDonald met with Bradford MDC on several occasions to discuss the content and methodology of the transport reports that would be required to accompany the planning application for the New Bolton Woods development.

In particular, a Scoping Assessment for the Transport Assessment was originally issued and agreed in November 2013, and following an update to the land-use mix, the masterplan was revised and re-issued in June 2014.

Traffic modelling to assess the impact of the masterplan was specified by Mott MacDonald, but was undertaken by the Council's consultants Fore Consulting using a network wide AIMSUM model. This modelling concluded that the off-site works proposed as part of this development, would off-set the traffic likely to be generated by the new land-uses.

Civic and URBED engaged highways officers regarding the road hierarchy and strategy. Officers gave the team feedback from Phase 1 which experienced some difficulties in terms of adoption. To avoid these issues an overall strategy for the roads has been created. This creates a clear hierarchy of routes which is created by geometry and does not rely on expensive materials. Through collaboration with officers changes were made to the strategy. The strategy is now based on three levels of road types.

4.6 Design Review

The partnership submitted the scheme for review by the Yorkshire design panel, run by Integreat. The panel visited the site and the design team presented the scheme development and principles on a series of A1 boards.

The panel were pleased to receive a scheme before a planning application had been submitted which demonstrated The Partnership's committment to design quality. They felt that the strategic approach was sensitive, thorough and thoughtful.

Phase 1 was almost complete when the design panel visited and they were impressed with the level of development, in particular the large windows and generous space standards, especially in comparison to other developments in the country.

One focus of discussions was the local centre. The panel felt that a key aspect of this area was to ensure a sense of identity. As the foodstore will be brought forward the panel wanted to see a high standard which could then be followed through as the rest of the centre comes forward. They supported our approach of a masterplan with negotiable and non-negotiable aspects.

The panel had several recommendations which have been taken on board in the most up to date masterplan including the Local Centre, the Landscape strategy and Connections and Movement

Local Centre

The panel believed that the high street in the local centre should be kept compact to emmulate the existing style and feel of Livingstone Road shops. They feel that the local retail offer on the high street should be substantially different from that of a retail park. They commented that there may the possibility to draw in the school to a tighter proximity to the local centre.

The panel recommended that where possible the local centre facilities should have their main entrances on to the high street to create an active frontage and attractive outlook for shoppers. The panel were keen to understand in more detail the design principles of the two public spaces within the local centre. These recommendations have been considered and more detail about the character of the public spaces can be seen in chapter 7, as well as the 8.7 Stanley Road's neighbourhood design guide.

Landscape

The panel encouraged the use of the strong visual link across the valley but did wonder about the value of maintaining the Bradford Wildlife Area in its entireity. They suggested exploring the possibility of creating woodland and habitats on harder to build areas rather than areas better suited to housing. Two areas of enhanced ecological value have been created in response to this comment.

The pocket parks developed for Bolton Hall area were seen as an asset but they did want to see more detail to demonstrate the creation of meaningful garden and green spaces for residents. Suggestions included encouraging initiatives such as growing biomass, planting productive street trees or creating places where people can grow food. This informed the strategy for the doorstep/pocket parks as detailed in chapter 7.

The panel also recommended developing "meanwhile" growing projects with the community to create temporary landscapes as the open spaces mature and establish. Initial ideas for this include linking up with with a local environmental group; Bradford Environmental Education Services, who deliver landscape services and training to the local community. We aim to develop a strategy of meanwhile uses with them.

Connection and Movement

The panel applauded the proactive nature of the developer and council working together on improvements to Canal Road junctions. There was a recommendation to understand the detail of the shared space high street. The proximity to the rail station was seen as significant and they encouraged the design team to show visual links to encourage new residents to use public transport. The design team has created a road design strategy in collaboration with the highways officers, and a strategy of a strong visual geometry will ensure the legibility of the hierarchy.

5. The Masterplan

5.1 Illustrative Masterplan

The comments received at consultation events, through the design review as well as comments from the planning authority have fed into the final masterplan illustrated to the right and below. This is intended to be an illustration of how the place could look when the planning application is implemented.

Our approach to masterplanning is to create a framework into which development can grow over many years. The aim of this masterplan is to create a new sustainable urban neighbourhood based on Bolton Woods. The masterplan establishes the structure and form of this new area, how it functions, how it is seen, how people move about, how it is divided up into sub neighbourhoods and how it can grow over time.

It is important not to see a masterplan like this as a piece of large-scale architecture. We shouldn't assume that it will be built exactly as drawn. Over the coming years different parts will be designed by different architects and elements will inevitably change in detail. Nevertheless the vision and structure should be a strong and constant guide. This is how it should be and will create the natural grain and variety that you get in a place that has developed gradually.

Many of the people who implement the development will not have been involved in the initial masterplan. It is an unfortunate fact that many over-prescriptive masterplans are undermined by people who take it upon themselves to rethink the design. The intention of this plan is to create a clear but loose-fit framework that can serve the neighbourhood for many years. This is a very traditional form of masterplanning similar to the plans produced by John Nash for parts of London that continue to shape the city today.

5.2 Land Use & Densities

Land use and housing density is very much controlled by the existing topology of the site and the road network created by carving a network of streets across the hillside. We have based the masterplan on three density bands; these create the fundamental building blocks of the illustrative masterplan.

The housing densities have been developed through an understanding of what is achievable on such steep slopes as exist on this site, as well as learning from the densities achieved on the initial scheme “phase 1”.

The densities are as follows:

1. Low Density Housing. Semi detached housing wth gardens and in-curtilage parking in a mixture of garages and on-plot spaces.

2. Medium Density Housing. Terraces and courtyard housing with in curtilage garages as well as on street parking.

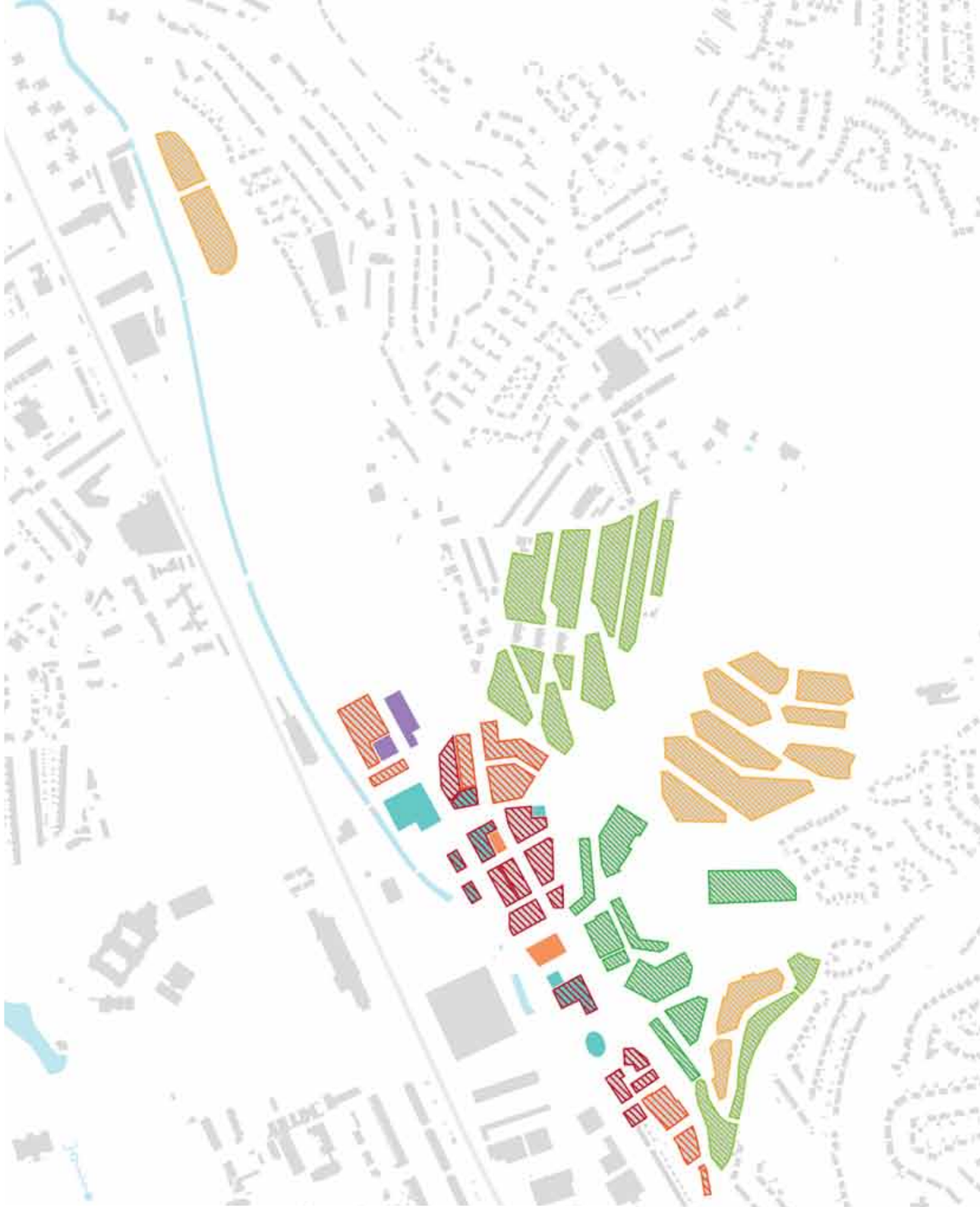
3. High Density Housing. Terraces and courtyard housing blocks.

4. High Density Apartments. Apartment blocks of up to five storeys with undercroft parking.

The non-residential uses include commercial and retail space, some of which will be located on the ground floors of apartment blocks creating active public realm in the local centre.

There are also some community use buildings including a new health centre, and there is scope for re-locating the Bolton Woods Community Centre into the local centre. The developer has been in discussions with the centre’s staff and will continue to speak with them to find a suitable plot as the development comes forward.

There is also a plot suitable for a two-form entry primary school and nursery all located in the local centre. The mix of uses is crucial to developing a sustainable community.



5.3 Access & Streets

The road hierarchy for the masterplan is shown to the right. This shows the main points of vehicular access and the hierarchy of routes within the site. This plan has been developed using computer modelling of the hillside to ensure that a maximum gradient of 1 in 9 is achieved across the site.

The scheme has been designed to minimise the need for car travel through the site with a network of pedestrian routes taking you up the hillside. The majority of housing is a 10-15 minute walking distance of Frizinghall railway station and there are several bus routes on Canal Road and King's Road. These link to the major national railway stations including Bradford and Leeds.

The main traffic route adjacent to the site is Canal Road. The intention is to disperse traffic into the site so no particular junction is overburdened and for this reason we have suggested improvement works to Gaisby Lane and the creation of a new junction into Hollin Park and Brown Wood neighbourhoods. Improvement works have already been carried out to Stanley Road. The movement hierarchy is based on six levels. These are expanded on in chapter 6.

1. Main Road: Canal Road. This road is the major arterial road in and out of Bradford. Junctions will include traffic lights to aid pedestrian crossings as well as helping the traffic pulse down Canal Road.

2. Stanley Road High Street This will be the high street of the new local centre. It will be designed as a pedestrian friendly street and will calm traffic.

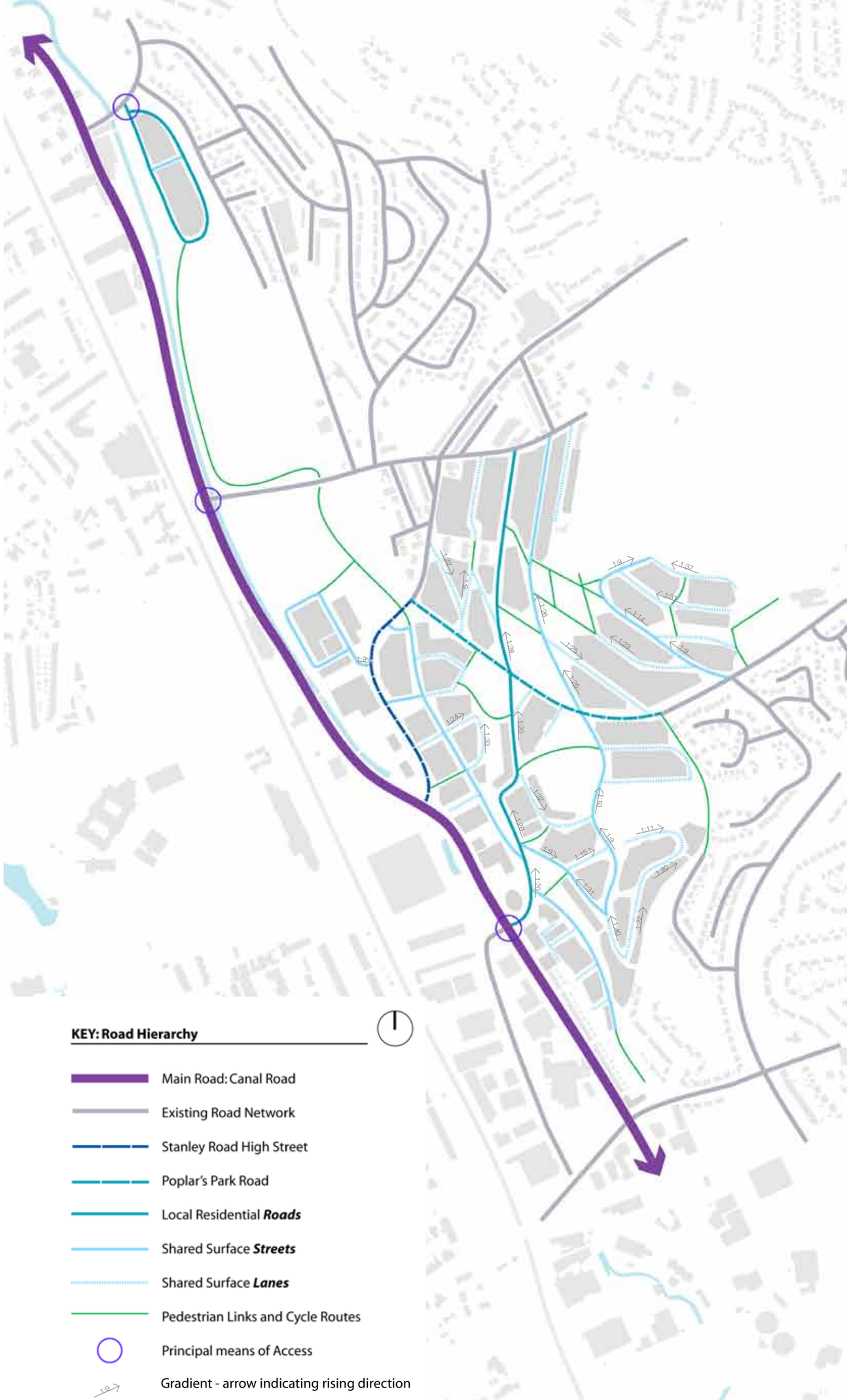
2. Poplars Park Road. This will be a traffic-calmed route linking the different neighbourhoods together. Specially designed passing points will help reduce the speed of traffic naturally.

3. Local Residential *Roads*. These roads are designed to be for residential traffic and provide routes through neighbourhoods.

4. Shared Space *Streets*. These streets are designed to be for residential traffic and as such are designed to a design speed of 20mph.

5. Shared Space *Lanes*. These routes are similar to shared space streets but are narrower and serve fewer homes.

6. Pedestrian/ Cycle Routes. These provide routes through open space on the site.



5.4 Parking

Parking arrangements will be covered as part of each phase's detailed design. Here we establish the principle of the parking strategy. The plan on the right shows a mixture of on-street and in curtilage depending on the housing density and character.

Parking provision is set to be 1.5 spaces per unit which equates to a total of 1,500 spaces needed overall on the site. To achieve this in residential areas there will be a mixture of in-curtilage parking in garages in the medium density plots and on-plot for the low density plots. There will also be additional on-street parking on the home-zone and shared space streets for visitors and additional vehicles.

In the local centre we have allowed for some undercroft parking for apartments and commercial uses. There are also several surface car parks for retail and community uses, which should provide one space for every 25sqm of floor space of non-food retail, in line with current policy guidance.

A recent study on parking gives examples of best practice. The diagrams on the next page indicate the types of parking which will be appropriate for the development. These diagrams have been sourced from the space to park website (http://www.spacetopark.org/).

It should also be noted that links to public transport are extremly good for this site, with the majority of houses a 10-15 minute walk to a railway station, as well as local bus routes running through the site.

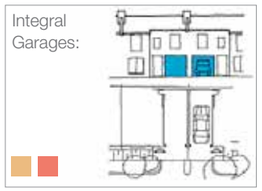
5.4 Parking

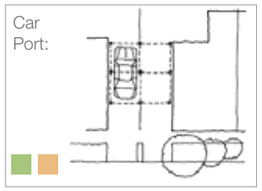
We have coded the types of development to help explain the different types of parking proposed for this scheme. See chapter 8 for examples of how these proposals could be achieved in each area.

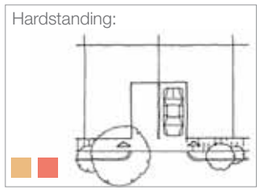
- **Low Density Residential**
- **Medium Density Residential**
- **High Density Housing**
- **High Density Apartments**
- **Local Centre**

On Plot

Research has shown that the majority of people prefer to park on plot, as close to their property as possible. This is why the majority of parking should come from on-plot spaces. There are several options for this type of parking:

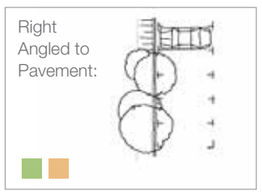


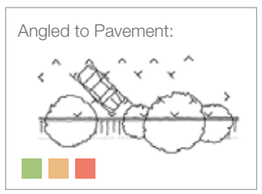


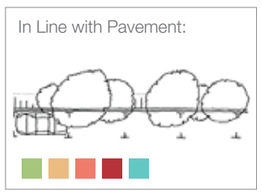


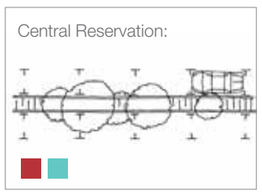
On Street

If there are not enough on-street parking spaces provided it can lead to issues in a community. Most streets will accommodate some parking saces, which will be for visiotrs.



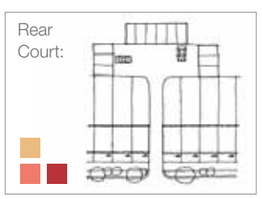


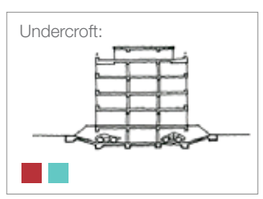




Off Plot

In the more high-denisty areas off-plot spaces can be provided in a rear court, or for apartments in an undercroft area.

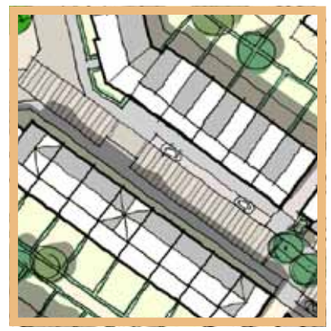




On Plot

Low Density: parking can be provided on plot either on hardstanding, or under a car port as the example above demonstrates.

Low Density: parking can also be provided on plot within the back gardens of low density residential areas.



Medium Density: another example of how parking could be achieved is within the housetype such as an integral garage, which would be appropriate in medium density residential areas.

On Street

Medium Density: Some examples of how parking could provided on street either right angled to pavement or in line with pavement.

High Density Housing: Another example of how on street parking could work is angled to the pavement as shown in this area of high density housing.

High Density Apartments/ Local Centre: Within the local centre a secondary street could have a central reservation with parking either side.

Off Plot

High Density Housing: Parking can be provided in rear courts. This is appropriate in medium and high density housing areas.

High Density Apartments: Parking can be provided by undercroft.

Local Centre: Parking will be provided on streets in the local centre for shoppers as well as in surface car parks near to the shops.

5.5 Landscape & Open Space

The illustrative masterplan uses open space to define the character of the neighbourhoods. They are designed as a series of parks, woodlands and linear spaces connected through the plan by green corridors.

The landscape strategy has been developed with landscape architects Planit, and is based on five elements. These are expanded upon in chapter 7.

1. Public Squares. These are the spaces which will be the focus of the local centre, the shared heart of all the neighbourhoods. These will be places to gather, go to markets and celebrate local events.

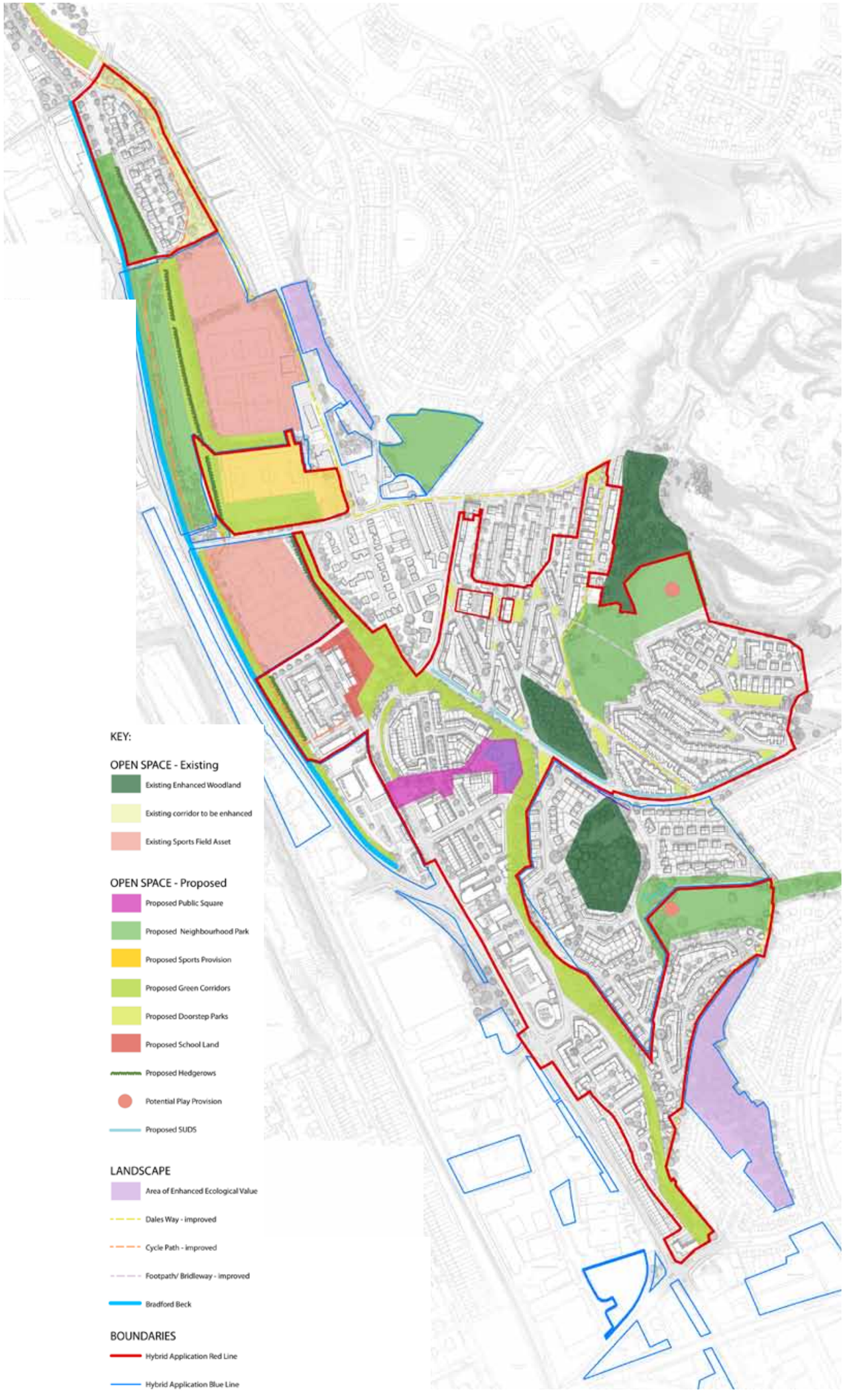
2. Parks and Woodlands. These will be designed for public access and with play provision.

3. Sports Provision. There is excellent sports provision in the area including several football pitches and the successful Bolton Woods Junior Football Club. We are propoposing to upgrade one pitch as a 3G Pitch which can be used by the local football clubs and the community.

4. Green Corridors. Core to the open space network is a committment to linked green spaces and the green corridors will help the masterplan achieve this. These are a series of linear green spaces which connect to the parks and woodlands. The main corridor follows the line of the old canal.

5. Doorstep Parks. Due to the sloping nature of the site a number of “hair-pin” corners will be created. These will be undevelopable for buildings so instead we have a specific strategy for these spaces. This is to ensure they are included in the detailed design as part of each phase. Suggestions for these spaces include allotments, orchards or other food producing landscapes.

The plan to the right is the Green Infrastructure Plan which categorises every type of green infrastructure.



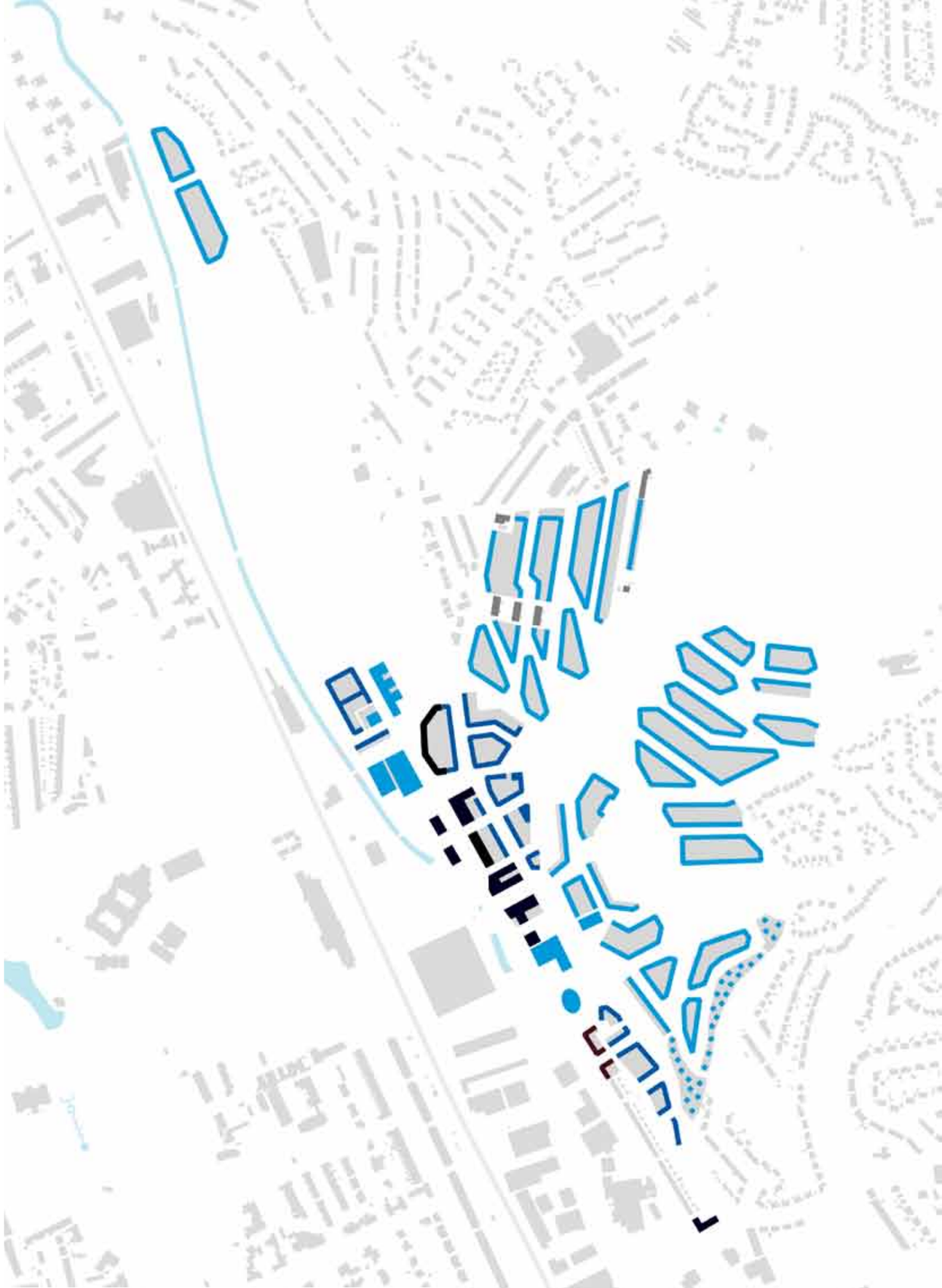
5.6 Townscape & Siting

The illustrative masterplan is intended to be developed as a family housing-led mixed-use scheme with housing at low to medium density on the hillside and a higher density local centre.

Whilst we are not seeking consent for siting, the plan to the right demonstrates the strategy for the building lines. The building height we expand in this plan is designed to illustrate how the development could provide a mixture of heights in line with the parameter plan.

The plan shows a maximum of five storeys. Three storeys will be the predominant housing height across the site, demonstrating that the majority of residential development is aiming to be houses. The height will allow higher densities on the hillside than 2 storey house types with wide frontage.

The building height of the local centre will be a mixture of 3-5 storeys, with a recommendation to increase the building height on corners and on main roads, such as Canal Road. The higher density housing in the local centre will be a mixture of terraced townhouses and apartments.



5.7 Sustainability

The aspiration is to regenerate the area based on the concept of a Sustainable Urban Neighbourhood, pioneered and developed by the project's urban designers URBED. This encompasses matters such as energy use and supply, but also transport, water, waste, biodiversity and liveability and quality of life issues. The aim is to see these not as separate hurdles to be overcome, but as a set of interconnected parts that if treated thoughtfully and designed in from the outset can make a positive contribution to the new neighbourhood and the lives of those who live there.

The sustainability strategy for the New Bolton Woods masterplan uses a methodology developed by URBED that is underpinned by benchmarking and scenario planning.

Each of the sustainability issues outlined – such as energy and climate change - is set out in a matrix. The development is then benchmarked against current market practice, good practice, best practice and exemplar. References are made to current and future regulations and standards, and likely changes over the coming years.

For example, current market practice is to build to Part L of the Building Regulations (2010), good practice is to build to the 2013 standard (which was outlined in Dec 2013), best practice is to 2016/2019 'zero-carbon' standard (regulated emissions only), and exemplar is full zero-carbon (both regulated and unregulated emissions).

This emphasis on performance standards, rather than prescriptive standards, allows for a broader range of issues to be considered than the use of techniques such as BREEAM and the Code for Sustainable Homes alone, although these are referenced at various points in the statement.

Using this approach to assessing sustainability, a changing policy and regulatory landscape can be better accommodated, and actual performance outcomes can be strived for. This more holistic approach allows us to take an overview of the development as a whole, and highlight where performance can be improved and best value achieved as the development is built over several phases in the coming years.

This approach is also more attuned to local priorities and concerns, as identified through the emerging local development framework and through consultation with partners and the wider community.

There is a recognition that over the life of the development performance levels will need to be flexible to a degree, and that these will be dependent on changing factors beyond control (e.g. national electricity grid carbon density, cost and supply of different fuels, Bradford wide strategies and projects).

As future phases are developed, and more influence is gained over the surrounding environment, the aim is to shift further towards good and best practice on all issues. It's also important to bear in mind that the 'baseline' should improve as time progresses. In some areas, and in the later phases where it's appropriate, the aim will be to achieve exemplar.

Please see the Sustainability Statement submitted along with the application for more detailed information.

Indicators marked with 'predicted' or 'TBC' are to be focused on at detailed design stages as each phase is brought forward. Where the outine performance ranges (e.g. from baseline to exemplar), this indicative of evolving standards and the timeframe over which the development is to be built.

Thermal comfort and climate change

Micro-climate	Good (existing)
Daylight: at building stage	Best (predicted)
Daylight, shading and sky view factor: masterplan stage	Good (existing)
Solar gain	Good (predicted)
Thermal comfort and user control	Good (predicted)

Ventilation, noise and air quality

Ventilation: domestic	Good (predicted)
Ventilation: non-domestic	Best (predicted)
External air quality	Best (predicted)
Noise	Baseline - best (predicted)

Energy supply and demand

Fabric Energy Efficiency (FEES): domestic	Baseline - exemplar (predicted)
Primary energy demand: domestic	Best (predicted)
Primary energy demand: non-domestic	Best (predicted)
Target Emission Rate: domestic	Baseline - exemplar (predicted)
Target Emission Rate: non-domestic	Baseline - exemplar (predicted)
Low carbon energy supply	Baseline - exemplar (predicted)

Water and flooding

Water use and water efficiency	Good - exemplar (existing)
Water recycling and harvesting	Baseline - best (predicted)
Run-off and flooding (SUDs)	Good (existing)

Transport

Design for walking and cycling: permeability	Best (existing)
Car parking standards	Baseline - good (predicted)
Cycling	Best (predicted)
Access to public transport	Good (existing)
Modal shift	Good (predicted)

Materials and waste

Construction waste management	Baseline - best (TBC)
Recycling/composting rates	Good - best (predicted)
Recycling facilities	Best (predicted)
Composting facilities	Good (predicted)
Energy & carbon intensity of construction materials	Good - best (TBC)
Sustainable and renewable resource use	Good - best (TBC)
Manufacture of materials: pollutants, toxicity and other impacts	Good - best (TBC)
Design for adaptability and disassembly	Good (predicted)

Green infrastructure and biodiversity

Green spaces: public and private	Good - best (predicted)
Green Infrastructure	Best (predicted)
Food growing	Good - exemplar (predicted)
Biodiversity	Good (predicted)

Occupancy

Monitoring and metering	Good - exemplar (predicted)
Handover and 'soft landings'	Good - exemplar (TBC)

5.8 Neighbourhoods

Core to the masterplan is the concept of six sub neighbourhoods, all of which will be developed with a distinctive character. They will be created by the unique topography of the area as well as their adjacency to open space and woodlands.

The neighbourhoods will take their place amongst the surrounding neighbourhoods of Bradford to stitch the valley together. Neighbourhood character is expanded upon in chapter 8, which goes into detail about suggested materials, identity and open spaces.

1. Brow Wood. This will be one of the first new neighbourhoods and will be defined by the woodland at the heart of family housing.

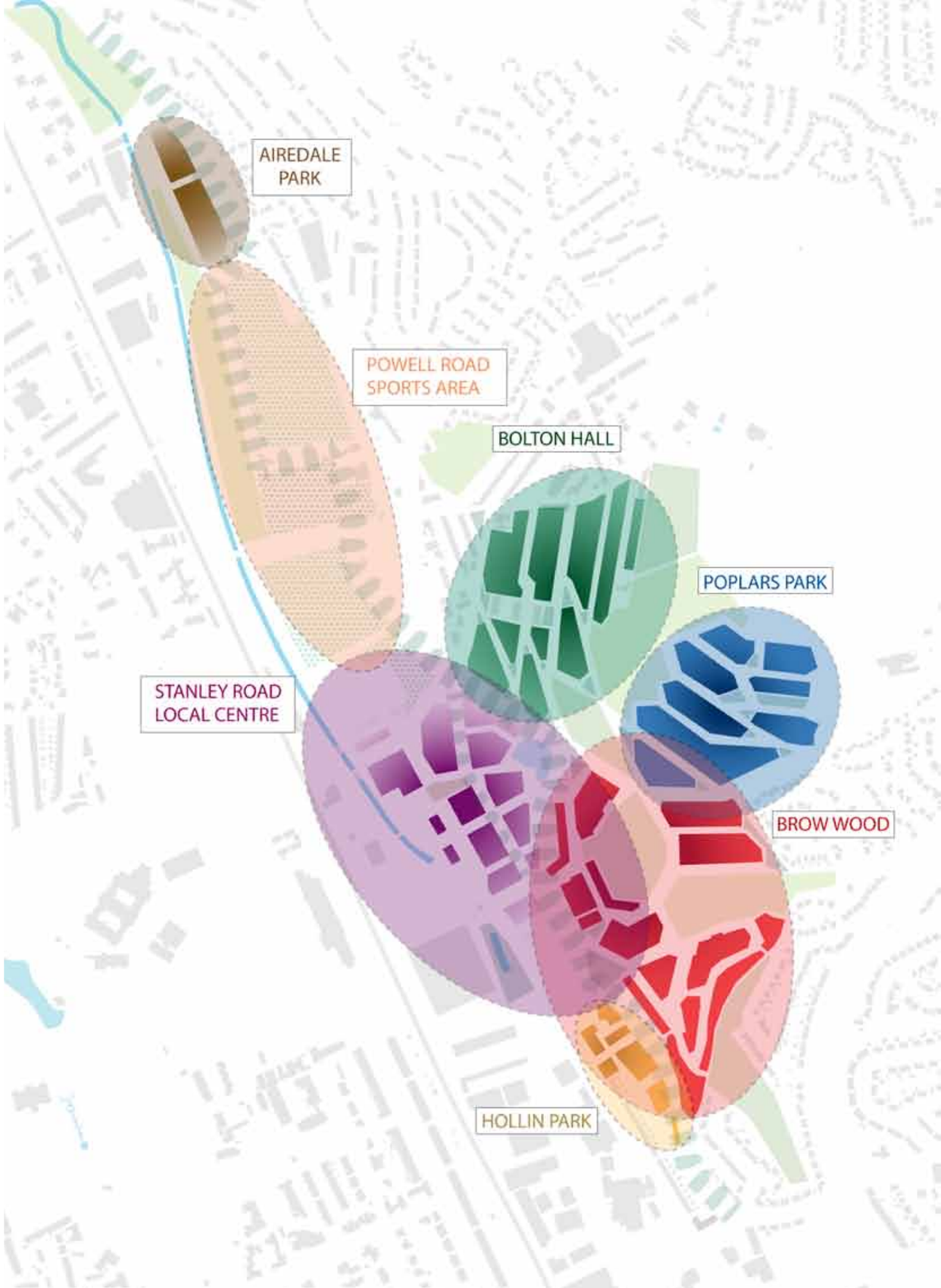
2. Poplars Park. This will be defined by its winding streets and brilliant views over to Manningham. It will be adjacent to the new neighbourhood park.

3. Bolton Hall. This will take precedent from the existing terraced housing on Bolton Hall Road. It will be punctured with pocket parks to enable streets to wind down the hillside.

4. Hollin Park. Again this neighbourhood will be defined by topography. At the base of the valley the land is much more flat and as such a mixture of apartments and high density townhouses are proposed. The adjacency to the local centre and station will make this a vibrant place to live.

5. Airedale Park. Somewhat separate from the main masterplan, this residential area will consist of a mixture of semi detatched and small rows of terraces.

6. Stanley Road. This will act as the focus for all the sub neighbourhoods. With shops, a pub, a primary school, new 3G sports pitch, health centre, public spaces and community centre this really will be the new heart of Bolton Woods.



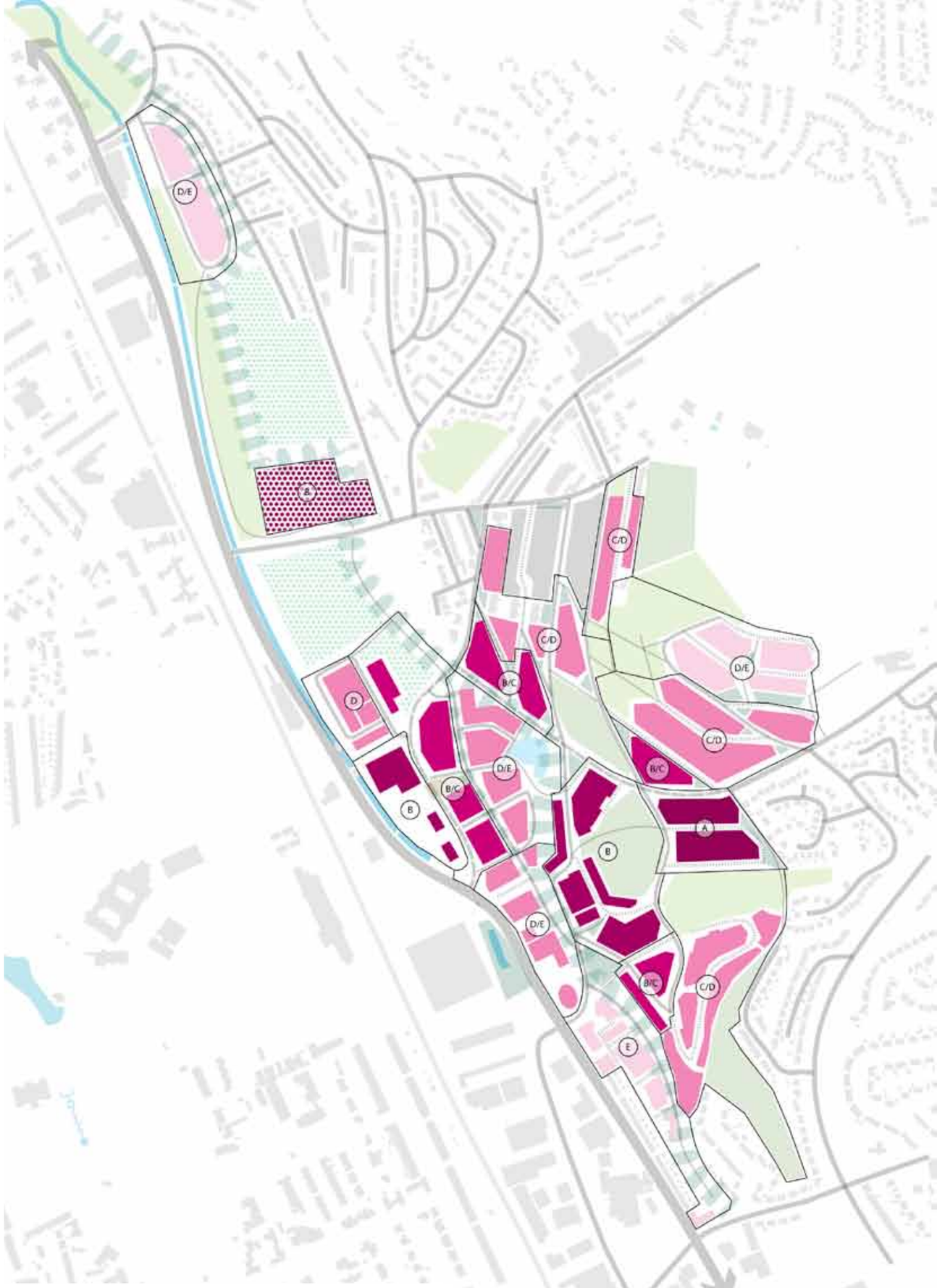
5.9 Parcellation Plan

The plan to the right shows a series of development parcels and indicative phasing of the scheme. This is intended to assist in creating a viable route to development.

The phasing strategy is based on a series of development plots allowing the scheme to be brought forward over a number of years. The intention is that planning obligations be linked to each parcel, which are triggered when each parcel is developed. However, the order in which these parcels are to be developed is not set by the application and will depend on the market and developer partners selected. The boundaries of each parcel have been drawn to indicate within which parcel each open space area will be procured.

The construction of phase 1A and 1B is almost complete and Phase 1C and 1D (the remainder of the previous application for housing), the 3G pitch and the retail units are expected on site within the next year. These are all the subject of separate planning applications, the housing having received planning last year and the 3G pitch and retail being applied for this year.

The numbering on the plan shows an illustrative phasing order for these parcels. The higher density local centre is expected to be delivered later on in the scheme because we need to establish the area as a recgnised place before this becomes viable.



6. Access & Streets

6.1 Road Network and Public Transport

The streets around the development should be designed in accordance with Leeds City Council's *Streets Design Guide* as well as *Manual for Streets* to contribute to the sense of place and identity of New Bolton Woods, as well as providing for the functional requirements such as access and servicing of the Development. The access strategy also takes into account existing links to public transport and potential new public transport options.

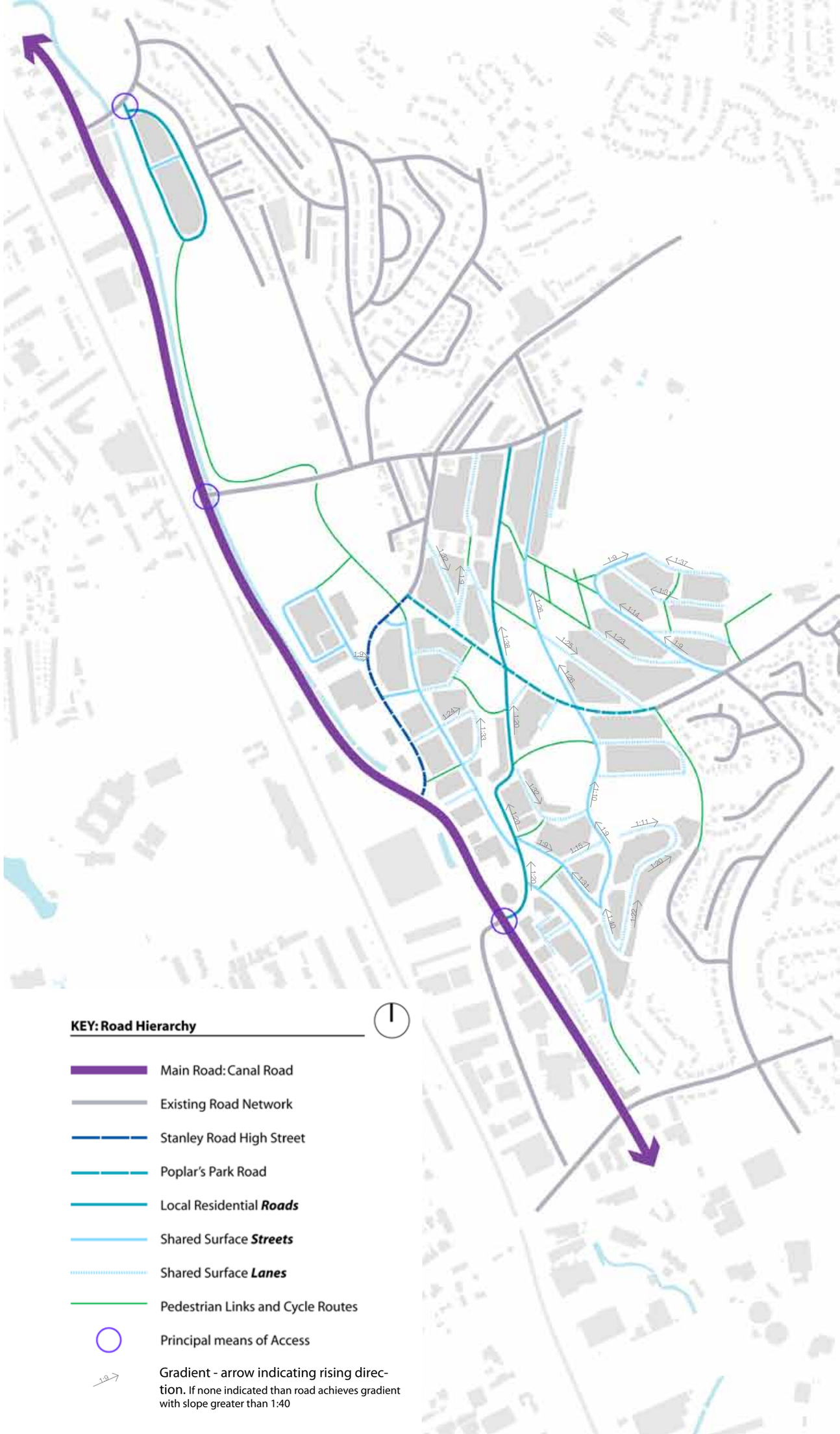
Streets have a crucial part to play in the delivery of a sustainable community. They can be much more than just routes for vehicles; well designed streets encourage walking and cycling and more people on the streets leads to improved personal security. People who live in good-quality environments are much more likely to have pride and a sense of ownership of an area. Creating a permeable network also eases navigation.

The streets will be proposed for adoption and should be designed in accordance with the *Leeds City Council Streets Design Guide.* The guide establishes a range of street typologies which are defined by the role they play in the movement network and this hierarchy has been applied to the illustrative masterplan at New Bolton Woods.

In line with *Manual for Streets* guidance, the movement framework is based on a user hierarchy. Where appropriate the road hierarchy is knitted into the existing street network of the surrounding neighbourhoods. These routes are generally straight and connected, where possible. Pedestrians and Cyclists are accomodated on each street type rather than segregated from motor traffic.

The design team worked hard to understand the site topograhy and the constraints imposed by the steep gradient. This work informed the masterplan's overall shape and organisation. We aimed with this road layout to create, where achieveable, routes of no more than 1 in 20. Due to the steepness of the slope a maximum gradient of 1 in 9 has been implemented over the entire masterplan, but as shown on the plan, this only happens on a dozen or so routes.

The Design Guide should be referred to in developing the detailed design and all proposals will be subject to agreement with BMDC but some key principles of the street typologies are described in the following pages.



6.2 Canal Road

Access to the site has been thoroughly consulted on, designed by Mott Macdonald with input from BMDC highways department.

The site is presently accessible at four priority junctions:

> A6037 Canal Road / Poplar Road

> A6037 Canal Road / Gaisby Lane

> A6037 Canal Road / Stanley Road

> King's Road / Poplars Park Road (although this road currently does not continue through the site)

Work is scheduled to commence in autumn 2014 to upgrade the A6037 Canal Road / Stanley Road junction. The A6037 / Stanley Road junction is presently a priority junction; however it is subject to a local pinch point funded improvement scheme. The scheme comprises of a new signalised junction which will replace the existing single lane carriageway priority junction. The new junction will provide additional capacity, pedestrian crossing facilities and cycle stop lines. The improved junction will help reduce congestion on this stretch of Canal Road, improve safety for cyclists and pedestrians and cater for future traffic growth, supporting potential housing and employment proposals contained in the New Bolton Woods masterplan. The proposed development also includes:

> A new access road off Poplar Road.

> Signalisation of A6037 Canal Road / Gaisby Lane.

> A new signalised junction, located at the present access to the Arnold Laver works site, opposite Hillam Road, as shown below.

An important factor that accounted for success in securing pinch point funding was that it would help facilitate the New Bolton Woods regeneration initiative.

New Site Access Junction off Poplar Road:
A new access road is to be constructed, linking to the south side of Poplar Road, adjacent to the existing raised table crossing. This is an uncontrolled priority junction with drop crossings and tactile paving provided on pedestrian desire lines. Visibility splays are shown to be adequate (2.4m x 43m) and in-line with Manual for Streets[1] standards for a 30mph design speed.

Signalisation of Canal Road / Gaisby Lane Junction:
This junction will be signalised, with Gaisby Lane westbound having both a left-turn and right-turn lane. Pedestrian controlled crossings are provided across the arms of Gaisby Lane and Canal Road (N), with tactile drop crossings. Guard railing is to be installed along the western side of the Canal Road carriageway at this junction.

New signalised junction of Canal Road / Hillam Road / Arnold Laver Site Access:
A new arm has been added to this junction in order to allow access to the development site. This transforms the junction from a 3-arm priority junction to a 4-arm signalised junction. Canal Road will feature ahead-left and right turn lanes on both the north and south arms. The new carriageway access to the development site will also feature ahead-left and right turn lanes.

All arms will feature pedestrian controlled crossings with refuge islands. The existing pelican crossing on the north arm of Canal Road will be removed.

For more detailed drawings of these particular junctions please see appendix 10.3 at the back of this document.

1 CIHT (2010) Manual for Streets 2: Wider Application of the Principles.

New Site Access off Poplar Park Road

Signalisation of Canal Road and Gaisby Lane

New junction at Hillam Road/ Arnold Laver Site

6.3 Stanley Road

This is the high street for the proposed local centre. It will have active frontage on to it and aims to provide a pleasant pedestrian friendly environment.

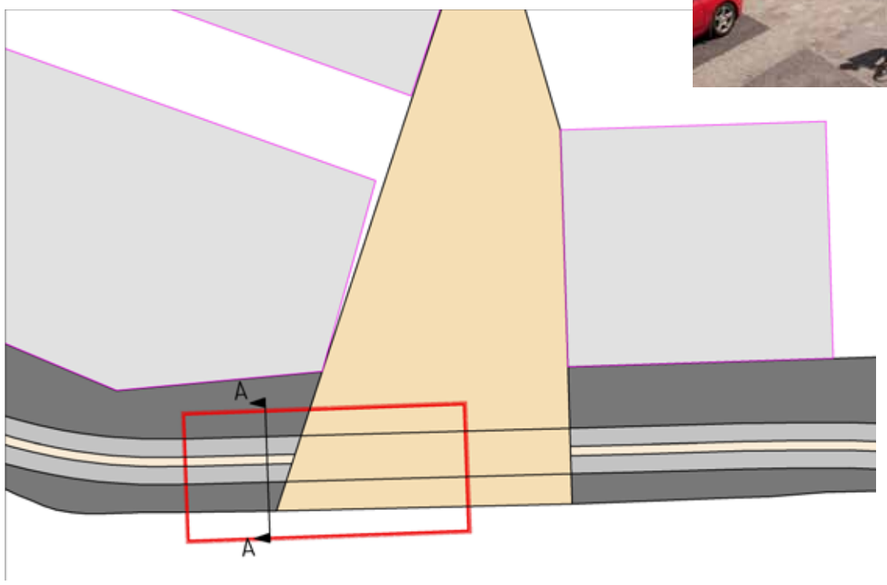
1. On the approaches to the central shared space the introduction of a median strip makes crossing the carriageway much easier and also encourages reduced vehicle speeds as the perception of a very narrow carriageway is achieved even when there is no on coming vehicular traffic.

2. Use of low up-stands (30mm) and more distinctive pavement materials contributes to reduced speed, increased user awareness and promotes pedestrian priority or sharing of the space.

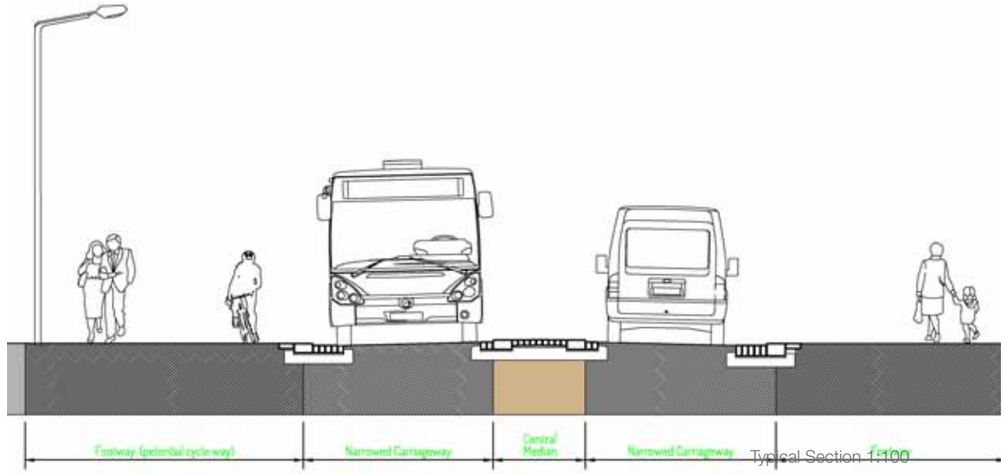
3. Courtesy crossing points which follow desire lines reinforce pedestrian priority at key points and contribute to further traffic calming.

4. Continuation of the central public Square across Stanley Road reinforces the connection between uses to the east and west of the Road and dilutes the perception of Stanley Road as a barrier. Drivers should feel like they are passing through this space, rather than moving along the edge.

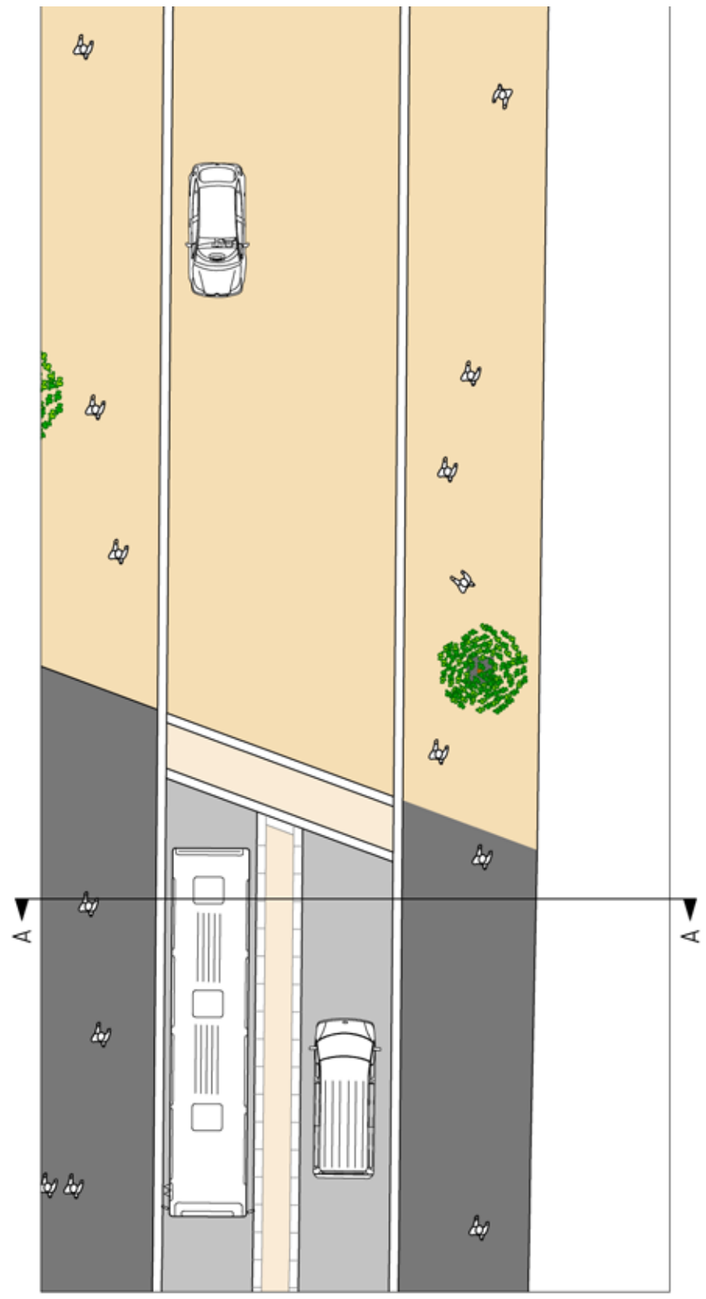
5. Consideration should be given as to whether the cycle way should run along a shared pedestrian/cycle footway or whether cyclists should be encouraged to share the carriageway with the calmed vehicular traffic.



Context Plan: 1:1000



Typical Section 1:100



Typical Plan: 1:200

6.4 Poplars Park Road

This is an existing road which will provide good access to several of the neighbourhoods. There will be specially designed features in order to calm traffic speeds naturally. These are beign developed by CIVIC engineers in discussion with BMDC Highways engineers. The materials used on the roads should be selected from the standard suite of materials BMDC already use, should be hard-waring and take account of the council's maintenance requirements.

1. Carriageway has a minimum width of (6.7m generally if a bus is to be accommodated) but can narrow locally to a minimum of 3.4m to create interest within the streetscape and calm traffic.

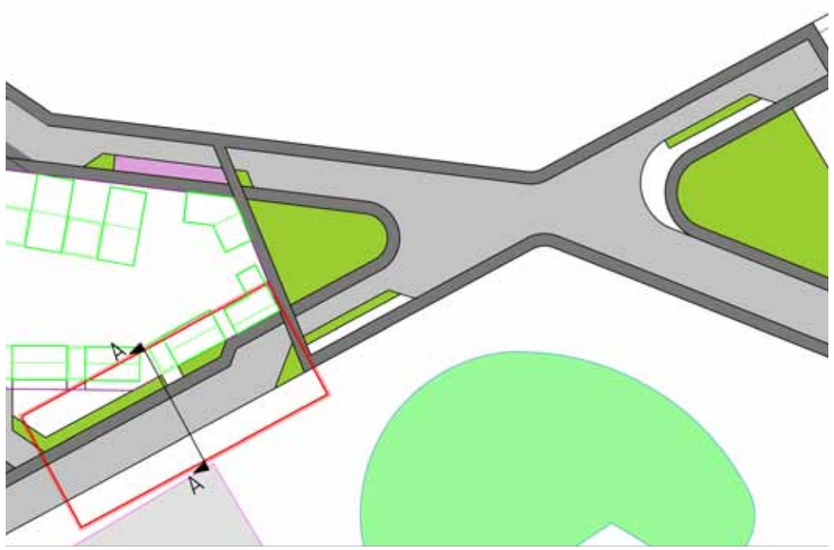
2. 2m footway delineated by a 60mm up-stand kerb. Where there is only single frontage to the road a single footway should be provided subject to consideration being given to pedestrian routes, desire lines and the provision of safe crossing points.

3. Traffic calming elements could be provided within the carriageway in the form of landscaping or tree planting. Due to the steep gradient of the road traffic calming should primarily be provided on the downhill side, reducing the likelihood that vehicles climbing the hill will have to stop.

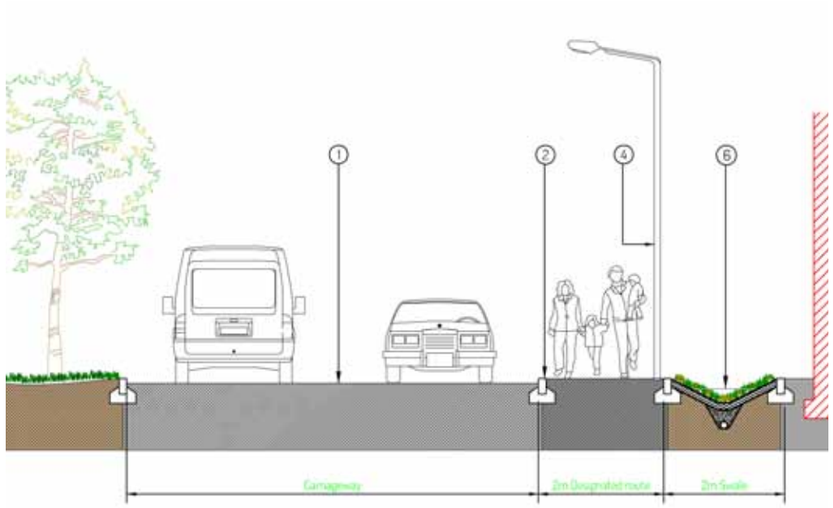
4. BMDC have advised that they do not currently promote building mounted street lighting although this may change in the future. Lighting columns and street furniture should be considered so as to minimise impact on desire lines and to contribute positively to the streetscape where feasible.

5. Lining, signing and highways related paraphernalia should be kept to a minimum in order to reduce the amount of visual and physical clutter within the streetscape.

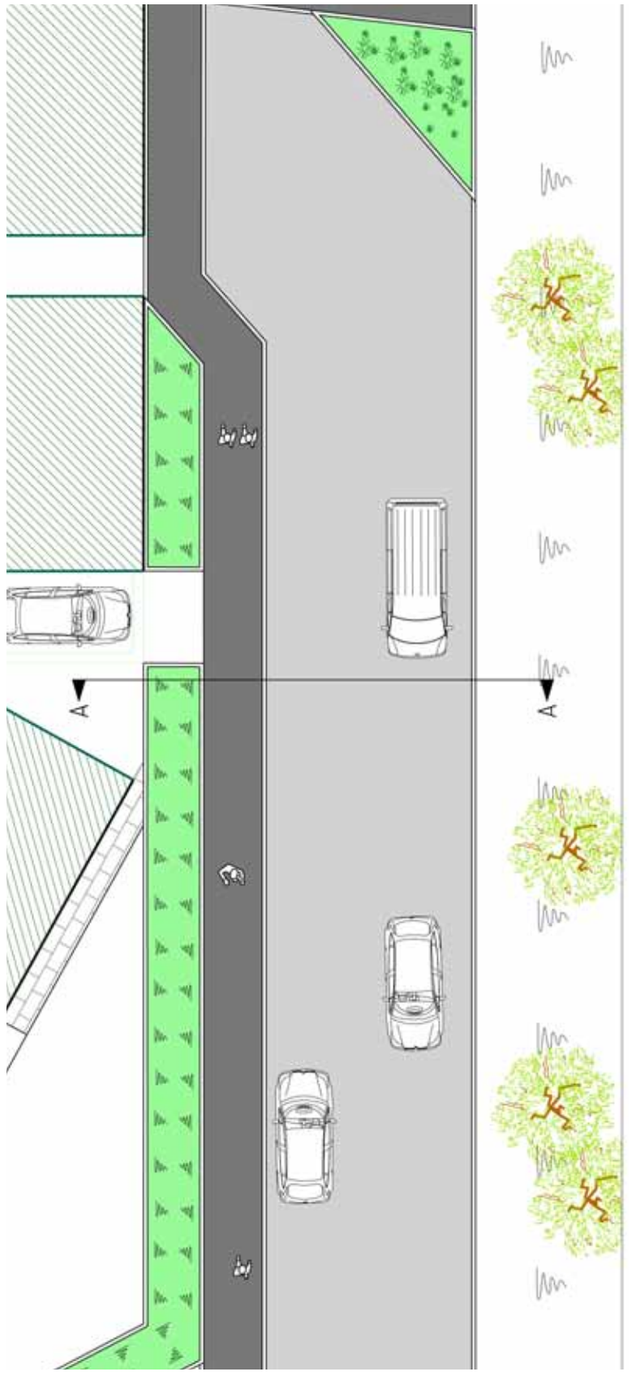
6. Street Swales could be provided as part of the SuDS network to convey water down the hillside.



Context Plan: 1:1000



Typical Section 1:100



Typical Plan: 1:200

6.5 Local Residential *Roads*

These are general roads within the masterplan which carry a range of movement types. They will carry through traffic and provide the main setting for the new neighbourhoods.

1. Carriageway has a minimum width of 6m generally, but can narrow locally to a minimum of 3.4m to create interest within the streetscene and calm traffic.

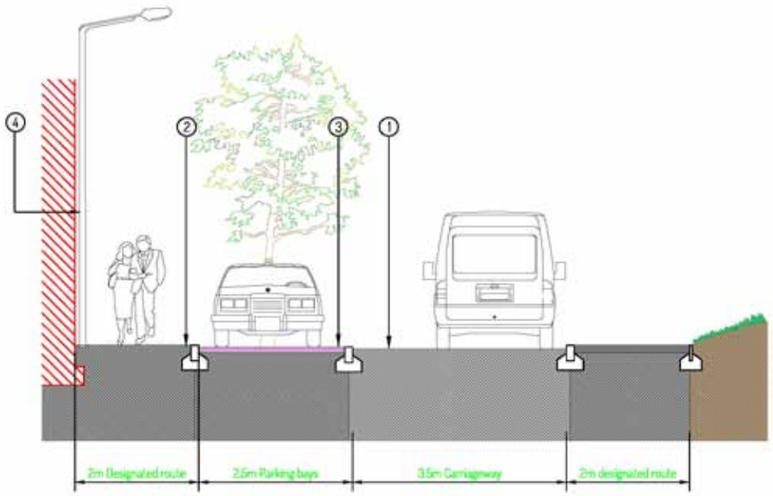
2. 2m footway delineated by a 60mm upstand kerb.

3. Where longitudinal car parking bays are provided on street they could be “book-ended” by trees or planting to ensure that traffic calming function is maintained even when spaces are not occupied.

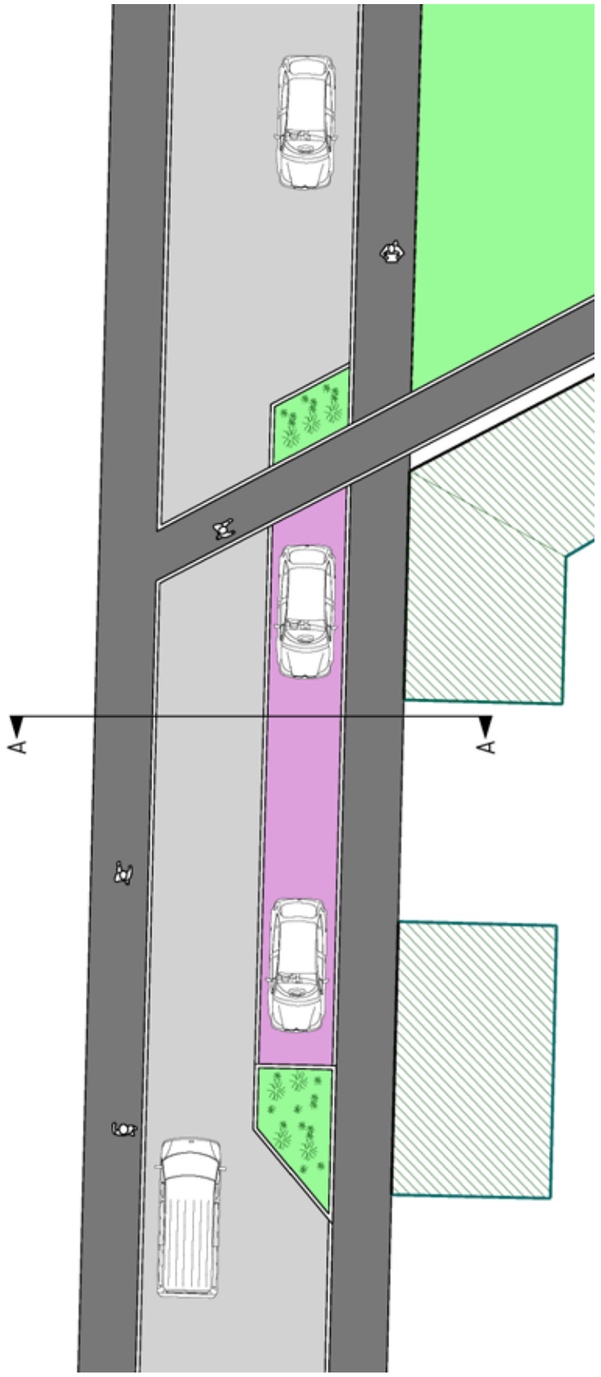
4. BMDC have advised that they do not currently promote building mounted street lighting although this may change in the future. Lighting columns and street furniture should be considered so as to minimise impact on desire lines and to contribute positively to the streetscape where feasible.

5. Lining, signing and highways related paraphernalia should be kept to a minimum in order to reduce the amount of visual and physical clutter within the streetscape.

Context Plan: 1:1000



Typical Section 1:100



Typical Plan: 1:200

6.6 Shared Space
Streets

These streets have shared spaces with designated pedestrian routes and with very low vehicle speeds. The speed of traffic will be self-enforcing through the street design. These routes are designed for access around the neighbourhood.

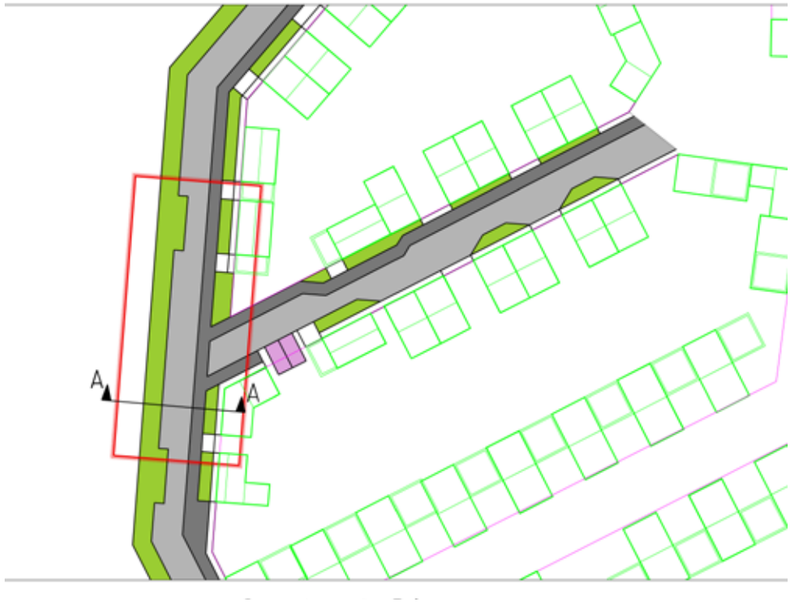
1. Carriageway has a minimum width of 5m generally, but can narrow locally to a minimum of 3.4m to create interest within the streetscene and calm traffic.

2. 2m footway designated pedestrian route or similar material to shared surface, delineated by a 30mm upstand kerb. Designated route should run along desire lines and run across junctions where appropriate.

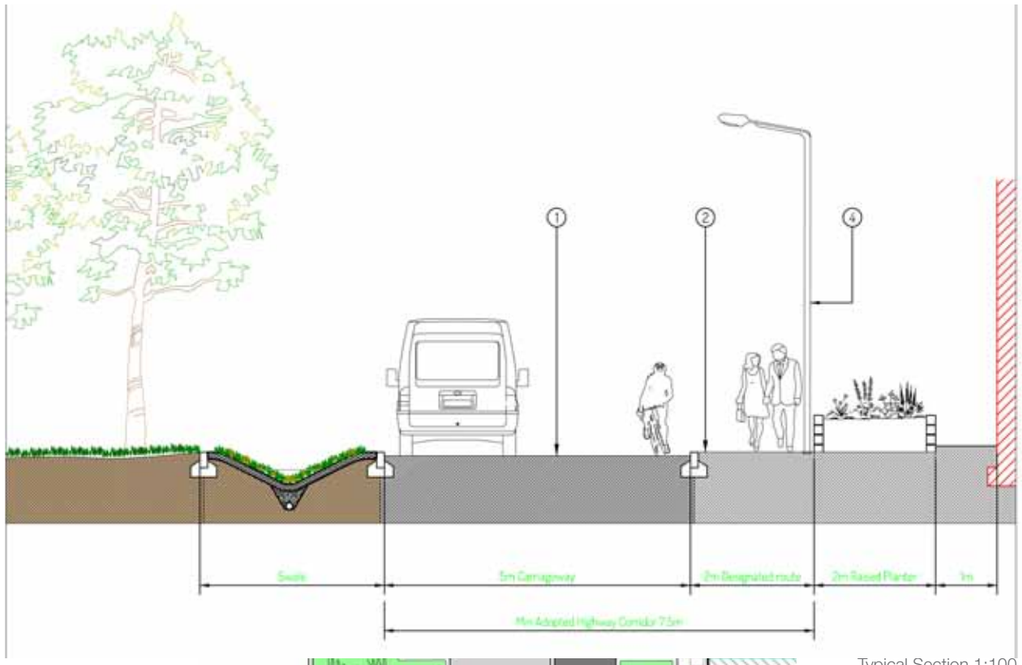
3. Where vehicular access is required to driveways or garages on steeper streets then planters can be used to create a zone within which the gradient can transition to level. These planters could also form part of the SUDS strategy, collecting, filtering and attenuating surface water run off from the street and homes.

4. BMDC have advised that they do not currently promote building mounted street lighting although this may change in the future. Lighting columns and street furniture should be considered so as to minimise impact on desire lines and to contribute positively to the streetscape where feasible.

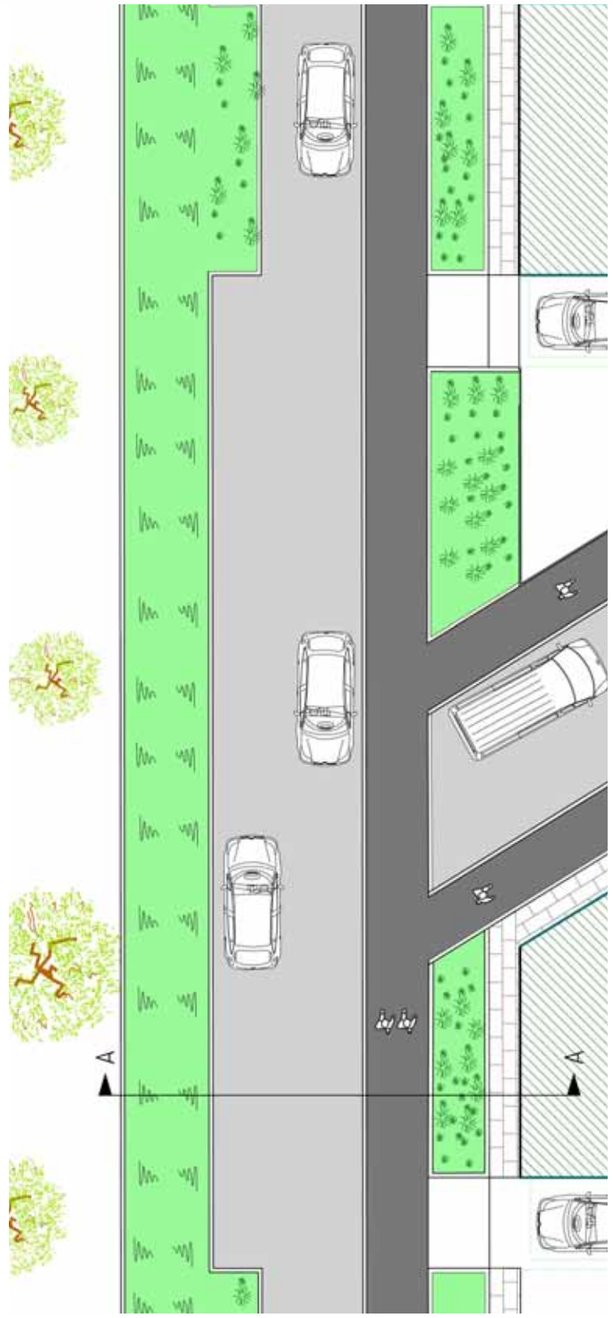
5. Lining, signing and highways related paraphernalia should be kept to a minimum in order to reduce the amount of visual and physical clutter within the streetscape.



Context Plan: 1:1000



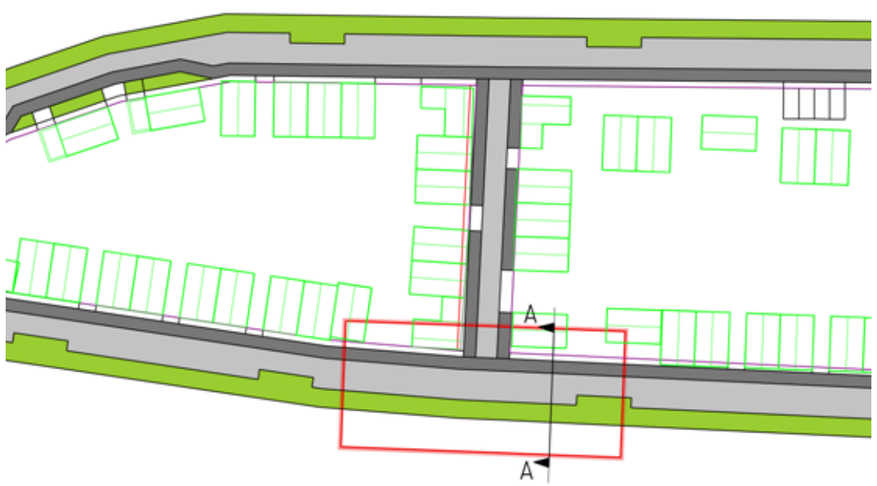
Typical Section 1:100



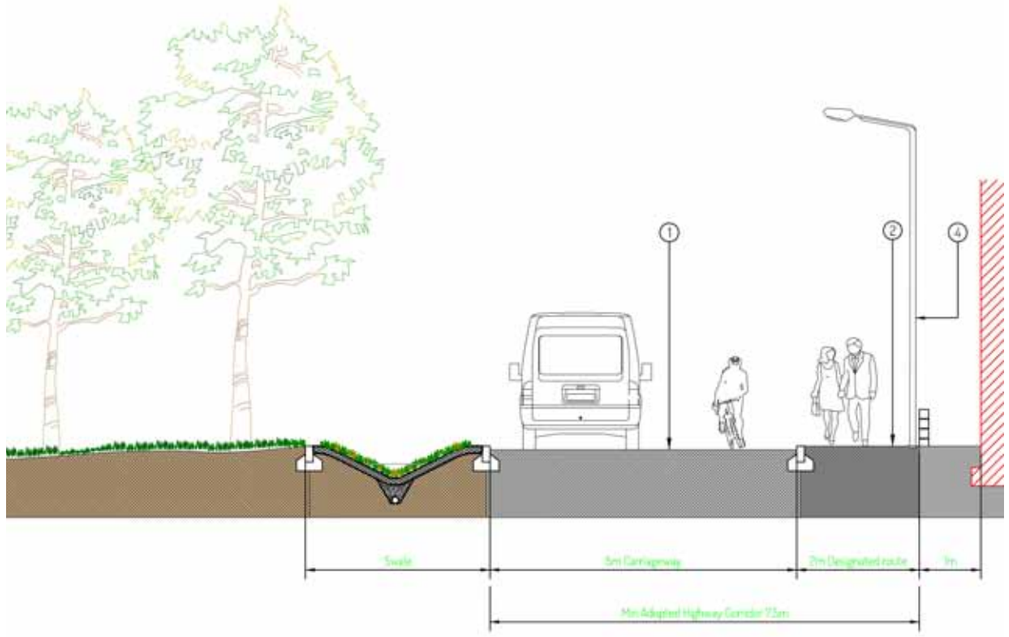
Typical Plan: 1:200

6.6 Shared Space
Streets

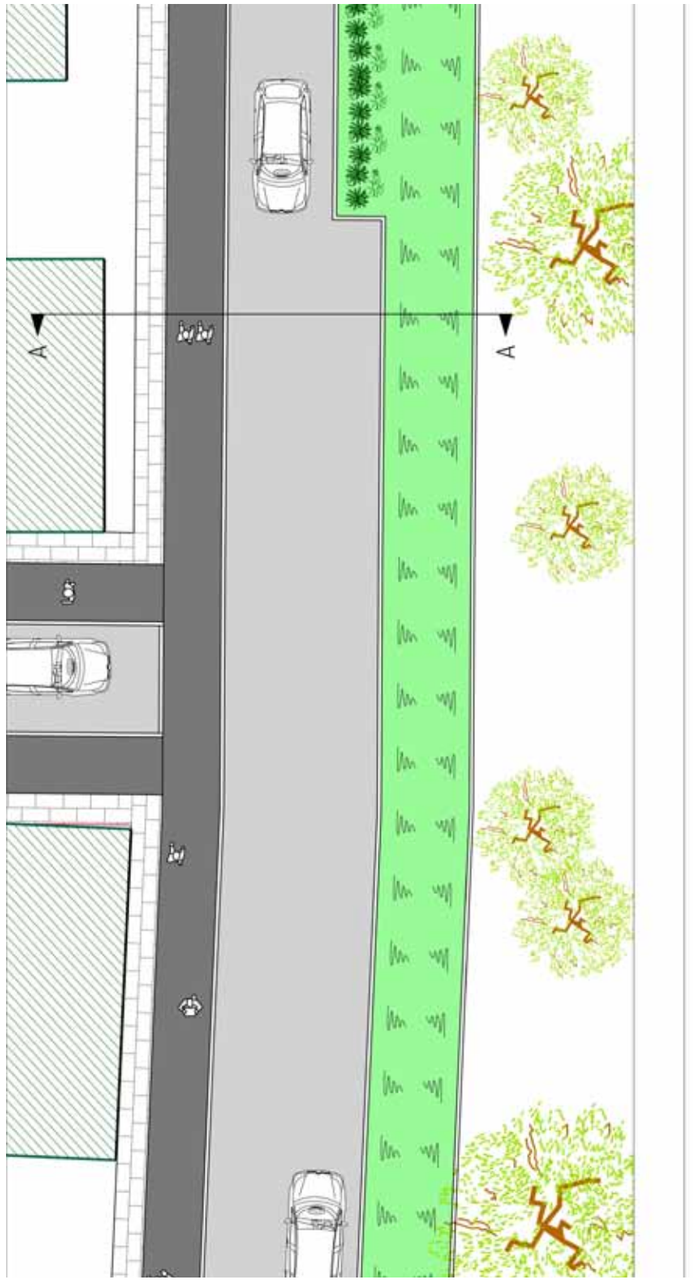
These images give further examples of shared space streets with designated pedestrian routes and very low vehicle speeds. The speed of traffic will be self-enforcing through the street design. These routes are designed for access around the neighbourhood.



Context Plan: 1:1000



Typical Section 1:100



Typical Plan: 1:200

6.7 Shared Space
Lanes

These lanes are shared spaces with designated pedestrian routes and with very low vehicle speeds. The speed of traffic will be self-enforcing through the street design. These routes are designed to act for access for residents only.

1. Shared surface has a minium width of 3.4m generally but widens to provide passing points along its length.

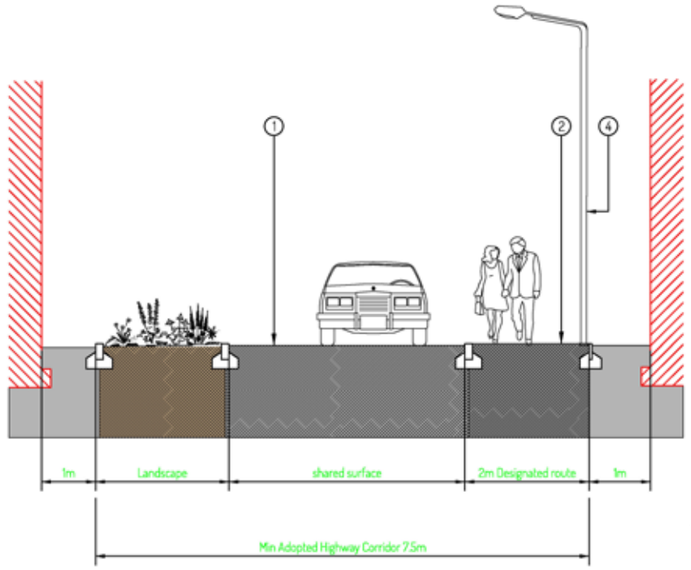
2. 2m wide designated pedestrian route in same material to shared surface, delineated by a 30mm upstand kerb. Designated route should run along desire lines and run across junctions where appropriate.

3. Where vehicular access is required to driveways or garages on steeper streets then planters can be used to create a zone within which the gradient can transition to level. These planters could also form part of the SUDS strategy, collecting, filtering and attenuating surface water run off from the street and homes.

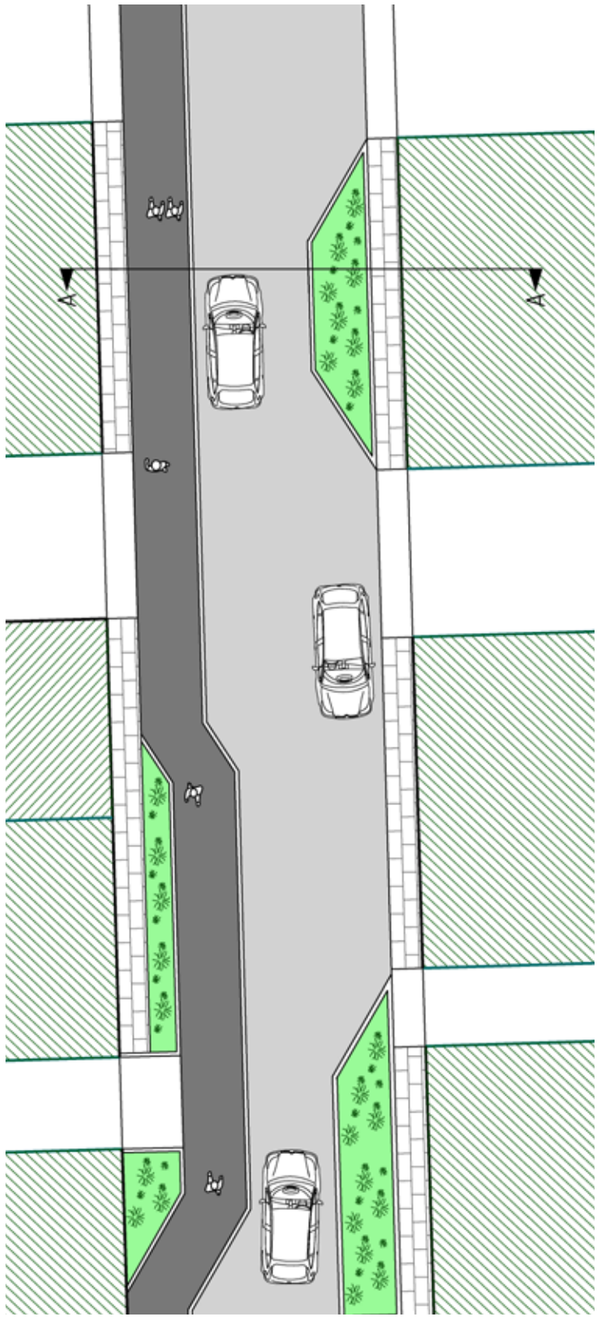
4. BMDC have advised that they do not currently promote building mounted street lighting although this may change in the future. Lighting columns and street furniture should be considered so as to minimise impact on desire lines and to contribute positively to the streetscape where feasible.

5. Lining, signing and highways related paraphernalia should be kept to a minimum in order to reduce the amount of visual and physical clutter within the streetscape.

Context Plan: 1:1000



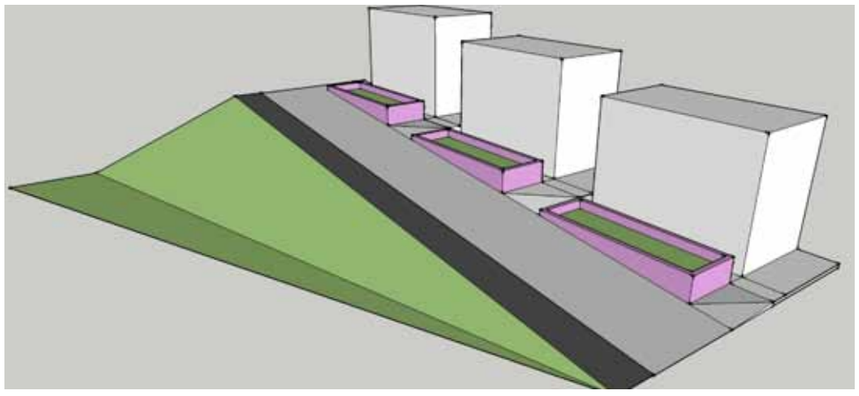
Typical Section 1:100



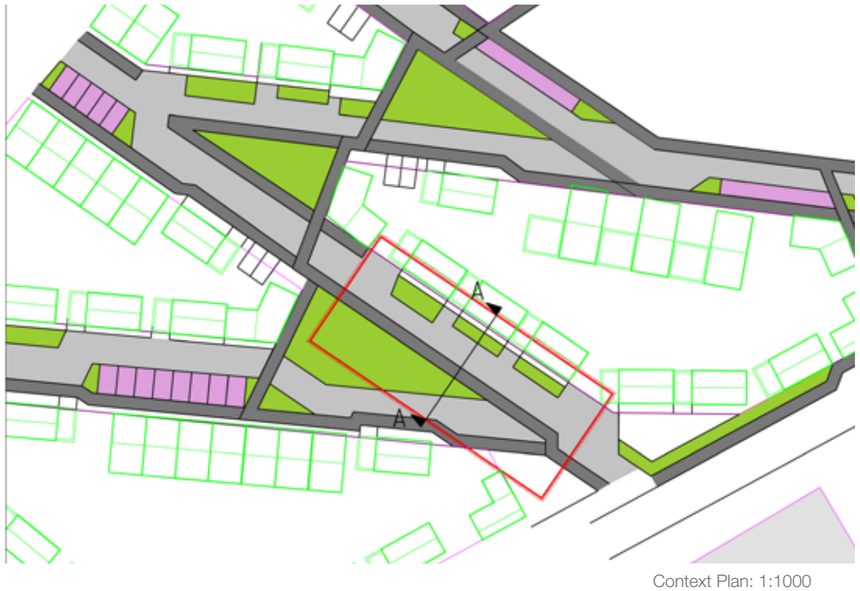
Typical Plan: 1:200

6.7 Shared Space
Lanes

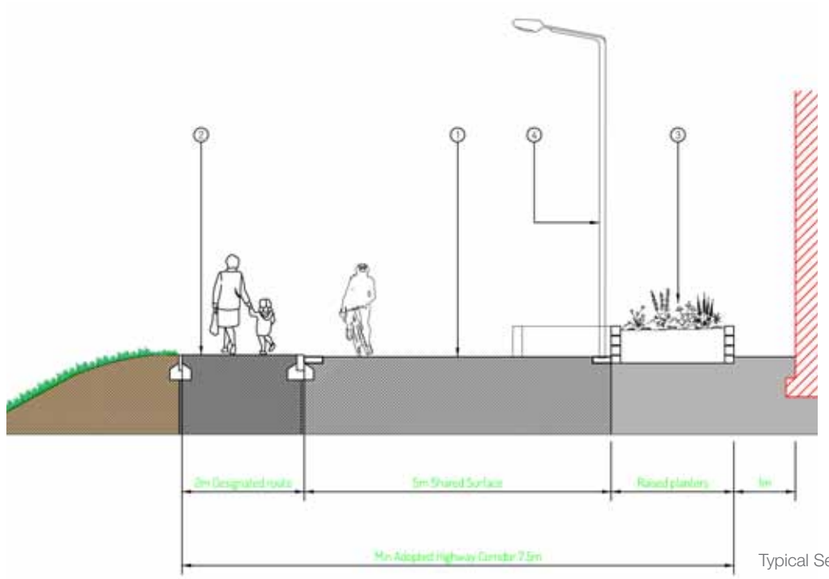
These images give further examples of shared space lanes with designated pedestrian routes and with very low vehicle speeds. The speed of traffic will be self-enforcing through the street design. These routes are designed to act for access for residents only.



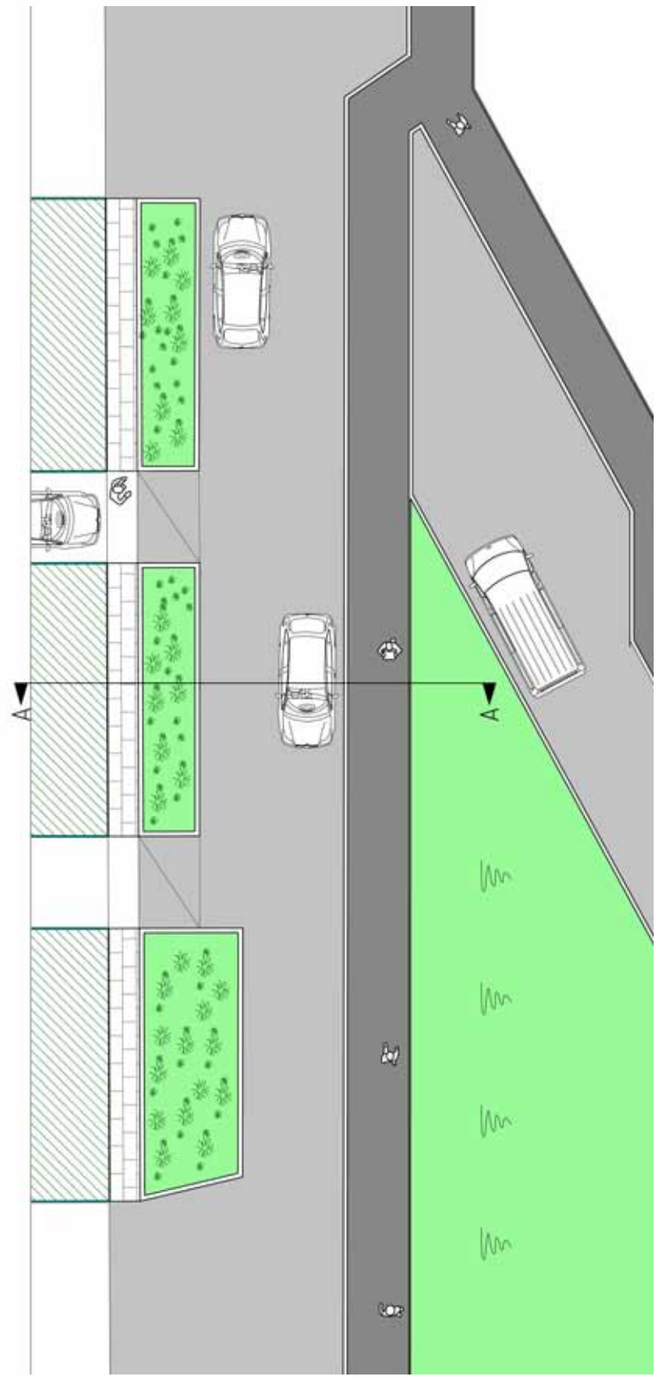
Perspective



Context Plan: 1:1000



Typical Section 1:100



Typical Plan: 1:200

7. Landscape & Open Space

7.1 Open Space Network

A clear vision is required for the Green Space Strategy in order to underpin the development strategy. Historically, Bolton Woods represented a well wooded edge to the City of Bradford, with its woodland setting forming the defining character of the locality. During the areas expansion as an overspill area within the 20th century, the emerging neighbourhoods became disconnected from their environment, with housing turning its back on a series of empty spaces.

The masterplan provides an opportunity to re-connect the existing and new neighbourhoods with their landscape context. In order to realise this vision the wooded landscape character must be drawn into centre of the village, providing character, hierarchy, role and function to the existing network of open spaces. Building on the hillside landscape character of New Bolton Woods, resolving its relationships with the adjacent neighbourhoods, and introducing strong planting along key movement corridors will spread the value uplift created by the urban regeneration.

Key Principles to create a hierarchy of parks and spaces:

> Creation of new Neighbourhood Parks, in order to create a Comprehensive Landscape Framework based on a hillside and woodland setting, which integrates with residential areas.

> A softer transition between urban/rural along the northern edge of settlement.

> Formulation of Green Corridors.

> Natural open space - new and improved locations with opportunities for biodiversity enhancement.

> The creation of local parks, doorstep spaces and gathering spaces.

> Opportunities for enhanced sporting provision.

> Opportunities for play enhancement.

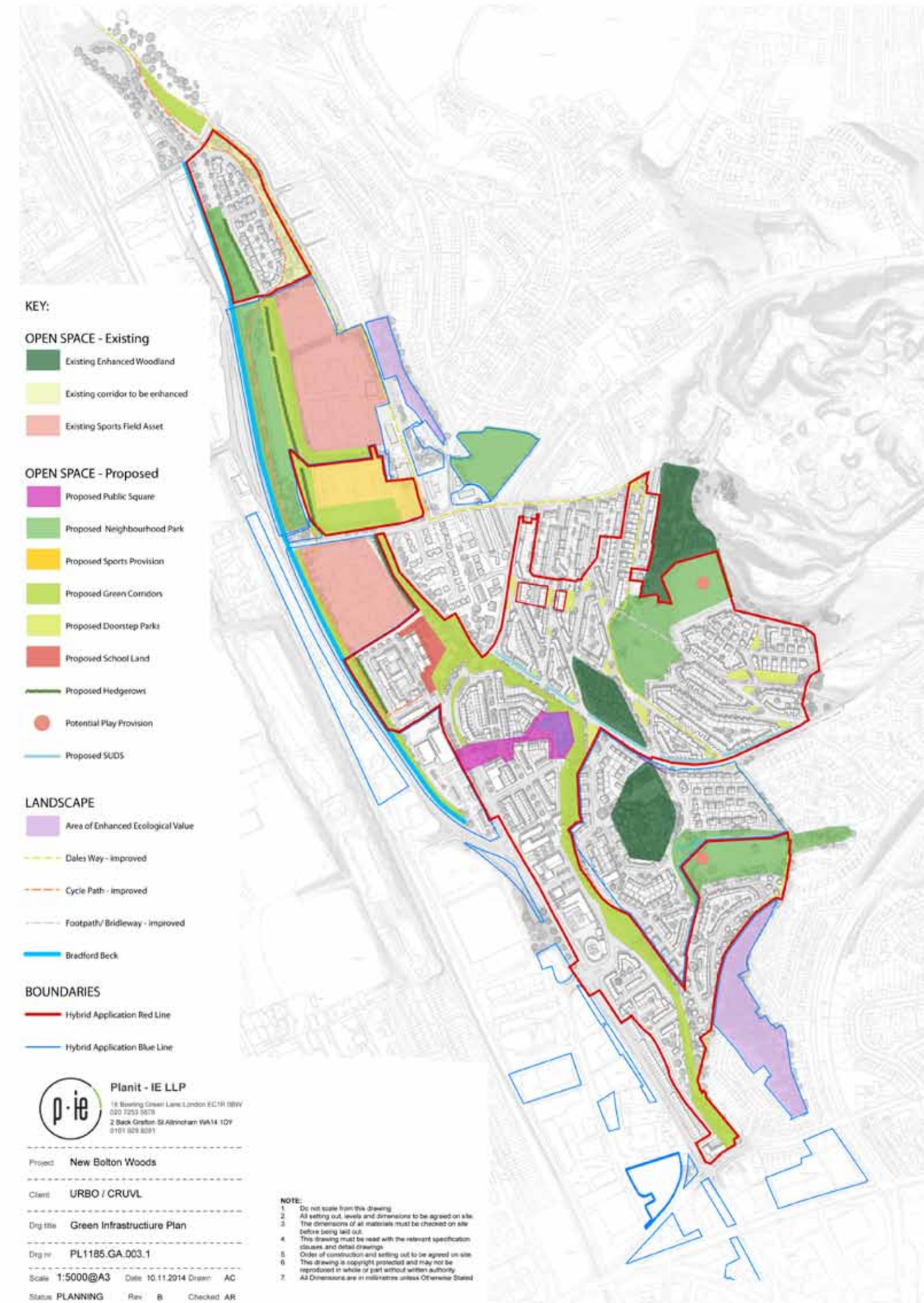
> Well defined gateways.

> Green linkages in the form of tree streets.

> Enhanced pedestrian environments along key streets.

> New overlooking development that embraces its setting.

> Green streets with the proposed residential areas.



7.2 Public Squares

The historic village of Bolton Woods old village had a strong centre with shops and other shared facilities that can be re-established by central public spaces in the heart of New Bolton Woods village that will ensure its sustainability and unique character. The provision of new shared spaces will create an attractive pedestrian environment to the village centre with a strong local identity. New public realm spaces will be created which adds a degree of friction to the village centre, where people will stop and are encouraged to dwell.

Two key spaces are defined, a new local public square and the basin space. High quality materials and design will ensure an attractive and pleasurable place to be.

Public Square

A shared, formal surface between pedestrians, cyclists and cars will create a vibrant and attractive public realm. Enclosing the public spaces with active uses will encourage observation and overlooking.

Water features and benches along the square will offer opportunities for different activities. Trees and lighting will be integrated to provide a safe and sustainable space.

Delph Space

The basin space will be a very important element that will highlight the unique identity of New Bolton Woods as the transitional space between the formal (squares) and the natural (hillside) landscape between the village centre and the hill.

The water basin offers opportunities for recreation and play around the waters edge. These activities could include: racing sailboats in the basin or play with the shallow film of water along the shared space.

Due to the significant level difference, a retaining green criblock wall will retain the soil; the provision of natural planting will help create the transition between formal and informal character. Pedestrian pathways will provide access to the waters edge.

The images above indicate the quality of waterside public realm that could be achieved with particular reference to making a positive relationship with steeper level changes, and the recreational value that could be created around the waters edge.

Location of section shown on map above

7.2 Public Squares

Public Square Indicative Plan 1:500

7.3 Parks and Woodland

Two neighbourhood parks are proposed to be created through utilising the hillside, existing woodland and riverside open spaces for new recreational purposes.

Poplars / Hill Top Park

A new Neighbourhood Park of around 3.5 ha. is proposed combining the existing open space that is well connected through safe paths. This new, publicly accessible green space will include play spaces and a variety of planting to offer a mixture of scent, colour and texture. An important driver is the provision of new planting, where feasible, which would serve to shelter play spaces and enhance the visual quality of the hillside.

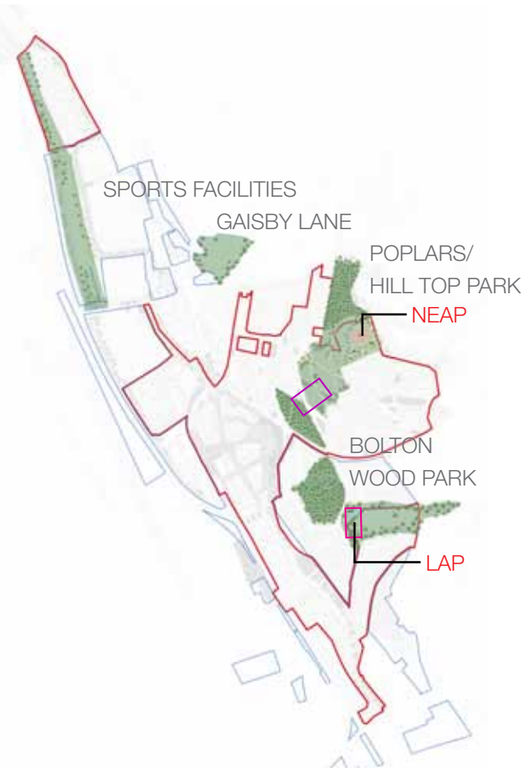
A Neighbourhood Equipped Area for Play (NEAP) would be created on the top of the hill offering play opportunities for older children.

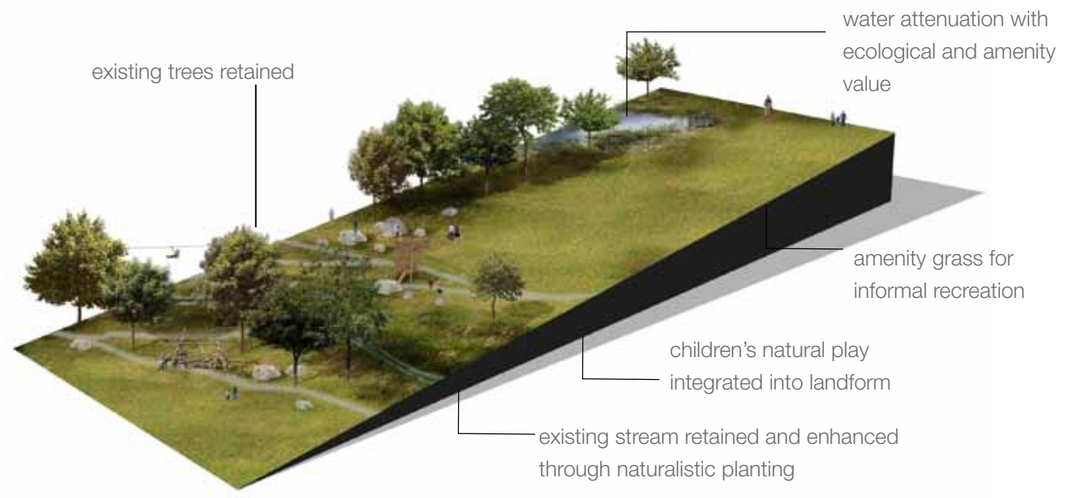
The park would also provide a strong ecology theme - including a nature trail and semi natural open space / ecology areas. References to the historic use as a farm could be used to create opportunities for play provision. This could be enhanced by giving the opportunity to locals to grow community gardens.

Brow Wood Park

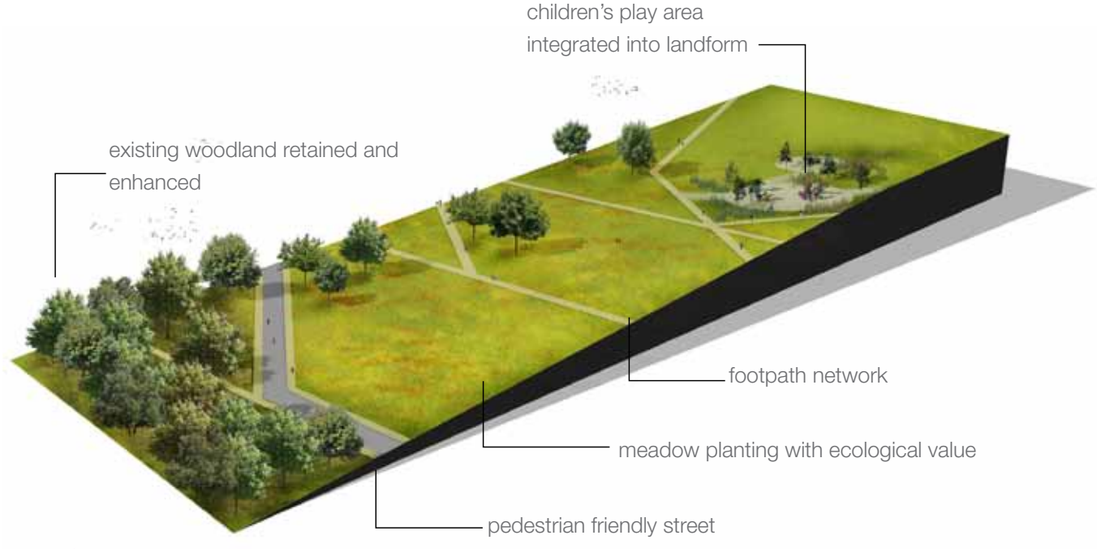
A new park near the new housing on Poplar's Park Road will enhance the existing natural landscape. A Local Area of Play (LAP) could be provided in this part of the park. These areas may have little or no equipment but is imaginatively designed and contoured, using as far as possible natural materials such as logs or boulders which create an attractive setting for play.

Indicative Proposed NEAP Plan 1:1000





Location of section shown on map above



Location of section shown on map above

7.4 Sports Provision: 3G Pitch

One of the cornerstones of the Vision for New Bolton Woods is to build on the existing Sports provision within the area and to consolidate this as part of an attractive set of community facilities around the new Local Centre.

General Sports and Leisure Strategy

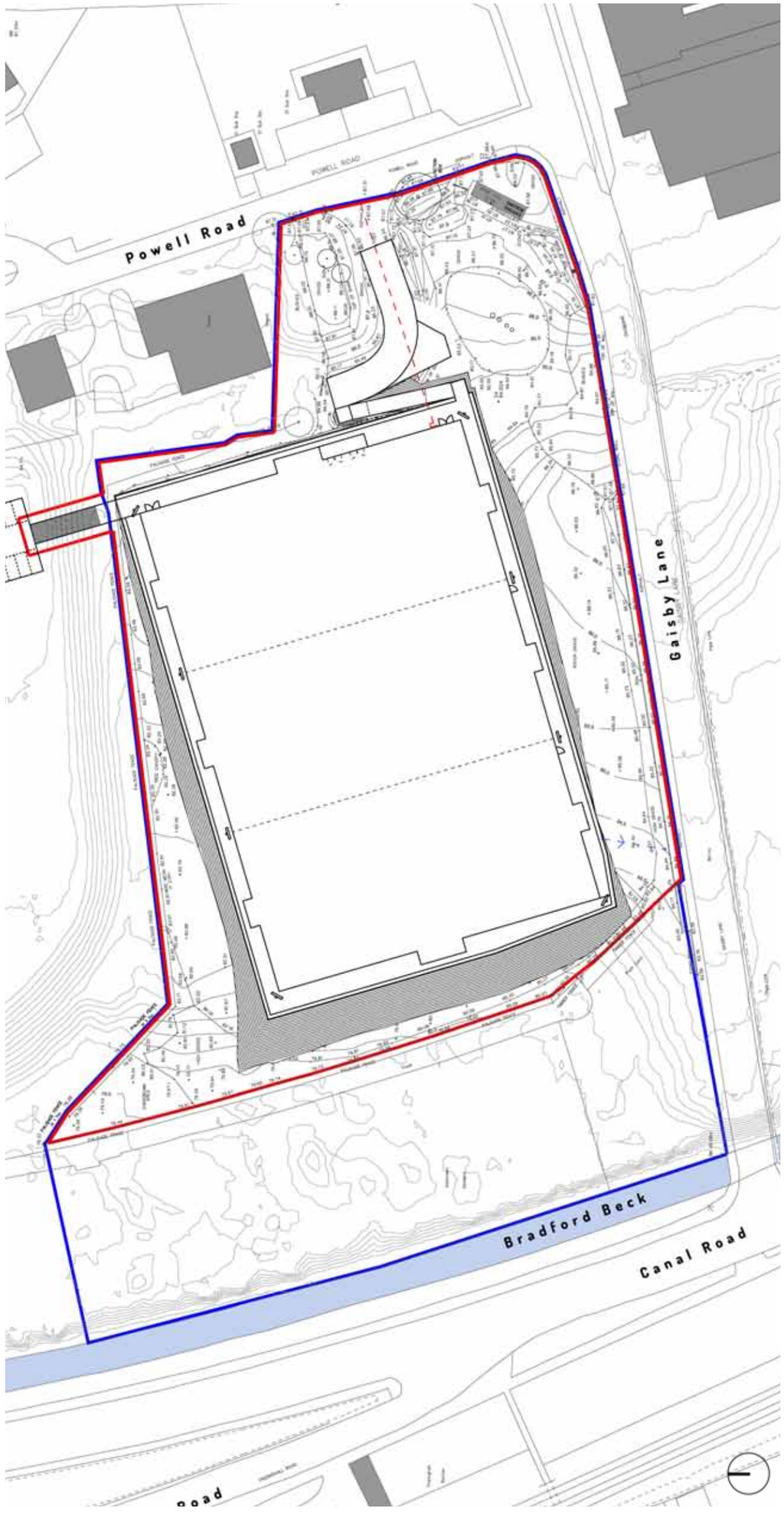
CRUVL's overall Sports and Leisure Strategy is provided as a separate document included as part of the overall planning application (please see the report titled Plans for Community Sport and Leisure) . The main thrust of this strategy is to explain how CRUVL has worked to reach an understanding of the sports requirements of the local area and to facilitate these within the masterplan for New Bolton Woods. CRUVL as a Public-Private Partnership has a clear remit from Bradford Council to balance uses within a 'residential-led sustainable mixed-use development'. Given a finite supply of land CRUVL has sought to address Sports and Leisure provision by seeking an intensification of use within Bolton Woods. This strategy has been developed in conjunction with stakeholders such as Bolton Woods Junior Football Club and Bolton Woods Seniors who are established local football clubs with strong community links. The strategy has also been explained and positively received by the local community through various public consultation events.

The strategy will be applied in a number of ways through the delivery of New Bolton Woods. The first element of this is to support and build on the existing clubs and facilities by ensuring they are fully incorporated into the masterplan.

Sports and Leisure are increasingly promoted by Government policy in terms of their importance to health and well-being benefits for the community. CRUVL has addressed the general design work of the masterplan in such a way as to support these ideals. Small areas of land through the area can be used to support a wide range of sports. Landscaped routes and shared surface local roads will encourage walking and cycling by making it safer and more convenient as will the general permeability of the design framework. Similarly play areas close to housing can incorporate sports elements. CRUVL is also engaging with partners such as local free school and community charity One in a Million to support its work in providing sports training and education.

3G Pitch at Gaisby Lane

The provision of a local school within the new Local Centre around Stanley Road has required the masterplan to promote development of one of the three King George V playing field pitches as the school site after much testing with Council partners of possible locations. CRUVL's strategy for addressing this 'loss' is to create a new 3G pitch (i.e. a professional standard surface) on land at Gaisby Lane. Our business plans show this pitch as being available for use for around 90 hours per week, almost every day through the year as the 3G surface can stand that amount of use without deterioration unlike a grass pitch which requires 'recovery time'. CRUVL has designed a comprehensive 'cut and fill' plan to create the required level surface on which to build the 3G facility (see plan). This design work has involved full and proper consultation with the Council and Environment Agency over the design in terms of drainage issues etc. CRUVL proposes to provide the 3G pitch on a 'not-for-profit, break-even' basis focused on maximising community use whilst generating sufficient income to ensure the facility is financially sustainable in the long-term.



7.5 Green Corridors

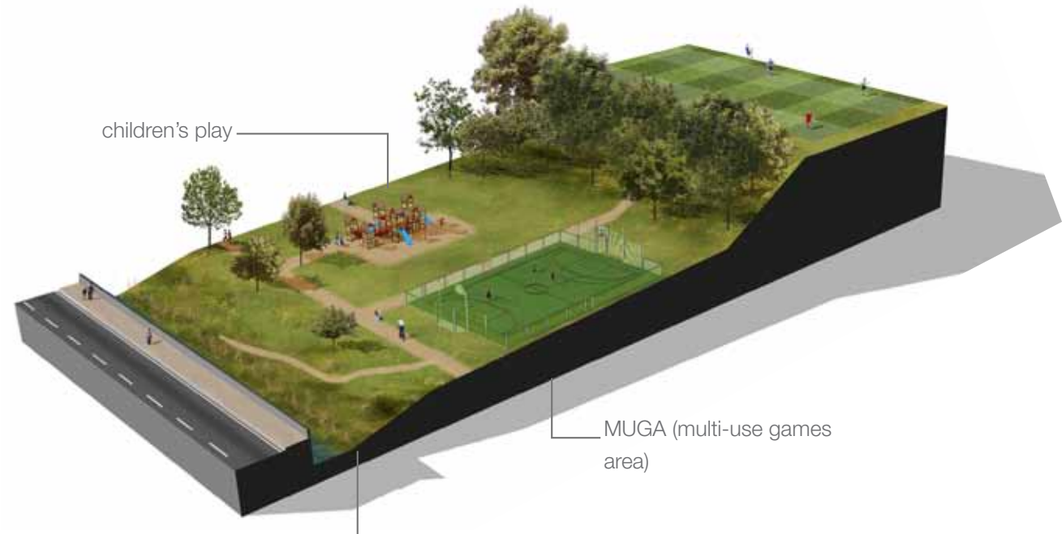
Green informal corridors will be created through the site to create a well connected network of open spaces.

These green informal corridors, mainly along Gaisby Lane and Powell Road, will provide local gathering spaces for recreation and nature conservation.

The existing planting through the village will be enhanced with new planting where necessary creating defined footpaths and cycling routes. New Bolton Woods will have high quality linked spaces that are safe and attractive for people.

Small play facilities integrated into the green corridors will provide opportunities for a variety of uses. Together with the surrounding sports facilities and open spaces along the water, the green corridors play a key role to create a clear hierarchy of connected green spaces.

Location of section shown on map above



Location of section shown on map above

7.6 Doorstep Parks

Doorstep greens or pocket parks are small amenity open spaces that can be created around housing areas, larger landscaped areas and domestic gardens to provide informal pocket greens.

Dispersed around the village, small green areas offer informal local recreation around housing areas.

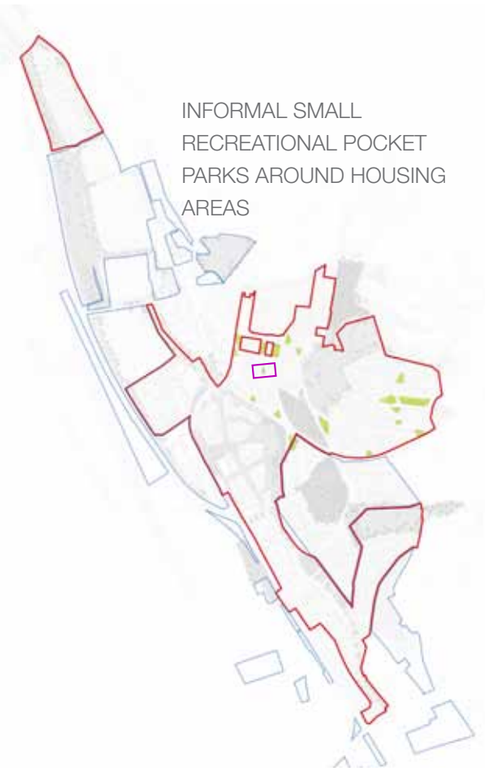
These pocket greens could provide a natural visual landmark comprising coloured and seasonal planting.

The areas provide an important localised green space typology. The spaces contain informal play equipment, picnic and seating areas for supervision, and will be well used by their immediate residents.

The local spaces provide an opportunity for localised gathering, creating a street focus for residents, capable of accommodating street parties.

The spaces form a visual break within the linear blocks of the hillside, and this supports the overall principle of integrating the rural character into the site.

Boundary treatments could comprise new hedges and trees, providing continuity with the green streets and make the residents feel as their front gardens are part of the greens.



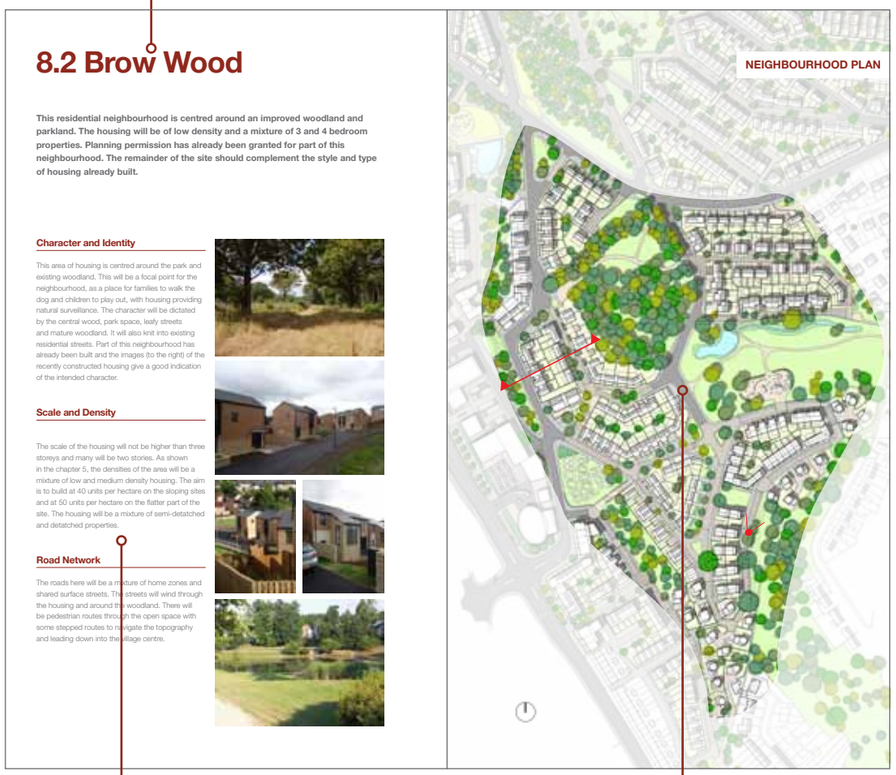
Location of section shown on map above

8. Neighbourhood Design Guide

8.1 This Guide

This guide has been developed to elaborate on the illustrative masterplan and explain the character of each neighbourhood in more detail. This guide is intended to be used by developers, housebuilders and architects who work on the scheme in the future. It explains the design intentions of the illustrative masterplan. Below we explain what is included in each neighbourhood description.

Neighbourhood Name - This is purely for description purposes; over time each area will be named by residents.



Neighbourhood Description - This text describes each neighbourhood area under a series of headings: Character and Identity, Scale and Density, Road Network, Topography, Open Space, Materials and Precedent.

Neighbourhood Plan - This has been drawn at 1:1250, and illustrates where the buildings could be sited, their massing, the types of roads and open spacs. The red line indicates the section line, and the red dot indicates where the visualisation is viewed from.

Precedent Images - These images help to communicate the intended character of the area. They include images of housing and densities, types of open space and streets.

Visualisation - This has been drawn using a 3D model of the proposal. We have then montaged in materials and people to give an idea of the scale and feel of development.

Material Palette - These images are intended to give a flavour of the types of materials intended to create a unique character in each area. There are some materials which run through all areas, to tie the development together.

Section 1:500 - This has been drawn for each area to give an idea of how the development will change the existing topography - shown as a pink dotted line. This is especially pertinent for the hillside neighbourhoods.

8.2 Brow Wood

This residential neighbourhood is centred around improved woodland and parkland. The housing will be low density and a mixture of 3 and 4 bedroom properties. Planning permission has already been granted and construction work begun on part of this neighbourhood. The remainder of the site should complement the style and type of housing already built.

Character and Identity

This area of housing is centred around the park and existing woodland. This will be a focal point for the neighbourhood, as a place for families to walk the dog and children to play out, with housing providing natural surveillance. The character will be dictated by the central wood, park space, leafy streets and mature woodland. Part of this neighbourhood has already been built and the images (to the right) of the recently constructed housing give a good indication of the intended character.

Scale and Density

The scale of the housing will not be higher than three stories in this neighbourhood area and some will be two storeys. As shown in chapter 5, the area will be a mixture of low and medium density housing. The aim is to build at 40 units per hectare on the sloping sites and at 50 units per hectare on the flatter part of the site. The housing will be a mixture of semi-detatched and detatched properties.

Road Network

The main access into the neighbourhood will be Poplars Park Road, and later on will connect down to Canal Road via a new connector street. The roads within the neighbourhood will be a mixture of home zones and shared space streets. The streets will wind through the housing and around the woodland. There will be pedestrian routes through the open space with some stepped routes to navigate the topography and lead people down into the village centre.

8.2 Brow Wood

Topography

There are a mixture of levels in this neighbourhood; it is set up above the level of Canal Road and the platform of Laver Timber yard. The winding street layouts demonstrate the design dealing with the change in level. Towards the mature woodland the site slopes upwards, which is where detatched properties will nestle into the trees and the land, please see the section below.

Open Space

One great feature of this area is the high-quality mature woodland on the steep slope up to Brow Wood Crecent. The housing here is nestled into the trees and care should be taken in detailed design stage to ensure the majority of trees are maintained. Some trees have a Tree Protection Order and this will need to be considered. The woodland will require maintenance and this should be thought of as the development comes forward.

Materials

Similar to Phase 1, traditional Yorkshire materials will be used in this neighbourhood, as well as accents of white render and large windows on the properties. As is shown on the recently constructed houes, a plinth of Yorkshire stone is used and then a yellow brick used for the majority of the facades. Large windows feature prominently and slate tiled roofs also reflect the vernacular style.

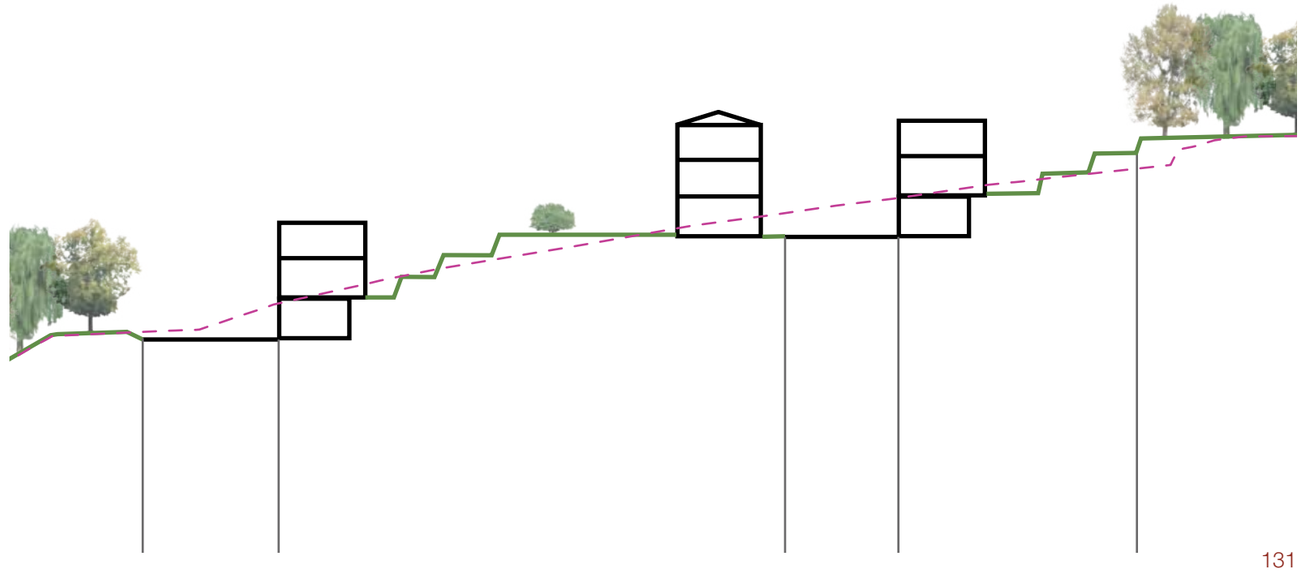
Precedents

Work has already begun on this area and precedent images include the almost complete houses at the north of the site - “phase 1”. Images also include some open space precedents and terraced residential properties, which could help the development reach the desired densities of 50 units per hectare on the flatter parts of the site.

VISUALISATION

MATERIALS

SECTION 1:500



8.3 Poplars Park

This residential neighbourhood is high up on the slope close to Poplar Farm Primary School. It sits next to the newly created neighbourhood park and streets follow the existing topography of the hillside. The housing will be low density due to the gradient of the hillside and will be a mixture of 3 and 4 bedroom properties.

Character and Identity

This area will get its identity from the natural aspect with fantastic views across the valley to Manningham. Small doorstep parks use the 'hair-pin' corners to create smaller green spaces for residents to meet one another. Community orchards or growing spaces will also create a unique character. Some local knowledge of the area came from speaking with residents. Apparently the ruined walls behind the school on Wood Lane were the location of Delf or Delph hill, where Matthew Balme lived. He worked with Richard Oastler to stamp out white slavery with the Ten Hours Act. This local history could be reflected in street or development names.

Scale and Density

The scale of the housing will not be higher than three storeys and will be built into the hillside. As shown in chapter 5, the housing will be medium density. The aim is to build at 50 units per hectare. The housing will be made up of runs of terraced properties, which will nestle into the hillside, with garages and parking on street level and the house constructed into the hillside.

Road Network

The main access into this neighbourhood will be Poplars Park Road, as well as through a newly created local residential street providing links to Bolton Hall. The roads within the neighbourhood will be a mixture of home zones and shared space streets with on-street parking. The streets will wind up the hillside and achieve a maximum of 1 in 9 gradient. There will also be stepped pedestrian routes which link through the houses and run down to Poplars Park Road. Houses will provide natural surveillance over these routes.

8.3 Poplars Park

Topography

The existing topography is a dramatic slope up from Poplars Park Road. The hillside will be re-profiled in order to create roads and development plots for housing. This will include a substantial amount of retaining walls, as shown in the typical section. Some houses will have garages that are built into the hillside, the first floor will then have the garden sloping up away from the house. On the other side of the street, the front door will be on the first floor and then the house will drop down with a terraced garden below. These levels will enable dynamic building forms and interesting internal layouts. We have aimed to cut and fill equal amounts of the hillside to reduce the amount of earth needing to be removed.

Open Space

The housing plots knit into the newly created neighbourhood park. This will be a series of planted areas accessible by pedestrian routes with natural areas of play. The houses will look out over the park and provide natural surveillance. The pedestrian routes through the housing will also incorporate some smaller doorstep parks.

Materials

Vernacular materials will be used which will help knit the development into the existing neighbourhoods, and to match the housing of Manningham on the other side of the valley. In order to create some similarities between the houses we suggest accents of timber panelling in the facades and soffits of houses. The houses will have great views out over the valley and roof terraces will provide outdoor space for residents.

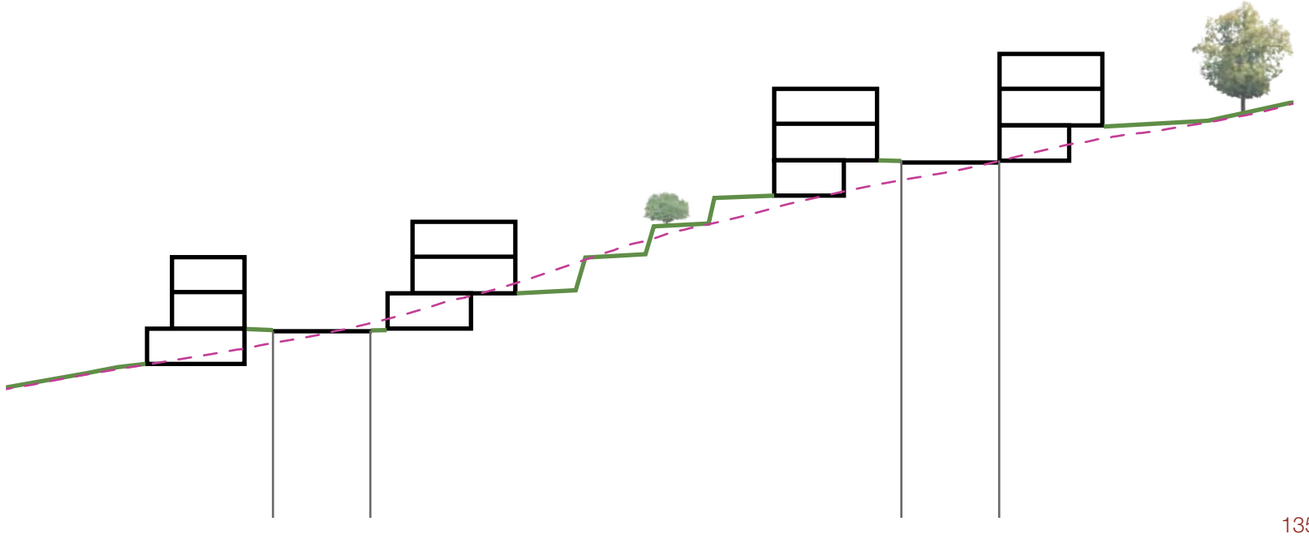
Precedents

We have looked at precedents of terraced streets as well as more traditional hilly streets to understand how other places deal with steep gradients.

VISUALISATION

MATERIALS

SECTION



8.4 Bolton Hall

This residential neighbourhood slopes up above Bolton Woods next to Livingstone Road. It sits in between the neighbourhood park and woodland and existing neighbourhood of Bolton Woods. This area has an existing street network which the new streets knit into. The housing will be medium density and will be a mixture of 3 and 4 bedroom properties.

Character and Identity

This area again is set on a slope and will enjoy views over the valley. This area is in very close proximity to existing properties and should feel different to the previous neighbourhoods described. This will be achieved by the material palette taking precedent from existing properties, smaller play spaces in doorstep parks and roof terraces on houses for people to enjoy the view.

Scale and Density

The scale of the housing will not be higher than three storeys and will be built into the hillside. As shown in chapter 5, the housing densities of the area will be at a low density of 40 units per hectare. The lower density is due to the steep sloping site and road layout. The housing will be made up of semi-detached properties and short runs of terraced properties, which will nestle into the hillside, with garages and parking on the street level.

Road Network

The main access into this neighbourhood will be the existing Livingstone Road. A local residential street will provide a connection across the whole development and make links to the southern parts of the site. Other road types will include a mixture of home zones and shared space streets with on-street parking. The streets will again follow the topography of the hillside and will achieve a maximum of 1 in 9 gradient, with the local residential street achieving 1 in 20. There will be stepped pedestrian routes which will provide connectivity through the housing plots connecting to Poplars Park Road and the village centre facilities below. Houses will provide natural surveillance over these routes.

8.4 Bolton Hall

Topography

The existing topography consists of a steep slope with Livingstone Road on one side and Stanley Road on the other. The hillside will be re-profiled in order to create roads and development plots for housing. This will include an amount of retaining walls, as shown in the typical section. Some houses will have garages built into the hillside, the first floor will then have the garden sloping up away from the house. On the other side of the street, the front door will be on the first floor and then the house will drop down with a terraced garden below. We have aimed to cut and fill equal amounts of the hillside to reduce the amount of earth needing to be removed.

Open Space

The housing knits into the newly created neighbourhood park on the opposite side of the hill to Poplars Park neighbourhood. The park will be a series of planted areas accessible by pedestrain routes with natural areas of play. The houses will look out over the park and provide natural surveillance. The pedestrain routes through the housing will also incorporate some smaller doorstep parks.

Materials

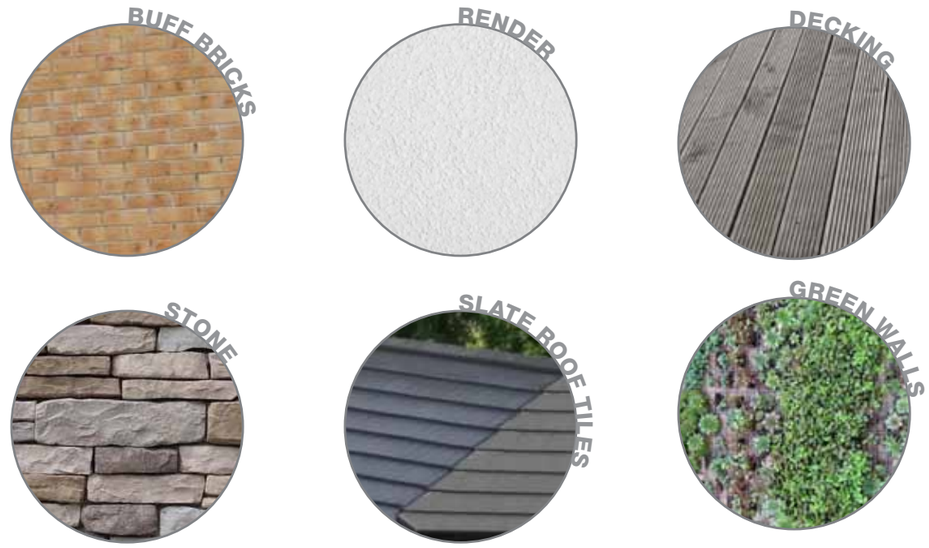
Traditional Yorkshire materials will be used in this neighbourhood which will knit the development into the existing streets of housing in Bolton Woods. The material palette to bind this neighbourhood together includes render, stone and slate roof tiles. The houses will have great views out over the valley and roof terraces will provide outdoor space for residents.

Precedents

Terraced housing provides precedent for this neighbourhood. We also looked at retaining wall structures and how these could provide attractive green features in gardens and the public realm.

VISUALISATION

MATERIALS



SECTION

8.5 Airedale Park

This residential neighbourhood is set at the very northern end of the masterplan. It creates a new neighbourhood of housing in between Canal Road and Poplar Crescent. The housing will be medium density and will be a mixture of 3 and 4 bedroom properties.

Character and Identity

This area is set on much flatter ground than the majority of the masterplan which will enable a different character and feel. The houses will be mainly semi-detatched and detatched and as the roads only serve the new properties, it will be a very quiet neighbourhood. The development will incorporate the recently created cycle path linking to route 66 and will provide a pleasant cycle or pedestrian route into Shipley from the neighbourhood, or towards the village centre on Stanley Road.

Scale and Density

The scale of the housing will not be higher than three storeys and will include some two storey buildings. As shown in chapter 5, the housing densities of the area will be at a medium density of 50 units per hectare. The housing will be made up of short runs of terraced, semi-detatched and detached properties. The properties will have garages and in curtilage parking, with on street parking for visitors.

Road Network

The access into this neighbourhood will be from Poplar Road, which comes off Valley Road. The road layout has been designed so that all houses can front on to the streets. A specific housetype must be designed to turn a corner to avoid streets of homes which turn their back on the public realm. There will also be a shared space street to split the neighbourhood into two plots of housing. The cycle route also goes through this site and should be diverted during works and designed in as a considered part of the detailed road design.

8.5 Airedale Park

Topography

The existing topography is fairly flat, but slopes up slightly to Poplar Crecent's existing residential neighbourhood. This slope will act as a green buffer between existing and new properties and provide a green infrastructure link to the rest of the masterplan. The topography also means that some of this site falls in a floodplain. Remediation work will be done to ensure the proposed ground level of development will be higher than flood levels.

Open Space

The neighbourhood is surrounded by existing open space. Housing should front on to these green spaces to act as natural surveillance.

Materials

Yorkshire stone should be used on this housing, as plinth and possibly on boundary treatments to embed it into the area. Details such as stone walls and timber accents will bring the development together.

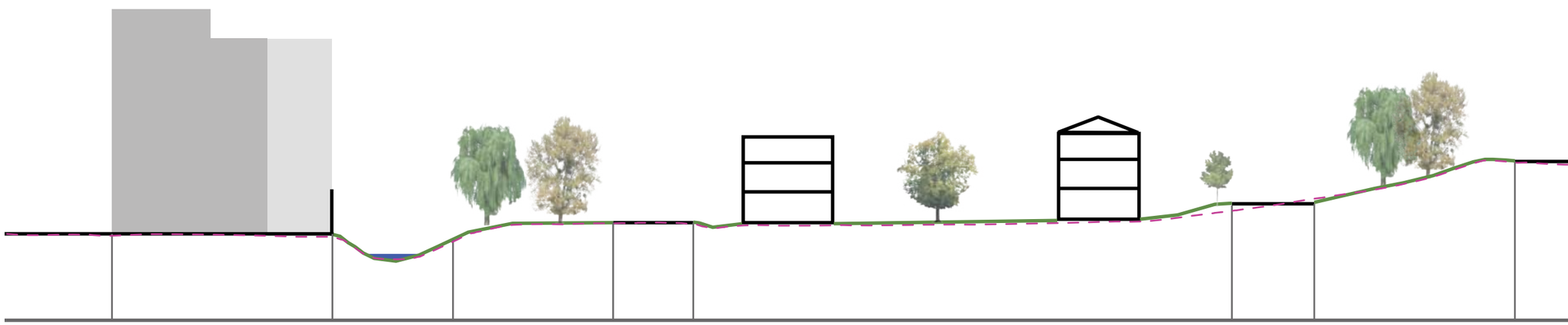
Precedents

We looked at other medium density developments of two and three storeys to inform the design of this area.

VISUALISATION

MATERIALS

SECTION



8.6 Hollin Park

This residential neighbourhood is set at the very south of the masterplan close to Canal Road. This will be more of an urban neighbourhood with a mixture of high density housing and apartments of 1, 2 and 3 bedrooms.

Character and Identity

This neighbourhood is very close to Canal Road and as such the buildings should be taller and denser, to give it a more urban character, especially in its close proximity to the village centre. The area is located below the hillside housing and is close to local transport links such as the railway and bus networks. This should appeal to future residents, by implementing attractive pedestrain routes and well-designed public realm.

Scale and Density

The scale of the housing will not be higher than five storeys, with some buildings at four storeys. The higher elements should be focused on the corners and building fronting Canal Road. There will also be scope for some three and four storey townhouses and terraced properties. As shown in chapter 5, the housing densities of the area will be at a high density of 70 units per hectare for housing and 120 per hectare for apartments. The residential buildings will be made up of terraced streets of town houses and courtyard apartment blocks. The apartments should be designed as dual aspect.

Road Network

The main access to this area will be a newly created access point from Canal Road. The road layout within the neighbourhood has been designed to follow the topography and winds around the existing retaining wall. The main street will be shared space and from that a series of home zones takes residents to their front doors. Parking for apartments should be provided in a combination of undercroft areas and courtyards. Parking for terraced housing will be on-street and potentially in-curtilage in garages within the building footprint.

NEIGHBOURHOOD PLAN

8.6 Hollin Park

Topography

The existing topography is a fairly flat, but then slopes sharply up to the Brow Wood residential neighbourhood. This slope will act as a green buffer between the two neighbourhoods and provide green infrastructure. This is shown on the proposed typical section showing apartment blocks with a shared space street and the green slope up to Brow Wood.

Open Space

The road follows the existing retaining wall structure and the intention is to use this difference in height to create dynamic planted areas which will also create valuable green infrastucture. The newly created local residential street will provide a route up to the woodland and parkland.

Materials

The buildings should take inspiration from the existing railway houses adjacent to this neighbourhood on Midland Terrace. For this reason we suggest red bricks, timber cladding and coloured render. The apartments should also provide some outdoor space such as balconies, and these should be south facing where possible.

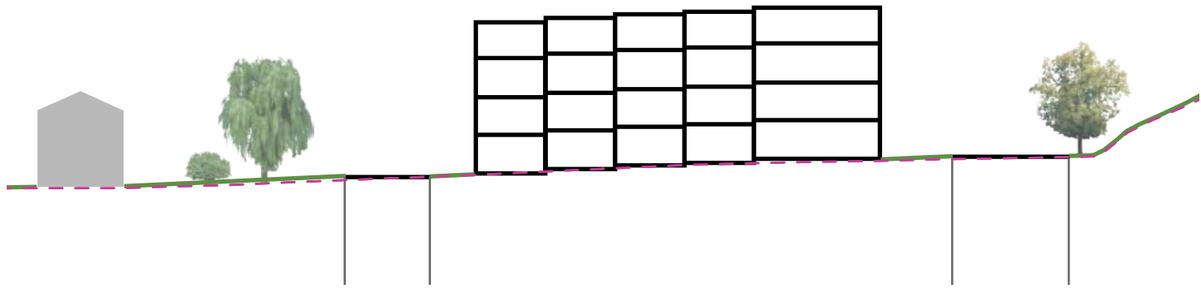
Precedents

For this area we looked at more urban examples of housing and terraces to increase the density as well as shared space streets that integrate parking and planting.

VISUALISATION

MATERIALS

SECTION



8.7 Stanley Road

This mixed-use neighbourhood forms the focus for all the new neighbourhoods. It will be a mixture of commercial and retail spaces, along with high density housing and apartments. It will provide the area with new facilities such as a health centre, a new primary school and nursery, supermarket, shops and a village pub, all set in attractive public realm.

Character and Identity

This neighbourhood's focus will be on two public squares. The first being the public realm which will be fronted by cafes and shops. The basin space will be overlooked by a pub and will enjoy a dramatic slope up to the housing on the hillside. This neighbourhood will be a lively place to be with a mixture of uses.

Scale and Density

The scale of the housing will not be higher than five storeys. The taller elements should be focused on the corners and building fronting Stanley Road and Canal Road. There will also be scope for some three and four storey townhouses and terraced properties in the residential plots. As shown in chapter 5, the housing densities of the area will be at a high density of 70 units per hectare for housing and 120 per hectare for apartments. The housing will be made up of terraced streets and courtyard apartment blocks. The apartments should be dual aspect.

Road Network

The area will be accessed via the existing Stanley Road. The road layout has been designed with Stanley Road as a new high street - a Connector Street. This will be designed as a shared space to slow traffic down and create a pleasant pedestrian-friendly place. This surface is extended to the new primary school. A local residential street will then provide a secondary route parallel to Stanley Road. Connecting these streets will be a mixture of pedestrian links through the blocks and shared space streets. Pedestrian routes run from this area to connect to the residential neighbourhoods on the hillside and in the valley towards Shipley.

8.7 Stanley Road

Topography

The existing topography consists of two fairly flat sites, with the site sloping up Stanley Road where the residential plots are proposed. There may be opportunities for undercroft parking to work with the gradient here and maintain active street frontage. An existing retaining structure runs throughout this site and will act as a green buffer between the local centre and the hillside neighbourhoods as well as providing green infrastructure. As can be seen in the section, the site also slopes up from Stanley Road and it may be necessary to raise development plots up slightly above the street level.

Open Space

The neighbourhood will be defined by the pleasant public squares, one of which will include a large water feature. These spaces should be designed to be used for markets and community activities.

Materials

A variety of materials should be used in this area to create a dynamic and mixed place. Vernacular materials should be used such as Yorkshire stone and buff bricks. We also suggest coloured cladding panels and render as well as glazing systems on some of the public buildings, such as the school and community centre.

Precedents

We looked at various new mixed neighbourhoods for inspiration. We also looked at buildings that use a mixture of materials and forms.

VISUALISATION

MATERIALS

SECTION

9. Conclusion

9.1 Conclusion

In conclusion, this statement has been written to support the planning application for New Bolton Woods: a sustainable community with a choice of housing, community facilities, shops and sports facilities.

To achieve the original nine point vision the Design and Access Statement describes a masterplan which provides a framework for development. This illustrative plan gives an idea of how the area could look in twenty years. The hope is that it will be developed with a number of different partners in order to bring distinct character to each different neighbourhood of the masterplan. Rather than setting down a rigid plan, the masterplan creates a flexible framework set out in the parameters plan plus a design guide to direct future development.

This application will enable the delivery of a choice of high quality housing, with local facilities, a strong identity and unique character. A new food-store will kick start the regeneration of the area and help form a new local centre. By embedding sustainability into the masterplan from the very beginning, and creating a strategy which will benchmark schemes against best practice in the UK, the masterplan aims to achieve excellent sustainability standards which will only improve as more development is delivered.

Landscape and open space has always been a crucial part of the design, due to the site's context and existing features. The input from landscape architects Planit will help integrate a realistic landscape strategy which will increase the availability and quality of open space for the public. Civic Engineers have developed a logical road hierarchy which will enable vehicular movement but will also engender a strong sense of community by integrating pedestrian and cyclist movement into the streetscene, with opportunities to use Sustainable Urban Drainage Systems to deal with drainage issues.

The neighbourhood design guide will assist future partners in understanding BMDC and URBO's joint vision, under their JV partnership of CRUVL. This vision and masterplan was created with input from the design team, local community members, council officers and existing residents but the discussions will continue as the development moves forward and will involve many more stakeholders in the future. CRUVL believes that this application and supporting document signals the beginning of a process of regeneration in an ambitious but practical manner.

10. Appendices

10.1 Open Space Analysis

Within the regeneration plans and the delivery programme for New Bolton Woods, there is an opportunity for green space to be incorporated as an important component of the masterplan. Open space has a key role to play as part of a wider delivery programme in removing environmental liabilities and creating a high quality context within which market confidence can be established.

This section supports the strategy on the provision and role of green space identified within the masterplan.

The intention is to create a clear hierarchy of high quality linked spaces, which are safe and stimulating.

Figure 1 and 2 indicate the Council's Open Space Study boundaries. The site is located between the study areas of Bradford West, Bradford North and partially within the Shipley Ward. Further, on the more detailed ward boundary plan (Figure 2), the site falls between Manningham, Bolton and Undercliffe and Windhill and Rose.

On this basis, defining a study boundary and a catchment area to calculate supply and demand presents a challenge. The proposed solution has been to draw a study area within the 800 m (10 minute) walking distance of the site boundary to capture those open spaces which are likely to be used by residents within the site boundary; similarly this will encompass the residential population that would be likely to use the open spaces within the site boundary (Figure 3).

The masterplan has identified proposed development on areas of existing open space in accordance with the emerging planning framework. Notwithstanding this, there is currently a gap in terms of a policy justification for the development on open space, both at the local government planning framework level, as well as in terms of information required to support the submission. This report will provide the information necessary to fill that gap.

Our approach has been to use the existing/emerging policy framework:

> Policy OS5 of the UDP

> Bradford's Open Space, Sport and Recreation Study (Evidence Base to support the LDF) (2006).

> Planning and Design for Outdoor Sports and Play (2008) - This document is published by Fields in Trust, formerly the National Playing Fields Association. It supersedes all previous editions of 'The Six Acre Standard', the last of which was published in 2001.

Summary

This chapter has been used as a policy framework from which to base our understanding of supply and demand of open space typologies within New Bolton Woods.

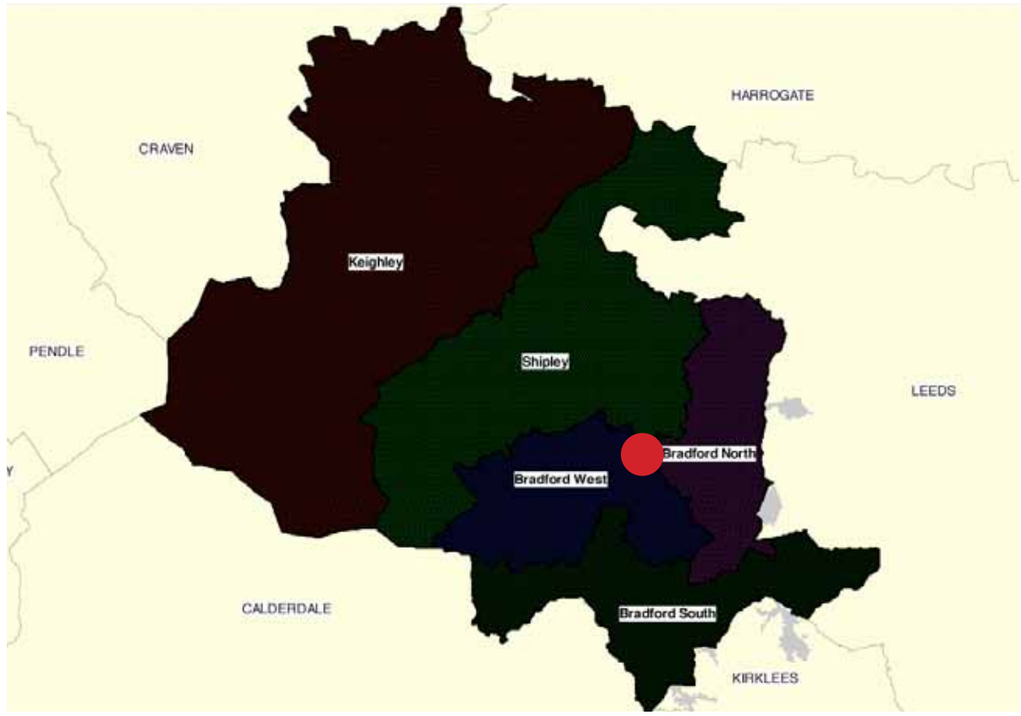


Figure 1. Open space study boundaries

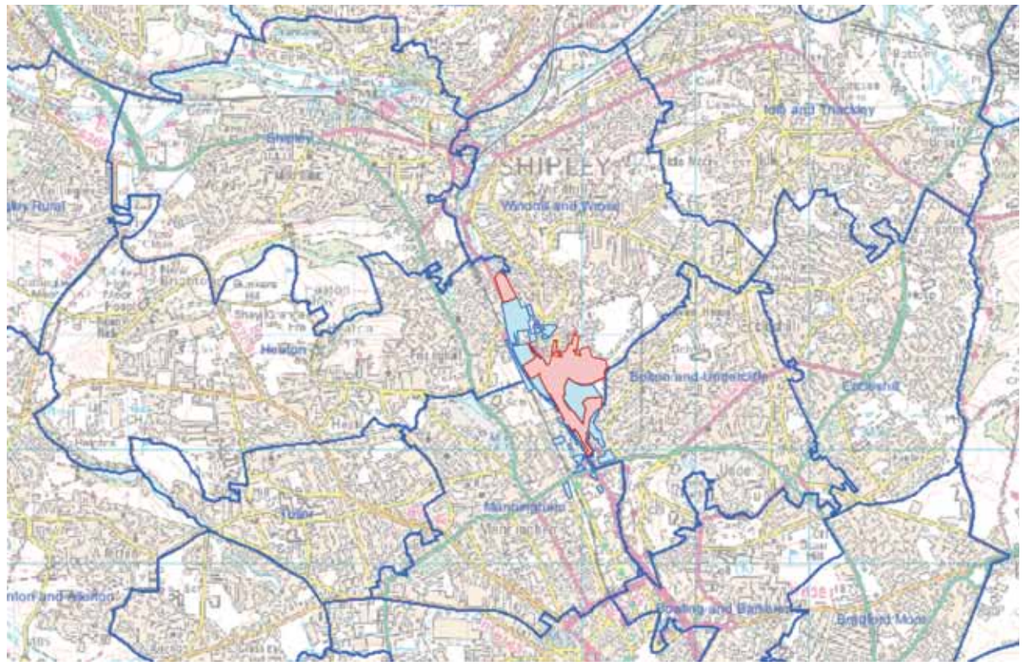


Figure 2. Ward boundary plan

10.1 Open Space Analysis

Methodology

The methodological assumptions underpinning this study in terms of open space need and provision need to be placed within the context of changes in central government and associated funding, which have dramatically reduced the Council's ability to meet its current maintenance liability, notwithstanding any potential increases in revenue liabilities. Whilst our methodology will follow the framework for walking distances to the various space typologies, the actual projected quantum of green space demand will not be rigorously adhered to. Thus, locations will be identified for opportunities for play and recreation, which plugs the gaps in the existing network, as opposed to defining the precise physical requirements of these interventions.

A key requirement will be to ensure that there are mechanisms in place to deliver long term effective management and maintenance of the interventions identified.

Quantum of Green space

In terms of calculating the supply and demand, given that the population statistics apply to the ward boundaries only, our approach would be to take the proposed population figures resulting from the development schedule in order to assess the proposals against policy OS5.

We are able to make assumptions about the supply of open space as a result of the proposed masterplan. This will be supported by the general conclusions for each broad study boundary proposed within the Council's Open Space Study.

Typologies/Walking Catchments

A key element of the baseline analysis involved the definition of the existing typology of open spaces within NBW (identified within Figure 4 - Green Open Space Typologies diagram). Such a process is necessary in order to identify the current provision of open space types, and compare these against open space standards, as defined within the open space Study.

Figure 8 identifies the green open spaces within the study area, and classifies them according to type. The classification of spaces are based on the typologies identified within the Open Space Study.

The Study defines a hierarchy of parks, based on size, and primary role and function of the space.

Additional typologies have been defined following study of the area and the surrounding context. These include green space incorporating brownfield/ derelict land) and the identification of natural/semi-natural areas that are not publically accessible.

The typologies will be used to identify the appropriate benchmarked walking distances from each location of open space; this will then be used to identify gaps in the current provision, and thus opportunities within the masterplan to fill the gap.

Green Space Audit

In order to gain an accurate picture of the quality of the existing green space within NBW, as well as satisfying the requirements of the funding allocation, a detailed audit was carried out of all the green spaces identified.

The detailed audit has informed the strategy formulation of the Masterplan, and, when placed alongside an urban design assessment of these spaces, it would be possible to identify the following:

> spaces in appropriate locations but requiring attention

> spaces in inappropriate locations but better suited to other land use.

> locations where the supply of green space is deficient and the opportunity exists within the masterplan for supply to be enhanced.

The methodology for the audit was to provide both a qualitative and quantitative assessment of green space, with the specific aim of identifying quality. Consequently a set of criteria suggested within the CABE guidance, Green space strategies a good practice guide' was used, in order to collect detailed comments on each space.

Summary - Informing the Masterplan

The aforementioned work has been used to test the emerging masterplan in relation to the quantum, distribution and hierarchy of open space - ensuring that there is the necessary open space framework to satisfy planning policy.

From this work, we have developed overall principles of open space design and character, which have informed the masterplan.

In summary, the main scope and purpose of this analysis was to:

> Understand the quality and function of the green space within the study area achieved through the provision of an audit/ analysis of all green space and its relationship to built form and each other; and

> Understand the demand on green space based on existing policy benchmarking.

Together these elements formed the baseline analysis. This was then used to:

> Test the emerging masterplan in relation to the quantum, distribution and hierarchy of open space - ensuring that there was the necessary open space framework to satisfy planning policy;

> To develop overall principles of open space design and character which informed the design development of the planning submission going forward.

Figure 3. Site within a 800m walking distance study area

10.1 Open Space Analysis

Open space typologies / gap analysis

A key element of the baseline analysis involved the definition of the existing typology of open spaces within the study area (identified within Green Open Space Typologies diagram, Figure 4). Such a process is necessary in order to identify the current provision of open space types, and compare these against open space standards, as defined within Planning and Design for Outdoor Sports and Play 2008.

The diagram opposite identifies the green open spaces within the study area, and classifies them according to type. The classification of spaces was based on the typologies identified within the Council's Open Space Study. The Study defines a hierarchy of parks, based on size, and primary role and function of the space.

Additional typologies have been defined following study of the area and the surrounding context. These include green space incorporating brownfield/ derelict land, and the identification of natural/semi-natural areas, that are currently inaccessible. The hierarchy is identified within the diagram and the photographs below.

We also felt that it was important to acknowledge those spaces which exist around the edge of the study area boundary, within 10 minutes walking distance of the site boundary, in order gain a more accurate picture of green space provision. The walking catchment standards identified within the Bradford Open Space Study and Planning and Design for Outdoor Sports and Play 2008 have been applied within the following pages.

The open space standards as identified within the Council's Open Space Study and within Planning and Design for Outdoor Sports and Play (2008) were applied to the study area in order to identify gaps, or over provision, within the current typologies of open space. However, the study should be considered within the context of the prevailing economic climate rather than a quantity driven requirements.

The gap study does not include the category for Linear Park, given that there is no overall catchment standard provided by the Open Space Study. Notwithstanding this, we have identified a linear swathe of open space along King's Road, which serves the study area to the east - all be it along a road corridor. There is an obvious gap in provision to the west of the study area.

The key findings are as follows:

> There is complete coverage of District parks across the study area

> There is a shortage of local park provision within the south of the study area.

> There is complete coverage of semi natural space of settlement significance.

> There is a large area to the south and north not covered by LEAP play provision. Further, the study area is devoid of any smaller LAP spaces altogether.

> There is a large amenity space, of Settlement Significance, within the centre of the study area, which provides a good level of coverage, but is not easily accessible. Further, there are also a number of smaller areas of amenity open space which have little more than a visual as opposed to a functional value.

> There is a large provision of allotment space, of Settlement Significance, to the north and south of the study area, which provides a good level of coverage, but has been found to be contaminated.

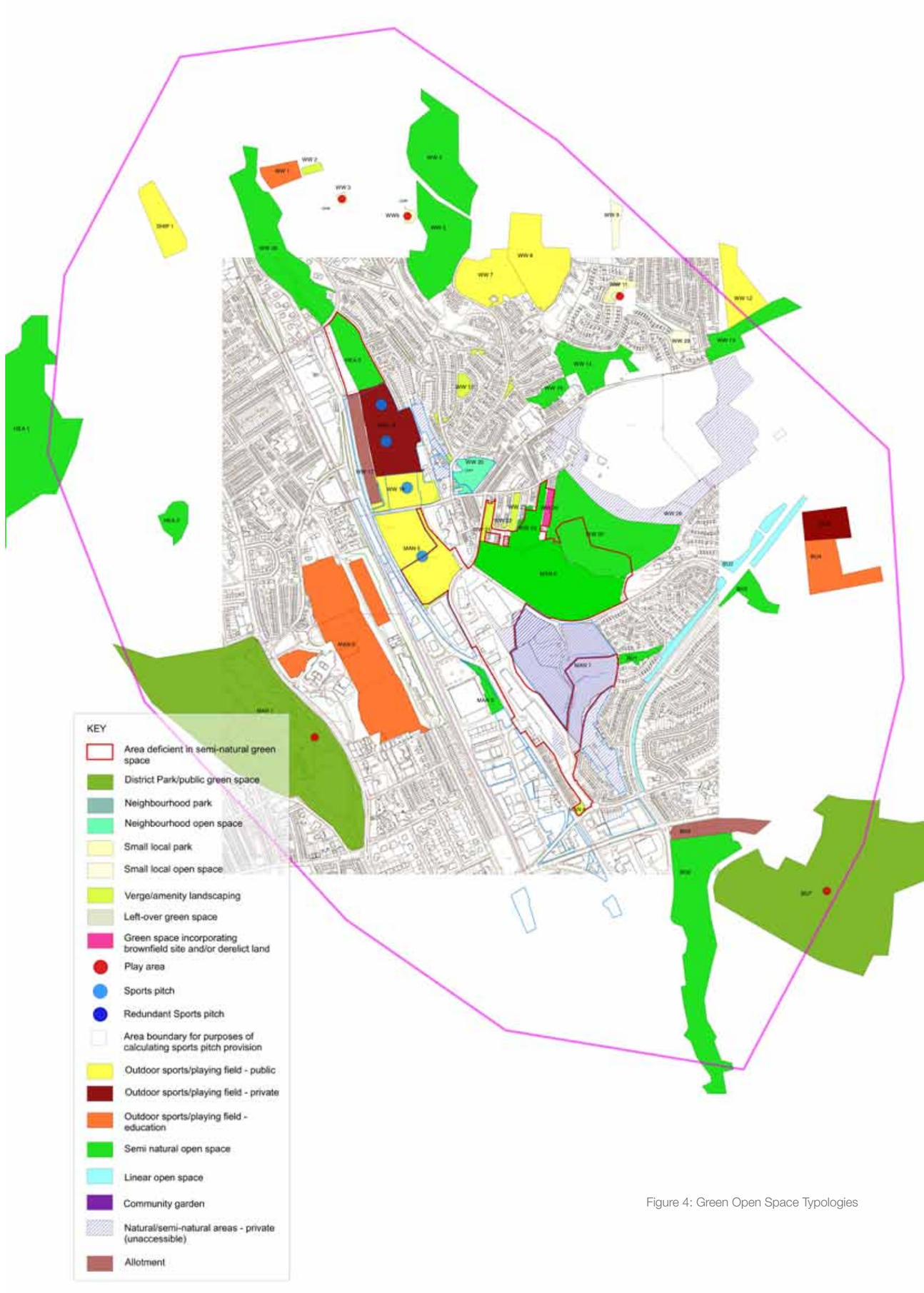


Figure 4: Green Open Space Typologies

District Park

District Parks which are 2-20 ha, and comprise a landscape setting with a variety of natural features and a range of facilities including outdoor sports facilities and playing fields, children's play for different age groups and informal recreation pursuits. Some car parking. These operate as a local park for those within/400m.

Local Park

Local Parks, which are 2 - 20 ha, provide an important children's play function, sitting-out areas, nature conservation, landscaped environment, and playing fields if the parks are large enough. Indicative catchment area (refined to take into account barriers of access) 400m.

Verge/Amenity landscaping

Amenity Green Space Includes informal recreational spaces and housing green spaces. This category would include green spaces in and around housing areas, large landscaped areas, and domestic gardens.

Linear open space

Linear Open Spaces - River and canal banks, canal towpaths, road and rail corridors, cycling routes, paths, disused railways and other routes which provide opportunities for informal recreation, including nature conservation. Often characterised by features or attractive areas which are not fully accessible to the public but contribute to the enjoyment of the space.

Outdoor sports/playing field

Outdoor Sports Facilities/ Playing Fields - Those sites which the primary role is for formal recreation. Sites include tennis courts, bowling greens, sports pitches, golf courses, athletics tracks, school playing fields, other institutional playing fields and outdoor sports areas. Categorise by ownership i.e. public/private/ education.

Natural/semi-natural areas

Natural or Semi-Natural Urban Greenspaces - Woodland (coniferous, deciduous, mixed) and scrub, grassland (e.g. downland, meadow), heath or moor, wetlands (e.g. marsh, fen), open and running water, wastelands (including disturbed ground), bare rock habitats (e.g. cliffs, quarries, pits).

Play

Small Local Parks - Less than 1 ha - Gardens, sitting out areas, children's playgrounds or other areas of a specialist nature such as nature conservation. Indicative catchment area (refined to take into account barriers of access) 280m.

Allotments

Allotments / Community Gardens / Urban Farms - Open spaces where the primary use is allotment gardening or community farming.

10.1 Open Space Analysis

Green Space Audit Results

A green open space audit has been carried out in order to gain an accurate picture of the quality of the existing green space within the site and surrounding area.

The methodology for the audit was to provide both a qualitative and quantitative assessment of green space. Each space was rated on the following criteria and a summary of the results are provided:

> **use of space** - Good range of space types - thirteen different green space typologies identified. Dominance of accessible semi-natural open space, with a total of 15 semi-natural areas of open space identified.

> **maintenance quality** - the vast majority of spaces have been assessed as being well maintained.

> **connectivity** - The majority of spaces have been assessed as 'fair' in terms of their access and connectivity, indicating some room for improvement. In particular, many spaces suffer from a lack of high quality, well placed and inviting entrance spaces. Connectivity between green spaces also has the potential to be enhanced. Opportunities to connect to the Dales Way Link.

> **enclosure** - the majority of spaces well enclosed due to good relationship with surrounding buildings. However, a significant number score 'fair' or 'poor' in terms of enclosure, showing that there is some room for improvement.

> **overlooking/active frontage** - spaces vary significantly in terms of their overlooking/active frontage. However, the majority of spaces have been assessed as 'poor', indicating that there is significant room for improvement. Smaller green spaces and verges tend to benefit from direct overlooking.

> **hard surfaces** - the quality of hard surfacing varies significantly, however the majority of spaces were assessed as being 'poor'. This is largely due to a lack of high quality footpaths and hard surfaces within green spaces, which would promote usages of spaces, improve connectivity, enhance legibility and facilitate access.

> **soft planting** - the majority of spaces have been assessed as 'poor' in terms of their soft landscaping. Although the area benefits from areas of high quality woodland and tree planting, the majority of spaces would benefit from increased diversity of planting to create visual interest, create habitat potential and encourage biodiversity.

> **street furniture** - street furniture tends to be lacking, of insufficient quality, vandalised or poor quality where present.

> **lighting** - poor overall. Lighting tends to be lacking or of insufficient quantity, leading to issues of safety and security. Tends to be poor quality and uniform where present.

> **legibility** - legibility is highly varied across the site. A high number of spaces were assessed as 'good' and a similar number were assessed as 'poor'. The majority of smaller green spaces tend to score highly in terms of legibility whereas larger spaces tend to score lower.

> **visual quality** - the vast majority of spaces were assessed as 'fair' in terms of their visual quality. Areas of woodland and tree cover add significantly to visual quality within green spaces, along with high quality stone wall boundaries. Spaces which have been assessed as 'low' in terms of their visual quality tend to be those which are lacking in features to define character and function.

> **boundaries** - the majority of spaces where assessed as 'poor' in terms of their boundaries. This is largely due to either a lack of clearly defined boundaries, or low quality/inconsistent boundaries. However, a small number of spaces have notably high quality stone wall boundaries, which form key features of local character.

A set of criteria suggested within the CABE guidance, 'Green Space Strategies a Good Practice Guide' published in 2004 was used in order to collect any additional detailed comments on each space. The following aspects were considered:

> **Access** - Entrance well located? Welcoming entrance? Infrastructure meet the DDA? Effective signage?

> **Landscape Quality** - Stimulating Environment? Varying Spatial Scales? Attractive Spaces? Space Understandable - Clear Focus and Orientating Features?

> **Facilities** - Well Designed & Located Furniture? Appropriate Facilities? Buildings Well Designed & Located? Special Features or Local Distinctiveness?

> **Maintenance** - Clean Space? Well maintained Fabric, Furniture & Buildings? Planting maintained? Grass Maintained? Managed Wildlife Habitat Areas Maintained?

> **Management** - Appropriate Level of Management? Staff Based on Site? Information to Contact Management Services? Information on Events and Activities? Evidence of Community Involvement?

> **Security & Safety** - What Sense of Personal Security is there? Levels of Vandalism? Evidence of Anti-Social Behaviour? Extent of Self Surveillance from Surroundings or Pedestrians?

> **Natural Heritage** - Extent of Natural Habitat Management? Nature Conservation Objectives Communicated? Evidence of Sustainable Management Practices?

Each space was given one of following five ratings for each category; good, good/fair, fair, fair/poor and poor. These ratings were then given a numerical value, to generate a quantifiable score for each space. A 'good' rating achieved a score of 5, whilst the lowest rating of 'poor' achieved a score of 1. The scoring system was used to find an average score for each space.

The diagrams on the following two pages provide an indication of the overall result, by providing an average score of each space. The scores for each green space were determined subjectively, using a combination of professional experience and site knowledge. Consideration was given to the function of the space i.e its typology, and the public accessibility of the space. Both of these factors had a considerable influence on scoring. For example, a space classified as inaccessible (private) semi-natural open space was not assessed negatively for the absence of street furniture, since this is entirely appropriate considering the private nature of the space. In contrast, a green space classified as a district park would be assessed as 'poor' if there was found to be insufficient, good quality street furniture. This is because street furniture is considered to be an essential component of a successful district park. For this reason, the results separate the results of those spaces which are publicly accessible, from areas of semi-natural landscape which are inaccessible to the public.

The average scores of the publicly accessible spaces and the inaccessible (private) spaces are illustrated in the diagrams opposite (Figures 5 and 6).

Figure 5: Green space audit - average rating for all publicly accessible spaces

Figure 6: Green space audit - average rating for private (inaccessible) semi-natural spaces

10.1 Open Space Analysis

Summary

In summary, the results show that:

> The District Parks within the catchment area are Lister Park and Peel Park. Both were assessed as good overall, which reflects their exceptional quality. Both Parks form major positive elements within the green open space network within Bradford.

> The quality of outdoor sports/playing fields for educational use was also high quality and achieved an average assessment of good overall.

> The linear green open space along King's Road, the small local open spaces, and the private outdoor sports/playing fields were all assessed as good/fair overall, indicating that they have significant good qualities of value.

> The majority of green spaces within the catchment area are publicly accessible, however their are substantial areas of private semi-natural open space. The inaccessible green spaces have predominantly been assessed as fair on average, indicating that they have significant positive qualities with potential to be enhanced. These spaces would therefore significantly benefit the green public open space network if opened up for public use. The neighbourhood open space, small local park and public outdoor sports/playing field were also assessed as fair on average, indicating some room for improvement. These spaces failed to score higher overall due to a frequent lack of lighting and a lack of overlooking/active frontage. Both of these factors are likely to impact negatively on the space in terms of creating a sense of personal safety and security.

> The majority of verge/amenity landscaping spaces, semi-natural open space and allotment spaces were assessed as fair/poor on average, indicating that there is significant room for improvement. The majority of verge/amenity landscaping generally scored poorly due to a lack of features or function, with the majority consisting of mown grass. However, most scored positively in terms of overlooking and active frontage. The two allotment areas have been assessed significantly differently, which reflects the apparent usage of the allotment areas, with the lesser well used allotment site scoring significantly lower in the majority of categories. Semi-natural green spaces form a significant part of the green open space provision in the areas, both in terms of number and area. They were assessed as being diverse in terms of their positive and negative aspects, however, a large number would benefit from improvements to street furniture, lighting, legibility and boundaries. The majority scored well in terms of their soft landscaping/planting and visual quality.

> The areas of green space incorporating brownfield and/or derelict land was assesse as poor overall. as poor overall.

Implications for the Masterplan

The audit indicated that areas around the hillside, have the capacity to accomodate built development without detriment to the overall provision of open space both in terms of quality and overall quantum.

Moreover, there are also open spaces which if improved would make a significant contribution to the creation of a high quality green space network.

SPACE TYPOLOGY	NUMBER OF SPACES	AVERAGE RATING
District Park/public green space	2	GOOD
Neighbourhood open space	1	FAIR
Small local park	1	FAIR
Small local open space	2 1 1	GOOD FAIR FAIR/POOR
		GOOD/FAIR
Verge/amenity landscaping	2 3 1	FAIR FAIR/POOR POOR
		FAIR/POOR
Green space incorporating brownfield site and/or derelict land	1	POOR
Outdoor sports/playing field - public	4 2	FAIR GOOD/FAIR
		FAIR
Outdoor sports/playing field - private	1 1	GOOD FAIR
		GOOD/FAIR
Outdoor sports/playing field - education	3	GOOD
Semi natural open space	1 4 9 2	GOOD/FAIR FAIR FAIR/POOR POOR
		FAIR/POOR
Linear open space	1	GOOD/FAIR
Natural/semi-natural areas - inaccessible	2 2 1	GOOD/FAIR FAIR POOR
		FAIR
Allotment	1 1	FAIR POOR
		FAIR/POOR

Figure 6: Qualitative and quantitative assessment summary

10.1 Open Space Analysis

Proposed Open Space and Play

The proposed disposition of open space typology/ hierarchy across the masterplan area is identified within Figure 9 as part of an overall open space framework. A fundamental principle is to create a clear hierarchy of open space. Key moves include:

1. Creation of a Neighbourhood Park created by combining the Hill Top open space (1) with the countryside open space (2) providing a park of around 6.5 ha. Within the Hollings Park section (1), the approach would be to link together existing private semi-natural open spaces as a new, publicly accessible play trail, which combined together forms a Local Landscaped Area for Play. The park will also provide a strong ecology theme - including a nature trail. References to the historic use as a farm will be used and the park will create a high quality setting, and inform the character of the adjacent housing.
2. The park would incorporate the Hill Top location (2), thus including semi natural open space/ ecology areas, trim trails and a Neighbourhood Equipped Area of Play. Whilst we note that there is no specific category for a neighbourhood park (technically a 6.5 ha park would be a small District Park). The park would serve the neighbourhood of New Bolton Woods, as opposed to the wider district, and therefore, should be considered as such when defining its typology.
3. New Civic spaces within the neighbourhood centre - including the canal basin - linked to phase 1 - a semi natural sloping corridor of space
4. In addition, semi natural green space corridors would be created that link together the key open spaces.
5. As part of a wider strategy of green space improvement, a linear park could be create adjacent to Bradford Beck which incorporates a wider waterside walk and cycling route. The space could comprise a play facility of Local Equipped Area for Play.

The quantum of open space proposed under the masterplan breaks down into the following:

> Neighbourhood park: 3,02 ha.

> Linear park: 0,46 ha.

> Woodland: 0,65 ha.

> Linear geen open space (semi-natural): 3,06 ha.

> Verge/amenity landscape (doorstep greens): 0,51 ha.

The areas showed in Figure 8 as areas of enhanced ecological value will be planted to mitigate against the loss of the Bradford Wildlife area. This area is within the application blue line, and has been identified as unsuitable for development.

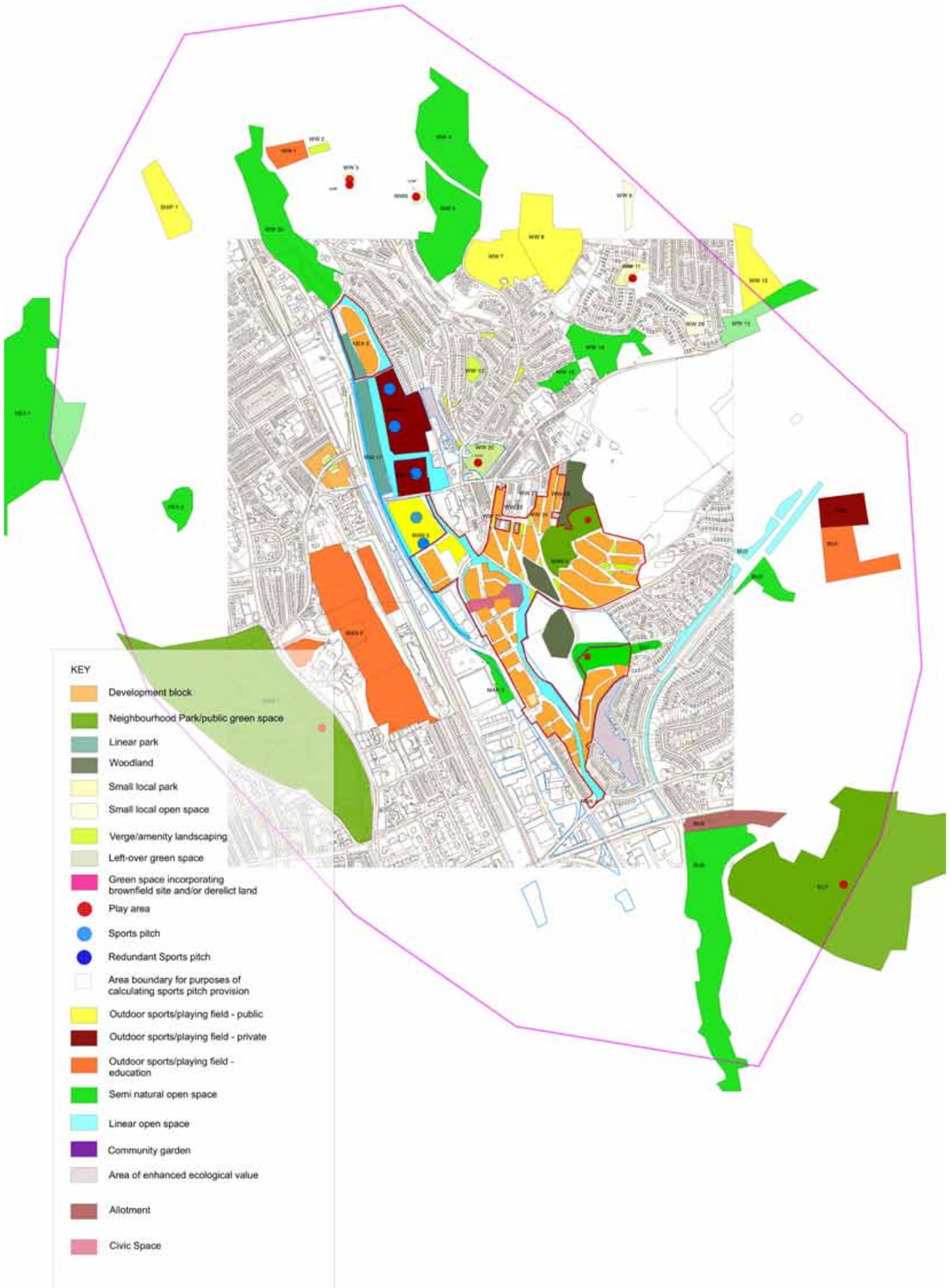
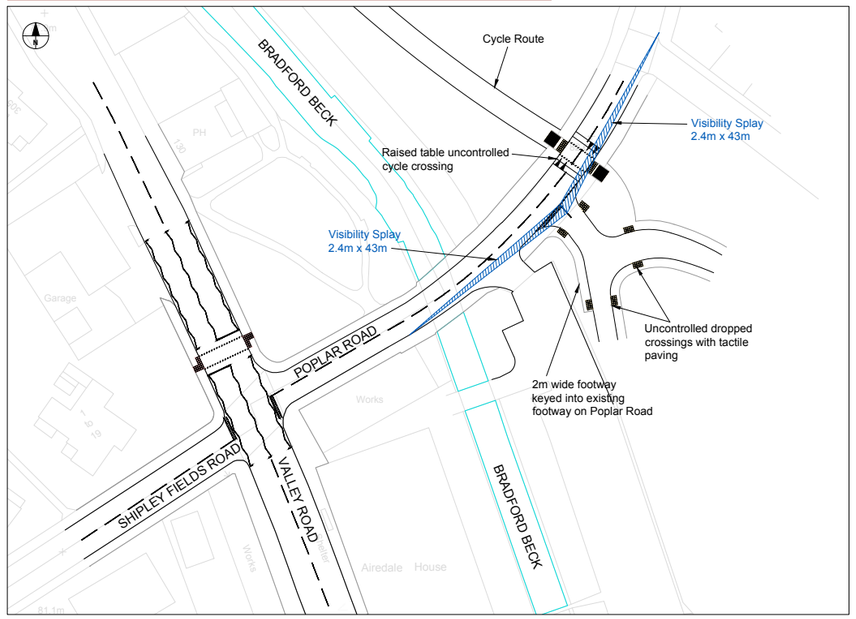


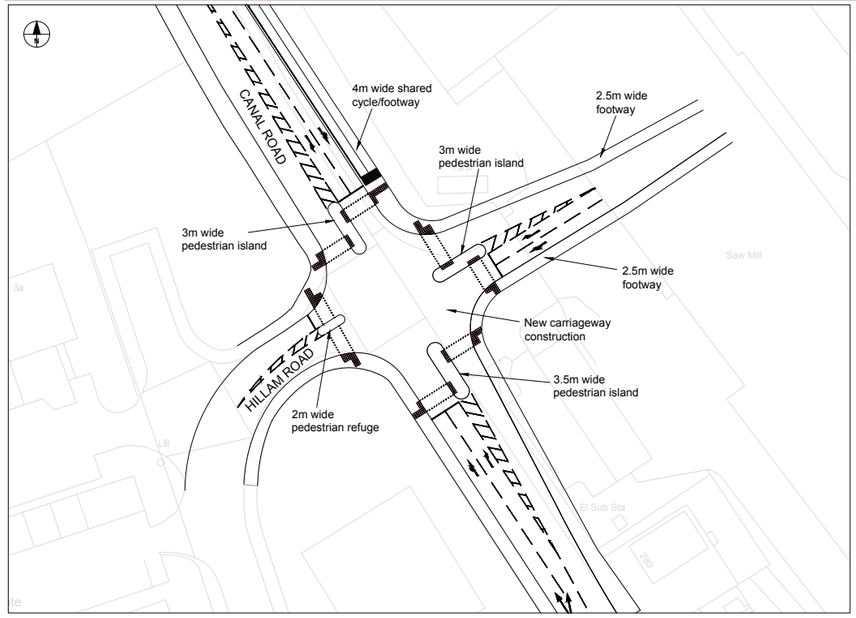
Figure 8: Open space framework

10.2 Canal Road Detailed Junctions

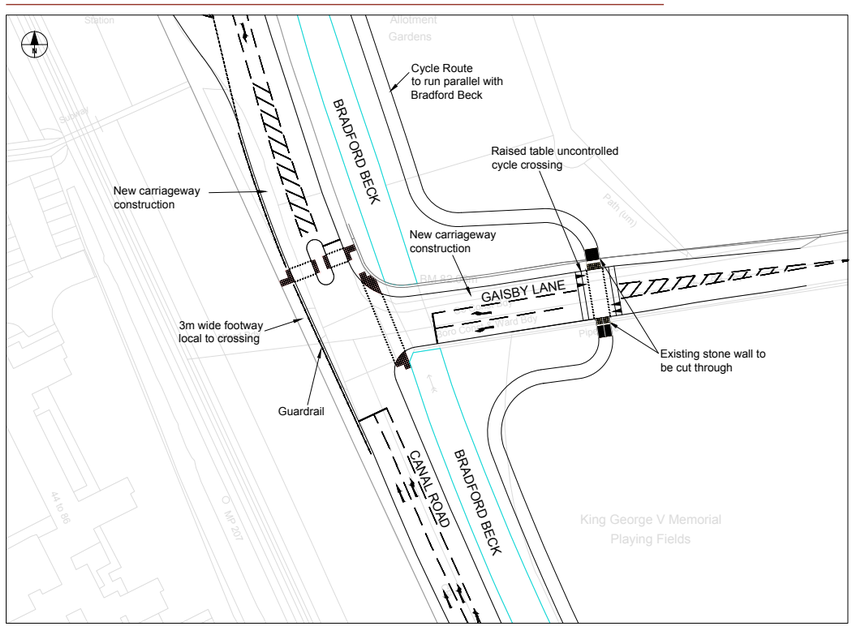
New Site Access Junction off Poplar Road



New signalised junction of Canal Road / Hillam Road / Arnold Laver Site Access



Signalisation of Canal Road / Gaisby Lane Junction




urbed