

BROOKHAY

The Development of a Masterplan

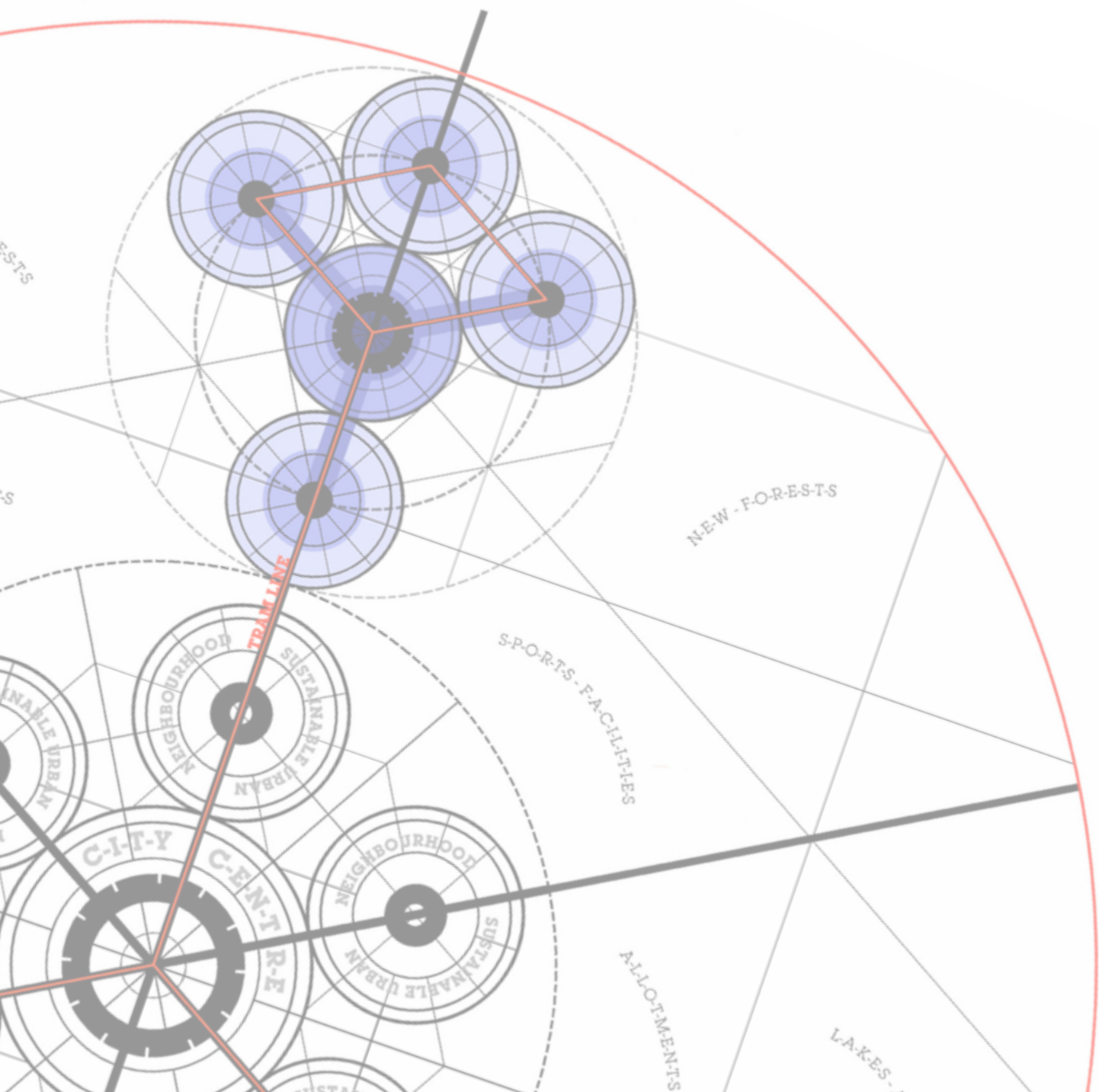




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URBED (Urbanism, Environment and Design) specialise in urban design and sustainability, having been at the forefront of regeneration and place-making projects across the UK. URBED were awarded the coveted Wolfson Economics Prize in 2014 for their vision of how Garden City principles could shape new developments.

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BROOKHAY

Part 1

Introduction

BROOKHAY

1 ~ Introduction

A~ Brookhay

This document has been prepared by URBED for Barratt Developments as part of a team including Wardell Armstrong, IPaD and Mick Timpson Urban Design. The team were appointed in January 2015 to develop a masterplan for the Brookhay site that lies between Lichfield and Burton upon Trent in Staffordshire. The site is in two parts and covers an area of 847ha (2,092 acres) accessed from the A38 and bisected by two railway lines. Much of the land has previously, or is currently, being used for mineral working. The scale of the site and its excellent connections creates an opportunity to develop a new community designed around Garden City principles.

This report describes the initial master-planning exercise undertaken by the team. This has created two linked masterplans as shown on the plan

overleaf. To the north lies Brookhay Waterside, a scheme focussed on business and leisure uses, while the southern site is proposed to become Brookhay Garden Village, a fully serviced new settlement of 7,500 new homes.

Part 2 of this report describes the site and its context and the constraints that have informed the plan. Part 3 draws together the concepts that have informed the plan, particularly the influences of the early Garden Cities. Part 4 shows how these concepts have been applied to the site and Part 5 and 6 describe the masterplans for Waterside and the Garden Village. In Part 7 these are developed into a set of parameter plans. The final part develops the plans for the first two phases in a little more detail to illustrate the type of development proposed.





A38 to
Burton-upon- Trent

Barton-under-Needwood

Waterside

Alrewas

Rail lines to
Birmingham

Fradley

A38 to
Litchfield

Garden Village

BROOKHAY

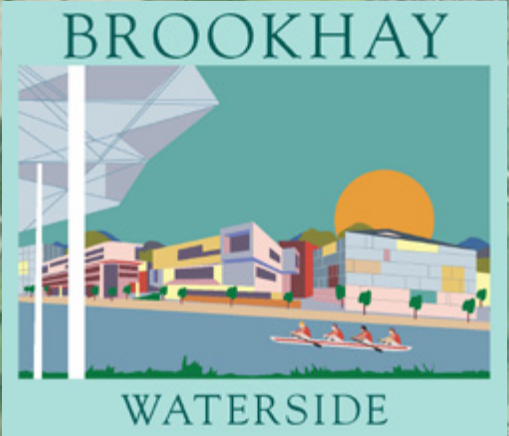
1 ~ Introduction

B ~ The Brief

Prior to URBED's involvement extensive technical work had been undertaken on the site by IPaD and Wardell Armstrong. This had included a detailed assessment of the site constraints, primarily relating to the capacity of the A38, flood risk, archaeology, ecology and open space. As part of this work a series of improvements had been designed for the A38 and its junctions along with two new railway stations and a park-and-ride facility. This had created the capacity to accommodate 7,500 homes and ancillary uses on the southern site and up to 150,000m² of commercial space on the northern site with leisure uses and 800 homes. Further technical work had identified the balance between developable area and open space, the extent of the flood plain and the buffer zones around services and ecological constraints.

URBED working with Mick Timpson were asked to create a masterplan from these ingredients. This followed URBED's success in winning the prestigious Wolfson Economic's Prize in 2014 that had focused on the creation of Garden Cities that were visionary, viable and popular. For Brookhay URBED were tasked with applying the lessons from our Wolfson prize proposals to Brookhay in terms of both the design and the management of a new garden village. This report describes the process by which this has been done. It draws inspiration from some of the early Garden Cities in the UK and the US and alongside the masterplan it includes proposals for the *Brookhay Charter* to guide the development of the scheme. Throughout the process URBED have worked closely with IPaD and Wardell Armstrong to ensure that the proposals sit within the identified technical constraints.







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Part 2

The Site Context

BROOKHAY

2~ Context

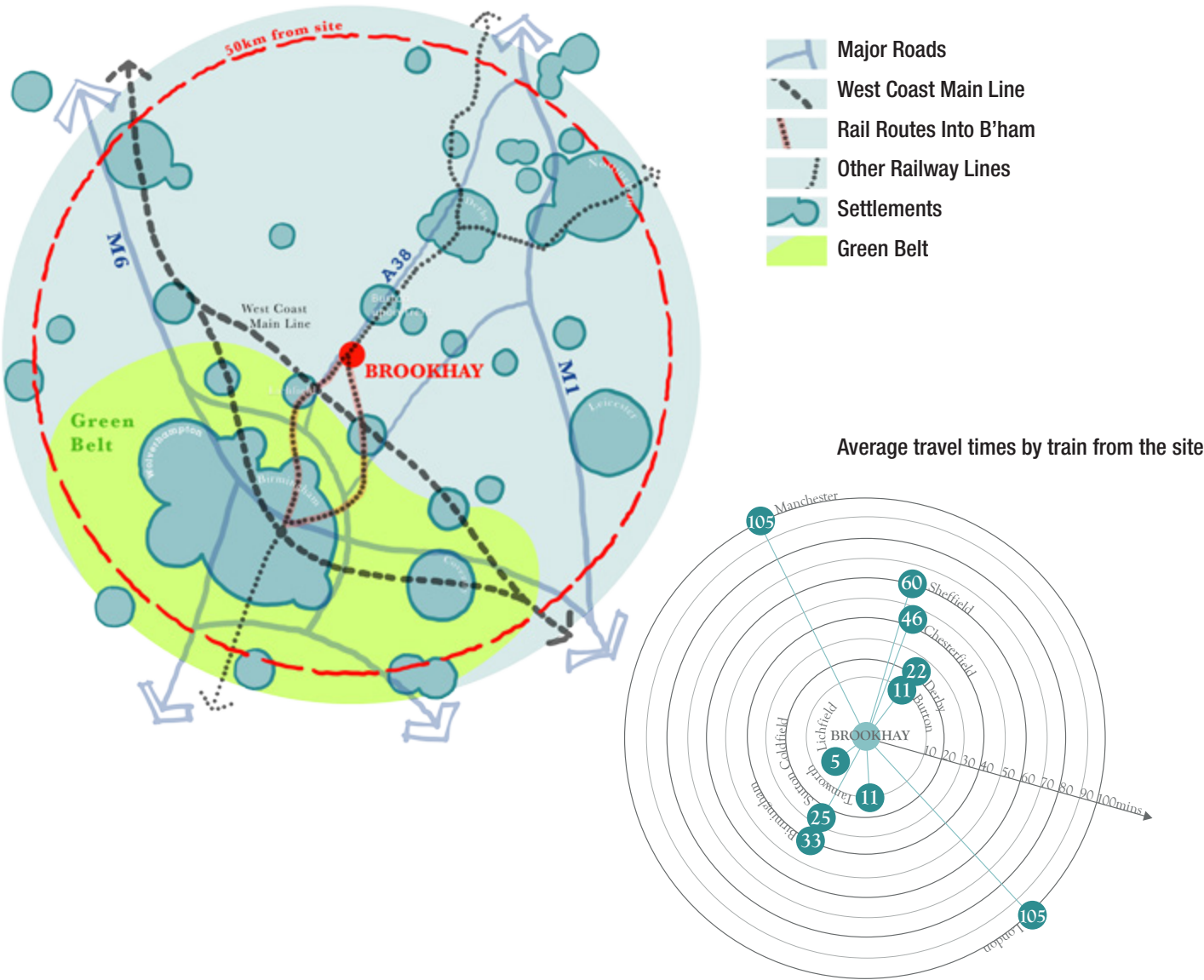
A ~ A Strategic Location

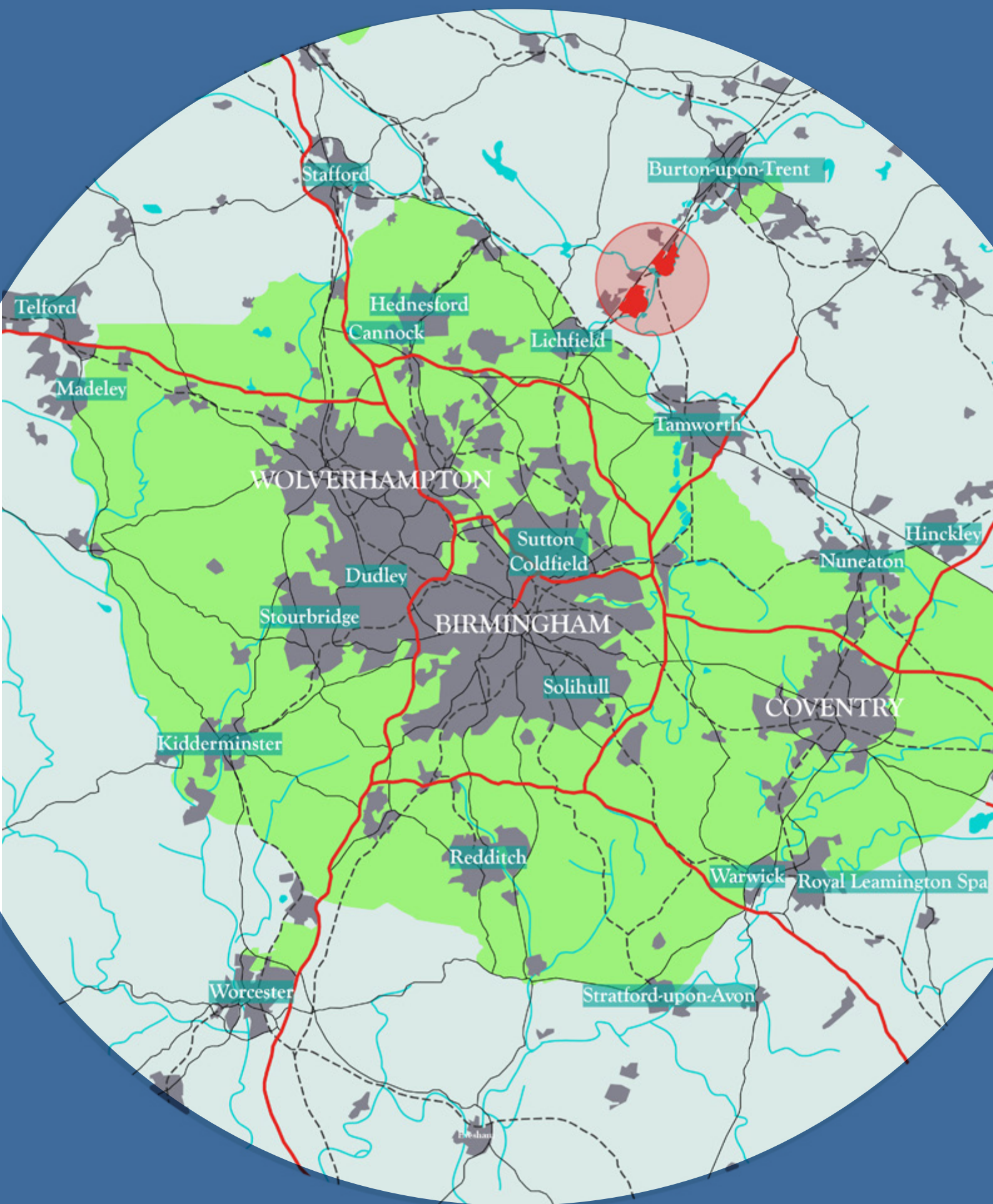
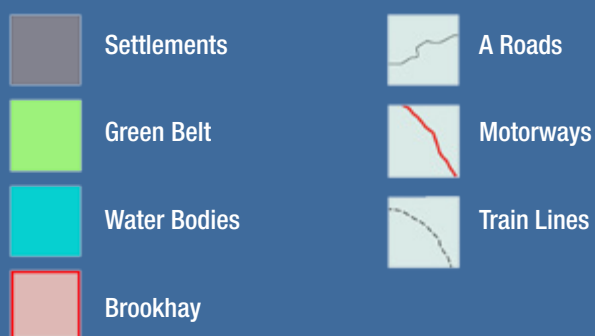
The site is approximately 35km from the centre of Birmingham just outside the West Midlands Green Belt. It stands on the main A38 trunk road and is just 15km from the M6.

However its main advantage in terms of accessibility is the two railway lines that pass through the site; the Birmingham to Derby main line, and the Birmingham Cross City line. Both lines could provide frequent rail services into Birmingham and surrounding cities. For example Birmingham New Street could be reached in around 20 minutes from Brookhay Waterside or within around 45 minutes from Brookhay Garden Village. This will require two new stations and the reintroduction of passenger services on the Burton to Lichfield line (which ceased in the 1960's).

This is a unique opportunity to create a series of rail connections. In terms of travel time people living in Brookhay could commute to Birmingham, Derby and Nottingham while also having good access to the West Coast Main Line at Lichfield. For the workspace these connections give employers access to a huge potential workforce in these cities as well as good road access to the motorway system.

URBED argued in our Wolfson essay that to be sustainable new Garden Cities must be connected to existing cities by public transport. At a time when Birmingham needs to accommodate for its growing population outside its administrative area, this site creates a unique opportunity for significant development with excellent connections to the city.





BROOKHAY

2 ~ Context

B ~ Local Context

The two nearest significant settlements are Lichfield and Burton-upon-Trent. Lichfield is a Cathedral City with a population of approximately 30,000 (2011 Census). It has an attractive centre with numerous listed buildings, a well appointed high street and visitor economy focused around the Cathedral. Burton-upon-Trent is a town on the River Trent with a population of 72,000 (2011 Census). Brewing was traditionally Burton's trade and is still an important part of it's economy. The town has significant commercial development including the Centrum 100 Business Park to the south.

The immediate context consists of a series of villages to the west of the A38; Fradley, Alrewas and Barton-under-Needwood. Census data shows these villages to be relatively affluent with a high proportion of people in professional or managerial jobs. As we describe on page 19 each is served by primary schools and there is one secondary school. However they lack a good range of shops and other facilities.

The A38 has attracted a number of commercial and distribution uses. There are a number of business parks including Fradley Park south of Fradley. To the north of the site stands Barton Park that includes a

large Argos distribution depot and the Bombardier train maintenance depot.

The National Memorial Arboretum sits between the two parts of the site and is a popular attraction bringing in thousands of visitors. These numbers are growing and a new £15m visitor centre is planned. St George's Park National Football Centre lies 11km to the north west and Cannock Chase Area of Outstanding Natural Beauty lies 24km to the west.

The inset plan shows administrative boundaries in relation to the site. It sits within the County of Staffordshire. The northern site lies within East Staffordshire Borough Council, whilst the southern site sits within Lichfield District Council.

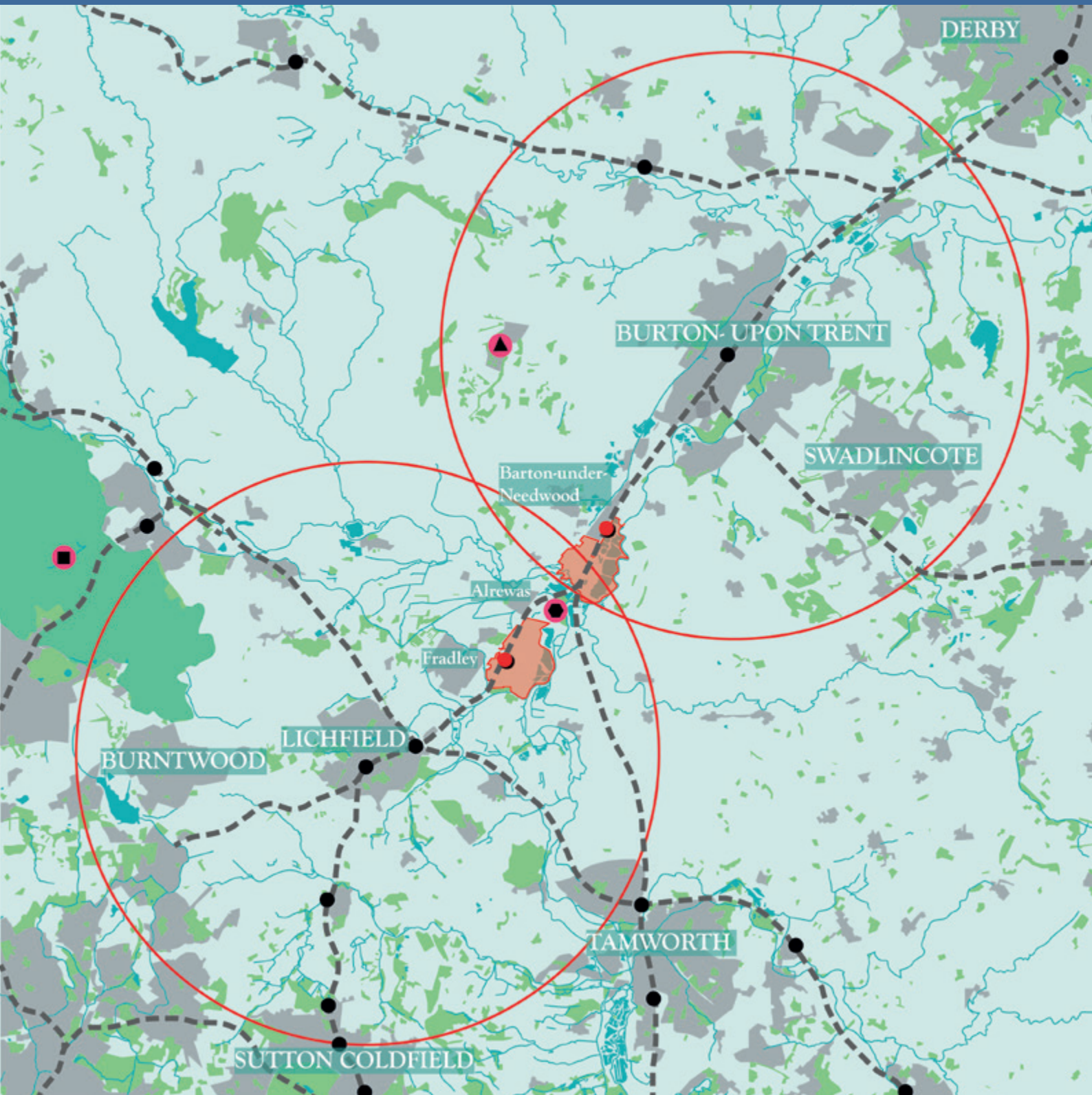


Above: Burton-upon-Trent

Right: Lichfield Cathedral

Below: The National Memorial Arboretum





Cannock Chase



National Football Centre



National Memorial Arboretum



Settlements



Green Belt



Green Space



Water Bodies



Brookhay Site



Railway Lines



Proposed Stations



Existing Stations



Administrative Boundaries

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2 ~ Context

C ~ Landscape Character

The site lies outside of Birmingham's Green Belt and sits within the Trent Valley Washlands National Character Area. This is described as a distinctly narrow, linear and low lying landscape, often clearly delineated at it's edges by higher ground. It is largely comprised of flat flood plains and the gravel terraces of rivers. There are no significant topographical features.

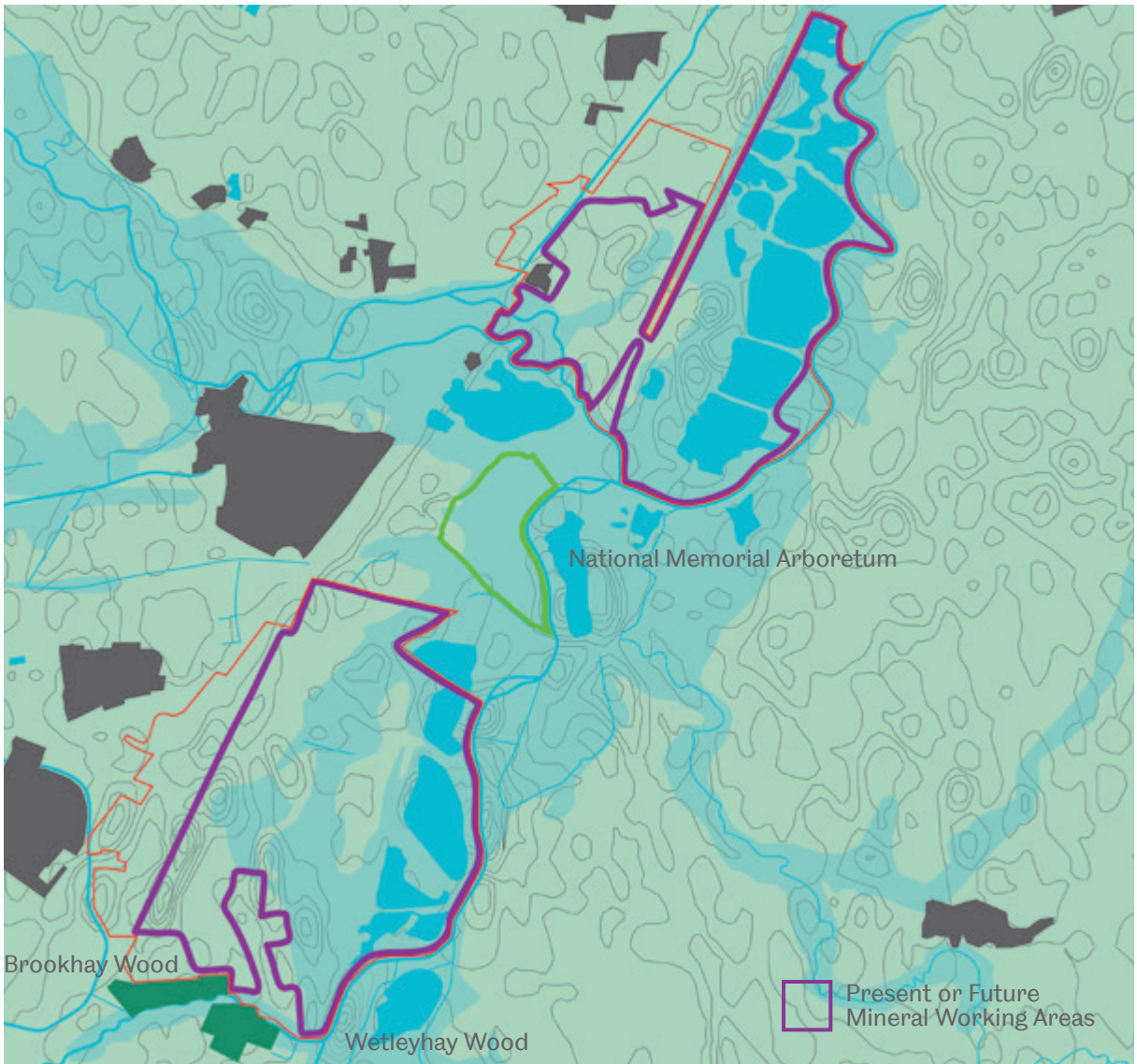
The site is the subject of extensive mineral workings, which have resulted in the creation of a series of waterbodies. The area of mineral workings comprise a significant percentage of the total area. A proportion of the site is within flood zone as can be seen below.

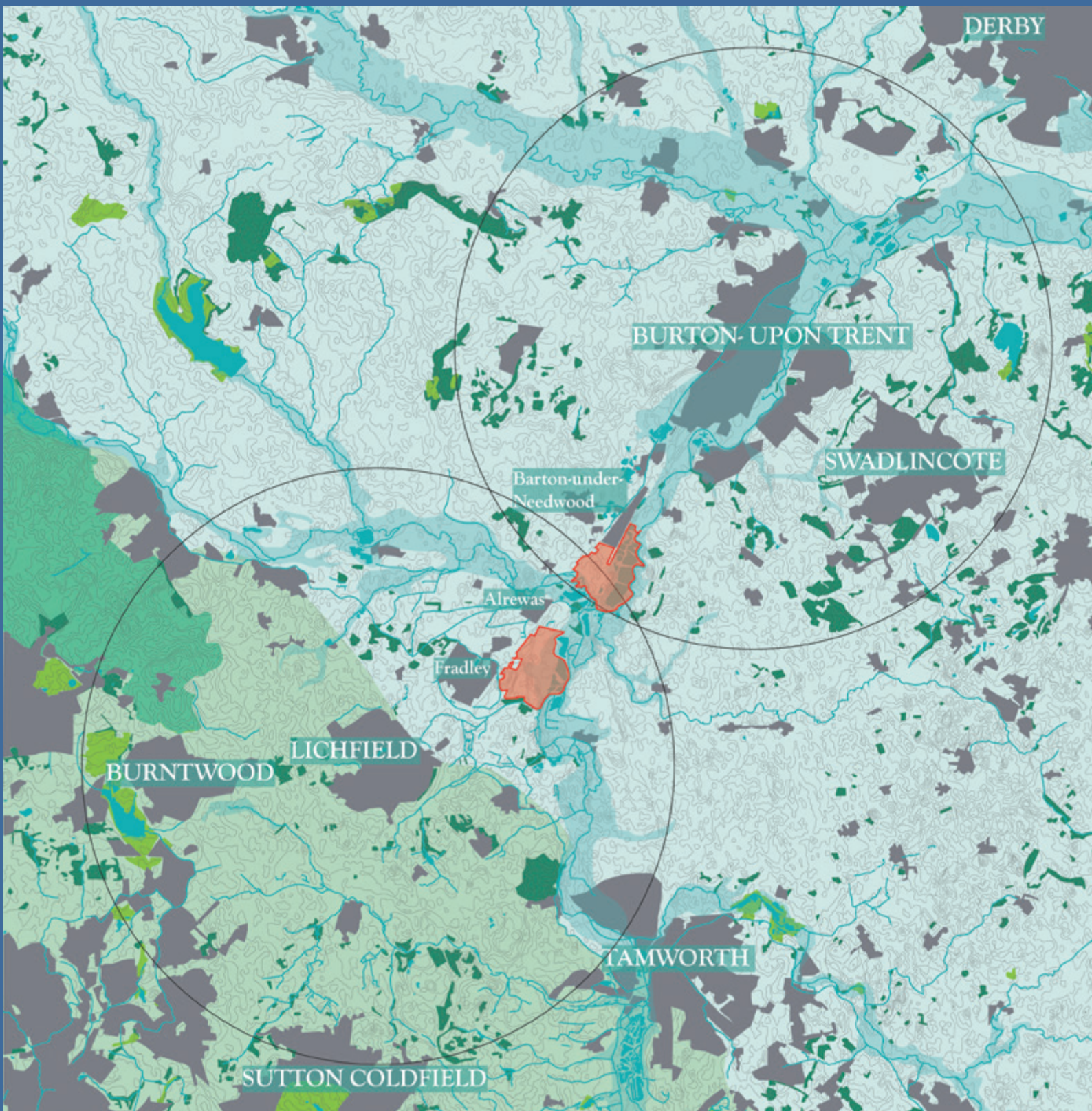
Two ancient woodlands, Brookhay Wood and Wetleyhey Wood, lie beyond the southern boundary of the southern site. The National Memorial

Arboretum covers an area of 150 acres and has around 50,000 trees, although many of these are young specimens. Cannock Chase AONB is currently under pressure with growing visitor numbers. There is an appetite to provide an alternative large, publicly accessible open space which could be provided within Brookhay.

There are no Sites of Special Scientific Interest within close proximity. Cannock Chase Area of Outstanding Natural Beauty lies some distance to the west and as such is not considered to be material.

The site has been modelled to create a clear edge to the flood plain allowing half of the land area to become open space. This will be designed to reflect the character of the Trent Valley Washlands with lakes and woodland.





Waterbodies



Green Belt



Sites of Special Scientific Interest



Floodzone



Area of Natural Beauty



Woodland



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2 ~ Context

D ~ Mineral Workings

At Brookhay Waterside site Hansons (formerly ARC) has about 3 years left of sand and gravel extraction on what would become the watersports site to the east of the railway. This area has a restoration principle under a planning condition which requires restoration to a form suitable for watersports use. The LPA has also granted a change of use to the principle of watersport use.

Hansons also own the mineral rights on the land between the A38 and the railway line from the River Trent to the Argos unit. It is proposed through the County Minerals Plan that Hansons will extract the commercially viable minerals on a phased basis from the land south of Catholme Farm and restore the land to a commercial/residential after-use standard, in advance of development taking place.

The mineral working at Brookhay Garden Village has been or will be undertaken by Lafarge Tarmac, who is also a landowner at the northern extremity of the site. Its workings are shown on the plan below.

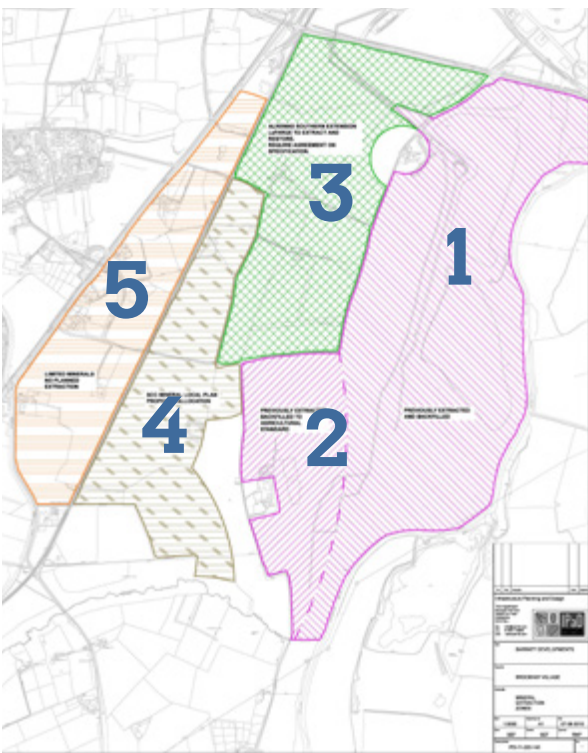
Area 1 has largely been worked, with Lafarge Tarmac completing their extraction, backfilling and restoration in the south-east corner. The eastern portion located between the River Tame and the proposed development boundary has been restored predominantly as lakes and wetlands. Area 2 has been restored for agricultural use.

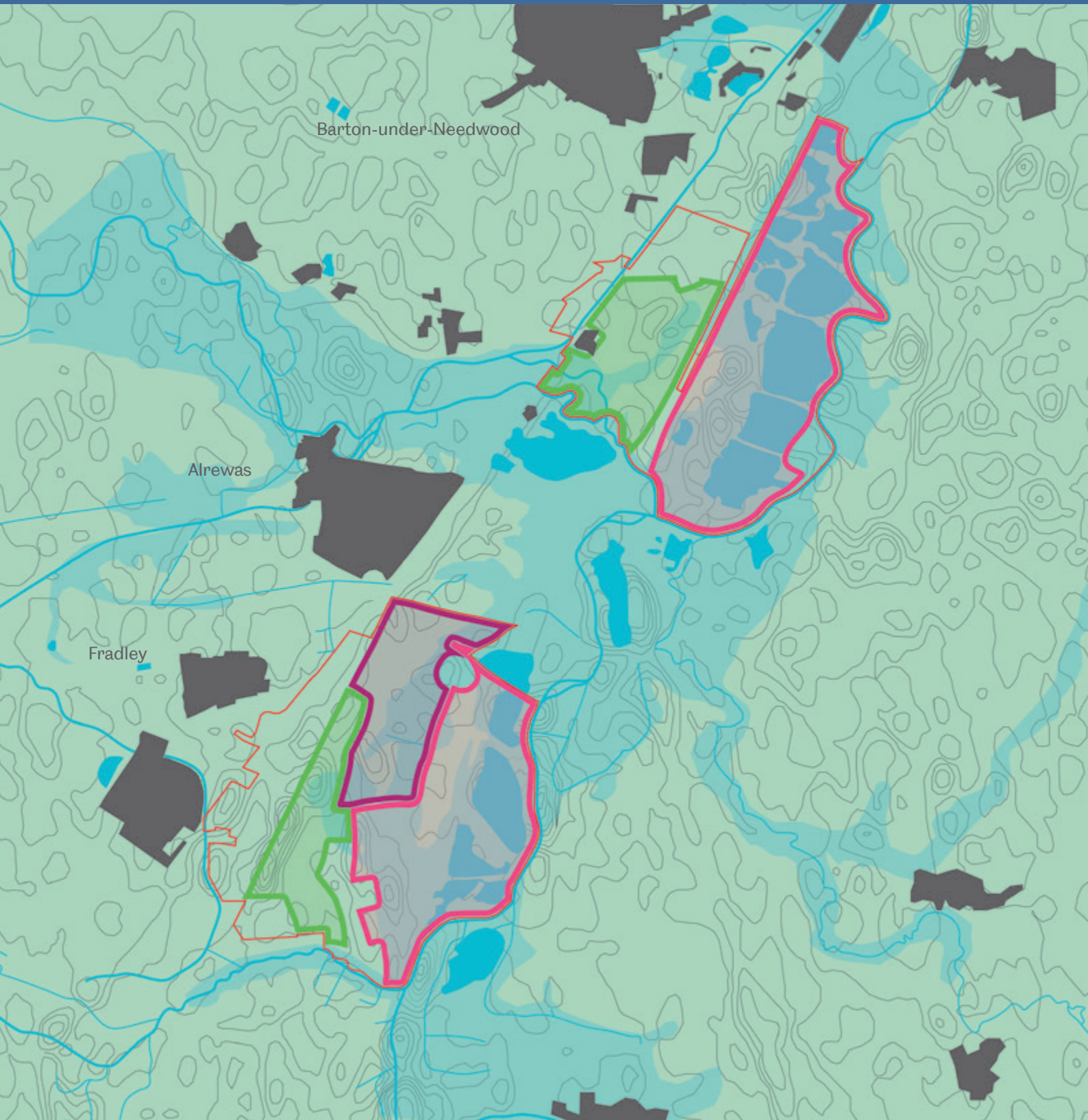


Lafarge Tarmac owns the land and/or mineral rights on Area 3 and has recently (2015) been granted planning permission for mineral extraction. This permission requires restoration to agricultural use. It has been provisionally agreed this would, subject to the principle of built development approval, be restored for residential development.

Area 4 is in the Mineral Local Plan as an allocation, but no mineral operator currently has ownership of the mineral extraction rights. It is anticipated that Lafarge Tarmac will agree mineral extraction rights with the landowners, and a further extension of the Alrewas South Quarry will be part of a further planning application to be lodged by this operator. In liaison with Lafarge Tarmac, it has again been provisionally agreed this area would be restored for residential development.

Area 5 is understood to have no significant mineral resource and is not in the Mineral Local Plan; no operator has any mineral rights here and this situation is unlikely to change.





Previous or Current
Mineral Workings



Minerals Allocation



Planning Permission for
Mineral Workings



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2 ~ Context

F ~ History of the Area

In 2002, the skeleton of a woolly rhino was unearthed in the sand and gravel quarry pit at Whitemoor Haye. The rhino, a major archaeological discovery was believed to have died 30-40 thousand years ago and is now in the National History Museum.

In terms of human history the area also has ancient roots. As described in the following page, archaeological evidence of two timber henges, built a thousand years before Stonehenge have been found on the northern site.

The local villages may have equally ancient origins. Alrewas is certainly one of the oldest recorded communities in the Midlands. It is believed that the settlement grew from an Iron Age Farm into a Village to supply the needs of salt traders travelling from Cheshire to London who were sometimes held up at the fords by flooding. Alrewas was famous for eel fishery and basket weaving was a thriving cottage industry due to an abundance of reed beds on the floodplains and riverbanks.

Barton-under-Needwood was a relatively important settlement in Anglo Saxon times. The place name, Barton comes from “Bertone” meaning

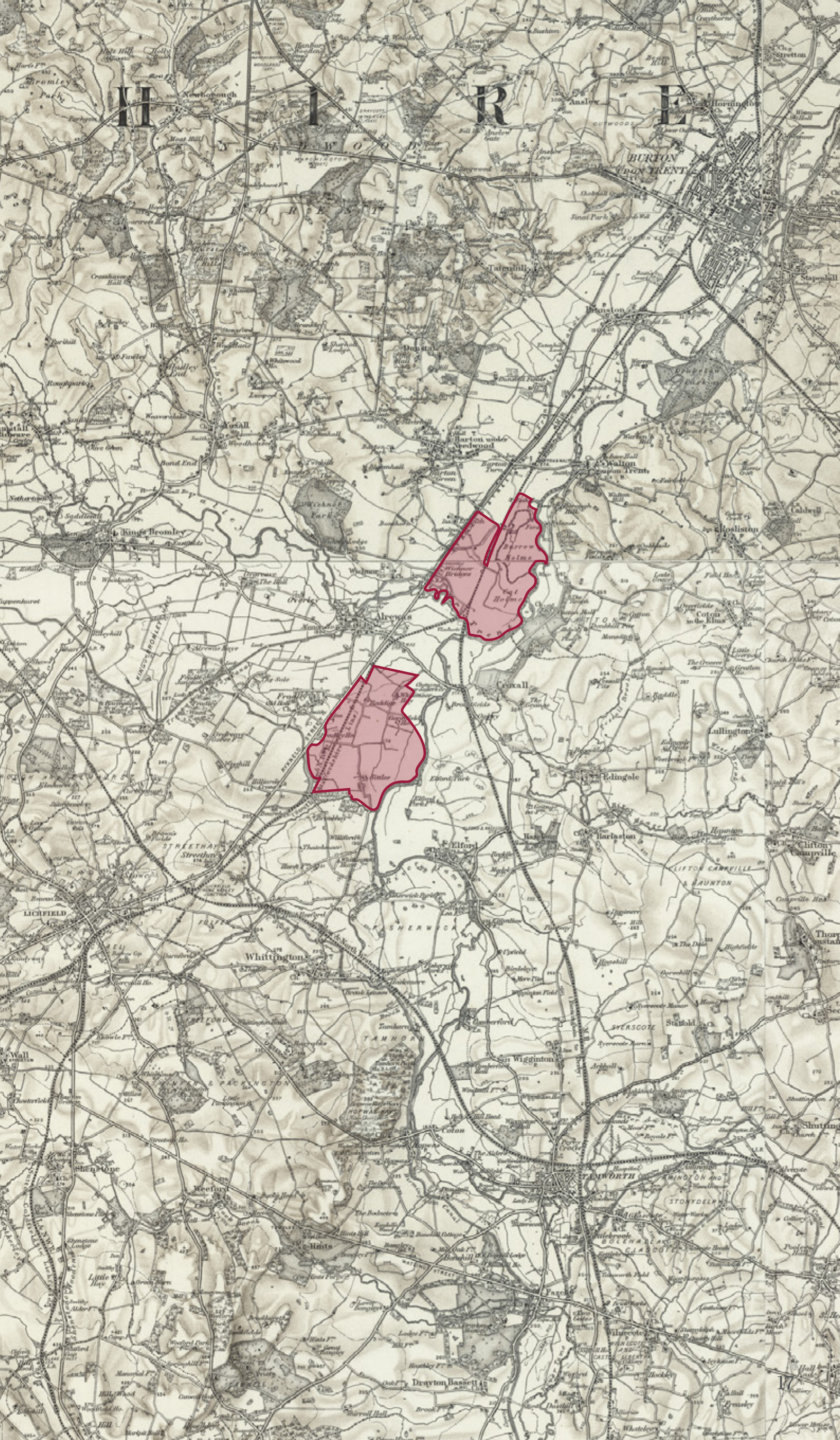
Barley Farm. It was recorded in the Domesday Book of 1086 as a large manor with extensive land and woodland. Farming was the predominant occupation in the village and there has been relatively little industry over the centuries apart from brick and tile making in the 19th century and sand and gravel extraction in the 20th century. Aside from this Barton has largely attracted minor gentry, professional men, brewery owners and others of private means to live there. Education has a long history in the village with a grammar school having been established in 1593.

Fradley is however more recent having been little more than a scattering of farmsteads around St Stephen’s church until the RAF established a base during World War II which the village grew to serve. The airfield closed in 1958 and was sold in 1962 since being developed as Fradley Park, a warehousing and distribution development.

The aim of the Brookhay development is to add another village to the area as happened in Fradley 60 years ago. Like the other villages this will be clearly defined with a strong identity and village centre to sit alongside its more historic neighbours.



(above) The Church, Barton-under-Needwood (right) Map showing the area in 1896



BROOKHAY

2 ~ Context

G ~ Heritage Constraints

There are a number of listed buildings within the surrounding villages. A few sit within or close to the site boundary. These are illustrated on the plan opposite and comprise: The Fradley Arms Hotel - Grade 2 (1), Roddige Farmhouse - Grade 2 (2), Wychnor Bridges Farmhouse and Associated Buildings - Grade 2 (3).

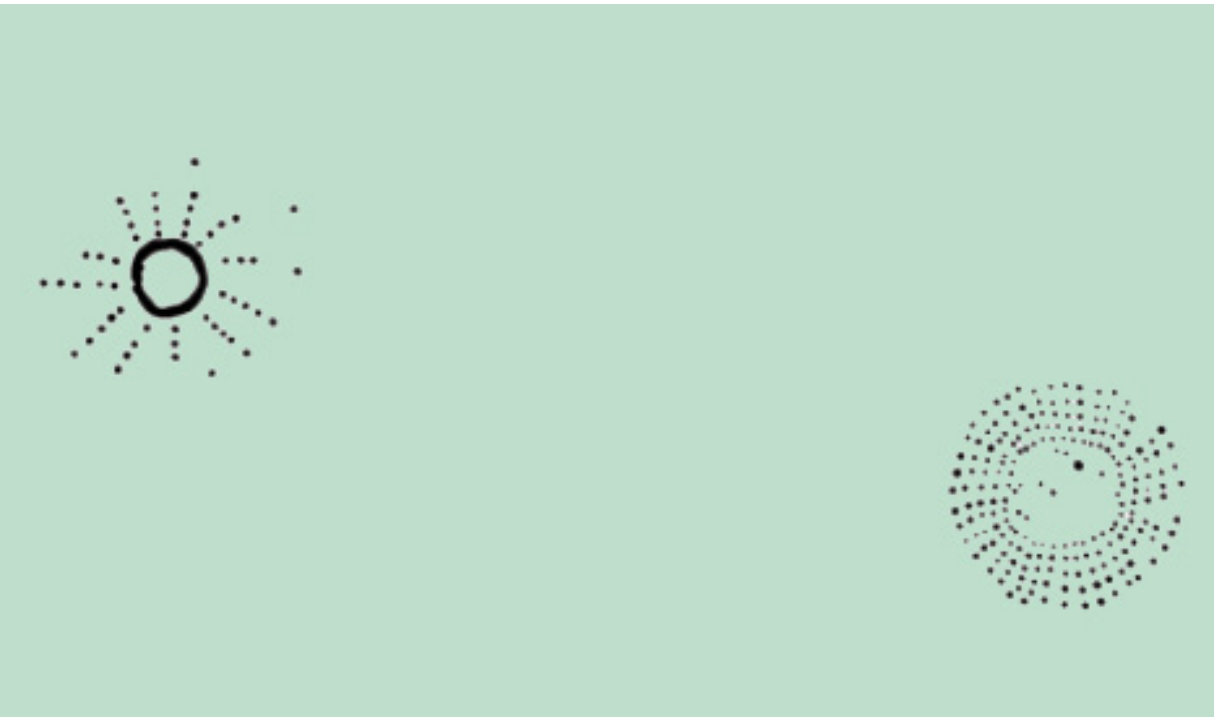
The plan shows the location of Historic Environment Records in red within and around the site. The most notable of these is Catholme Ceremonial Complex, a Scheduled Ancient Monument which lies within the northern site (A). The complex comprises two henges and a cursus; a formation of parallel banks

dating from the Neolithic period. The henges were built from wood and consequently only the pattern of the pits remain. The central feature of the sunburst monument is thought to have been dug during the Bronze Age with further additions and configurations being made to the complex up until the Iron Age.

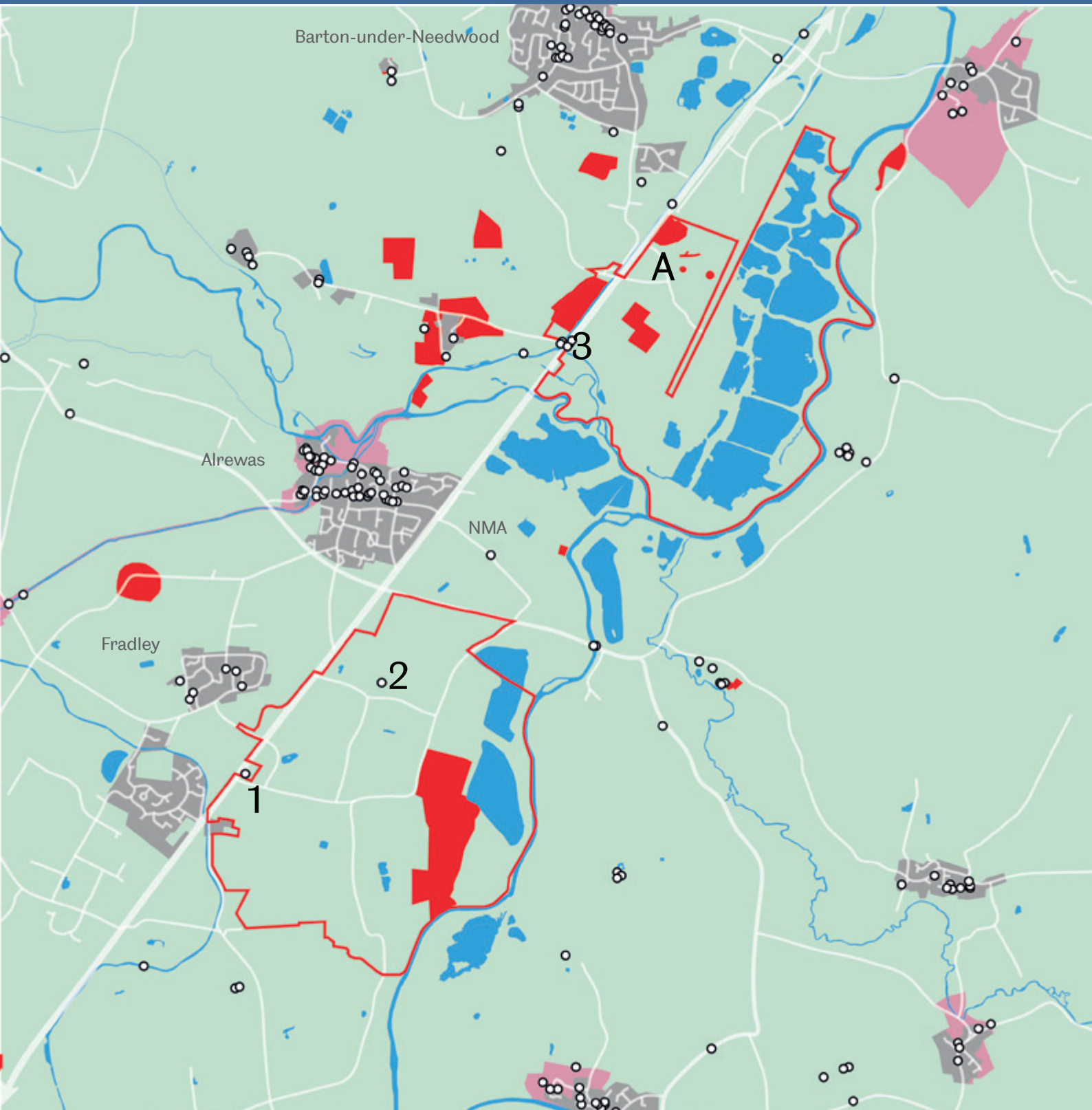
The Catholme Ceremonial Complex lies within a dense regional distribution of prehistoric monuments dating from the earlier Neolithic through to the Iron Age (The Catholme Ceremonial Complex, Chapman, Henry; Hewson, Mark; Watter, Margaret).



Wychnor Bridges Farmhouse



Catholme Ceremonial Complex: Sunburst (left) and Wood Henge (right) (A on the plan to the right)



Listed Buildings



Historic Environment Record



Conservation Area



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2 ~ Context

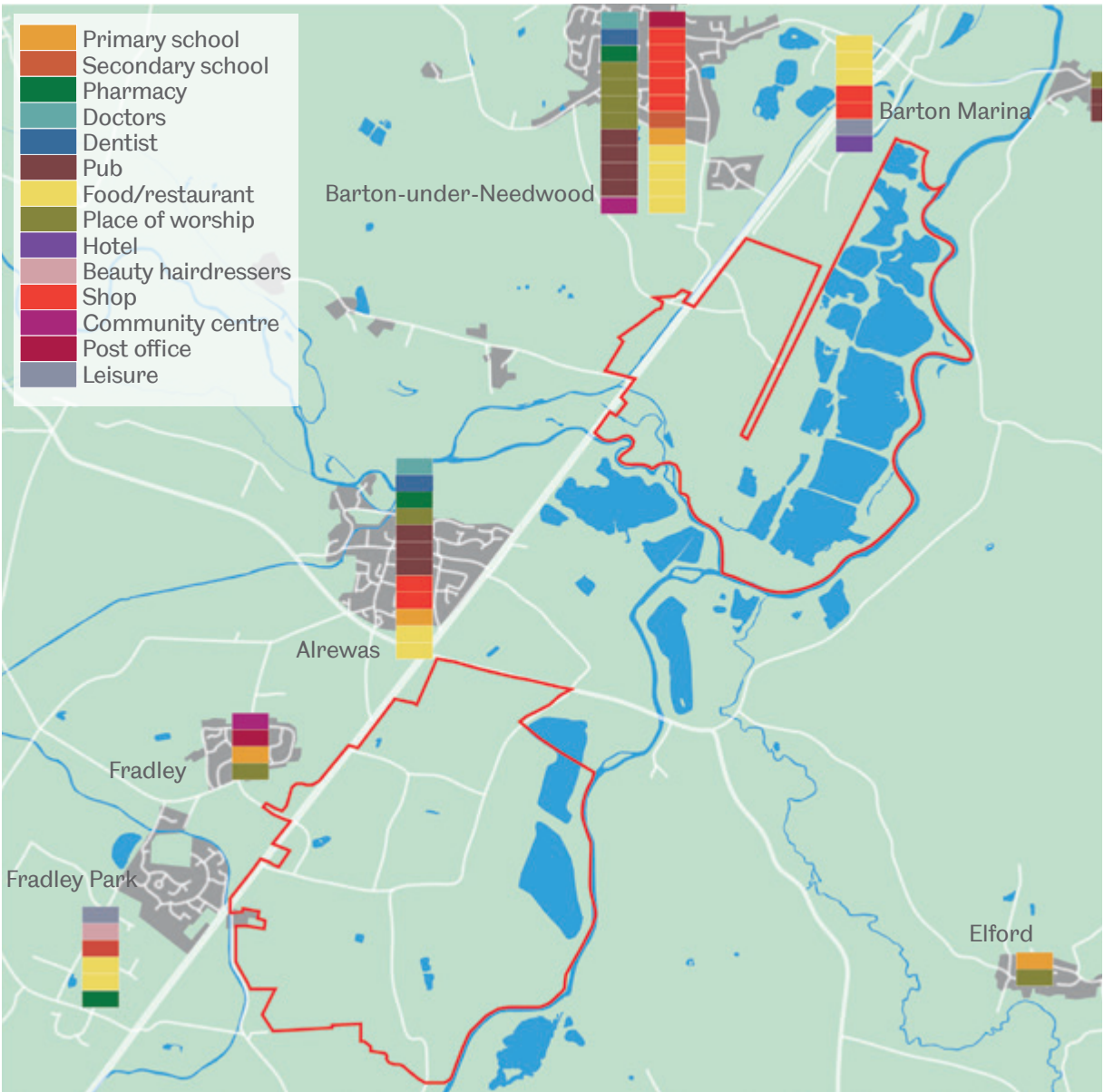
H ~ Land Use and Facilities

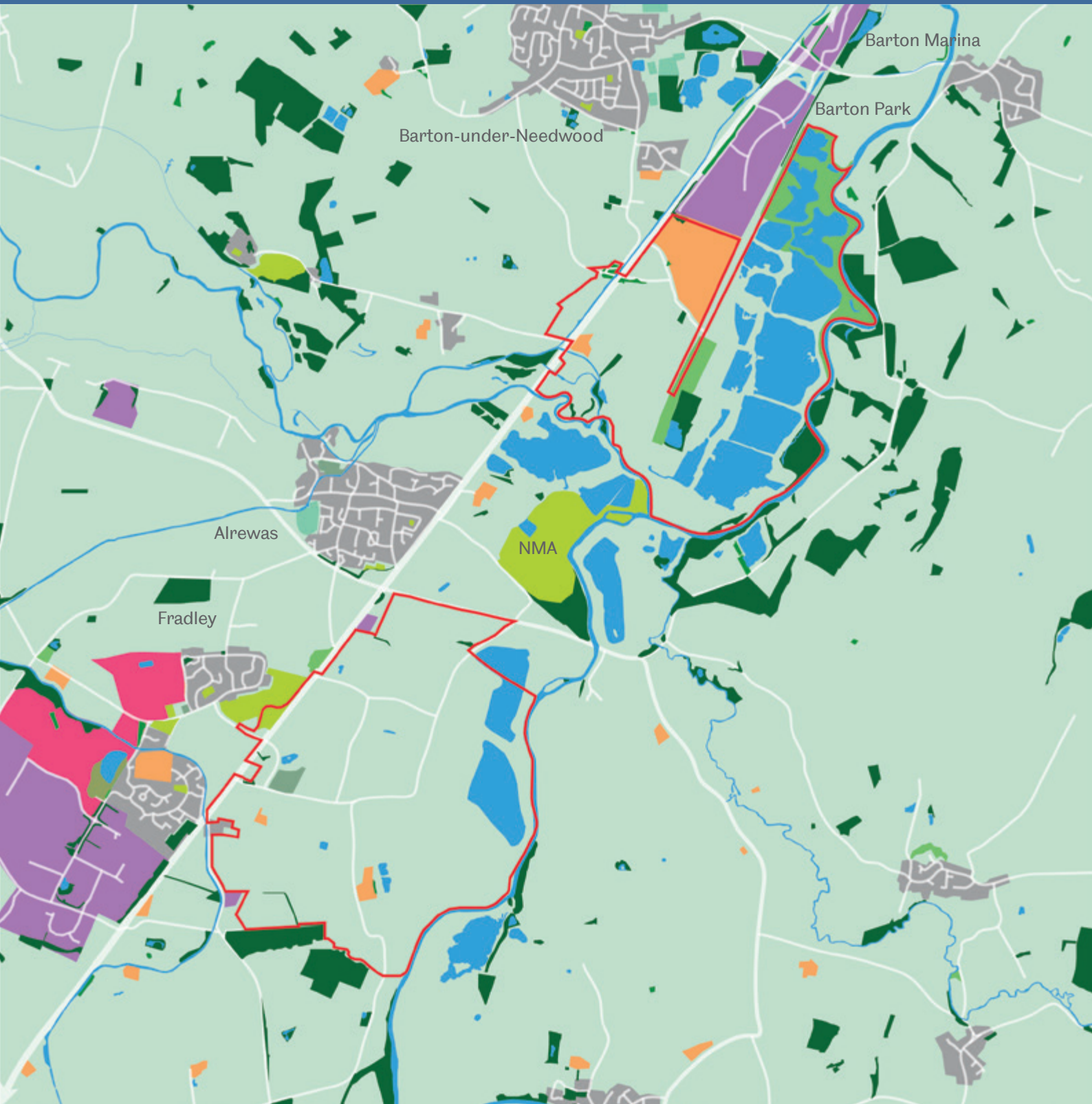
Of the three villages near the sites Barton-under-Needwood has the greatest level of amenities, including both a primary and secondary school, doctors surgery, dentist, community centre, shops and eateries. Alrewas is also well serviced but has a reduced range. Fradley has facilities such as a school, community centre, post office and place of worship but has no shops or restaurants. There are clusters of facilities at Fradley Park and Barton Marina.










The land use in the area is varied with areas of agricultural land and farmsteads juxtaposed with large areas of commercial activity linked to the A38 Corridor. Barton Park is situated to the north of the site and houses, among other occupiers, Argos' main distribution centre. Fradley Park, another large

business park is situated to the south of the site. The three villages comprise the majority of residential development with other individual dwellings and small clusters of housing distributed around the surrounding countryside. There is an existing housing allocation at Fradley for approximately 1250 dwellings. The cultural and leisure use of the National Memorial Arboretum (NMA) lies between the two sides of the site.

The local facilities such as schools have little capacity to serve the new development which will need to provide its own facilities even for the early phases. There is the potential for these new facilities to also serve the people of Fradley and it is important that strong links are created.





Residential		Agriculture		Marshland		Sports Pitch	
Commercial		Trees		Cemeteries		Leisure and Parks	
						Housing Allocation	

BROOKHAY

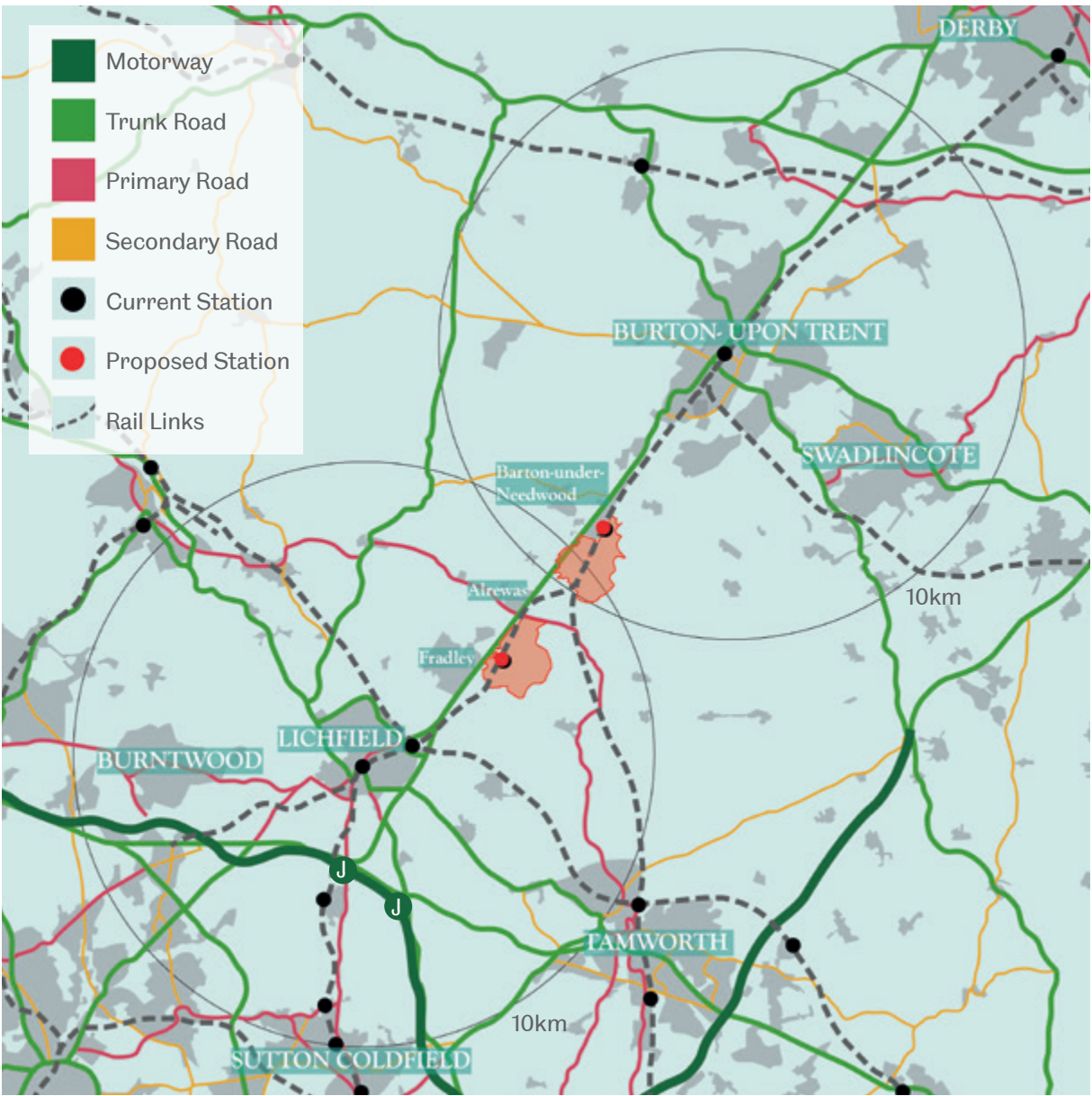
2 ~ Context

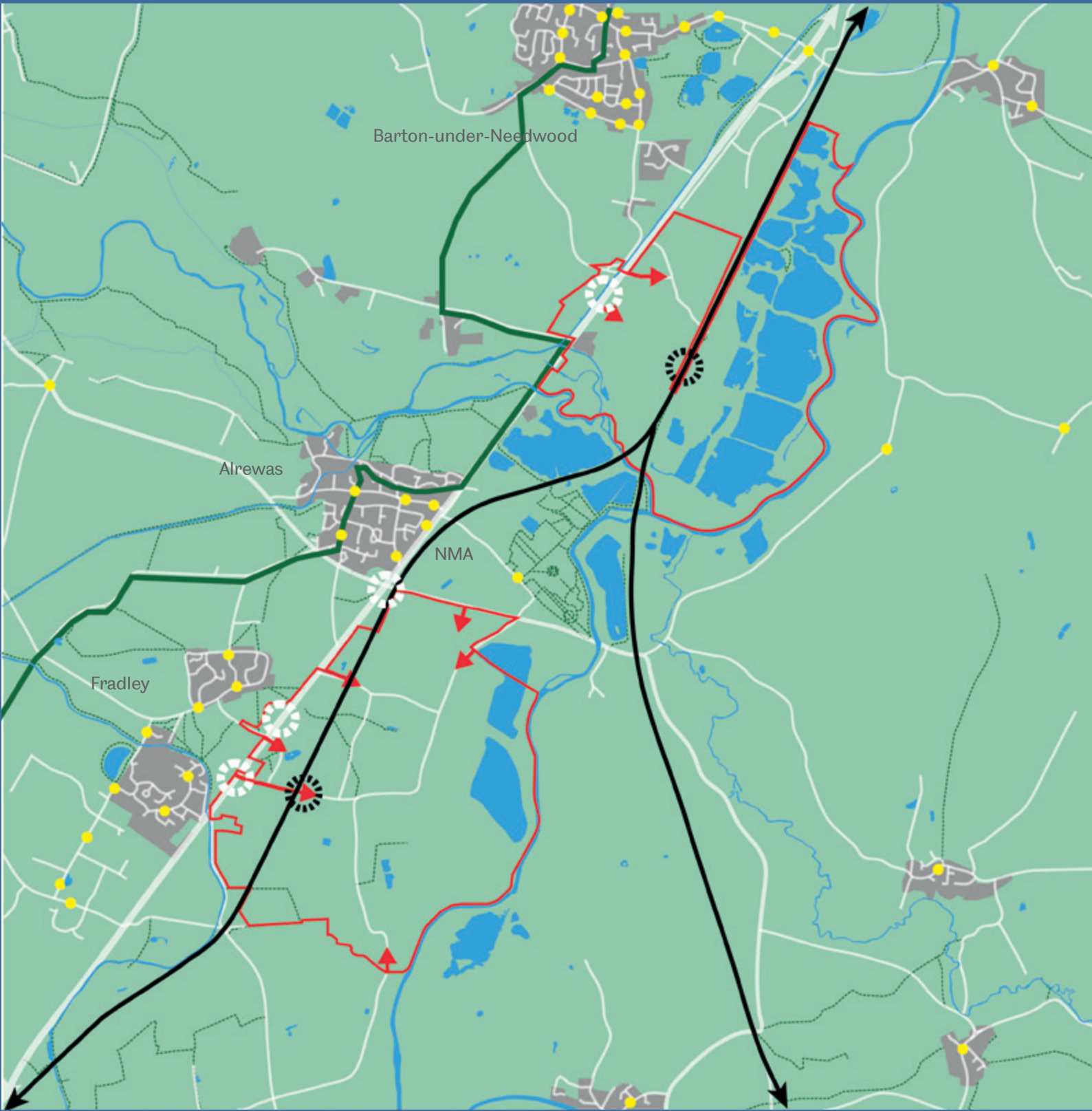
I ~ Access and Connectivity

The site is located between Lichfield and Burton-upon-Trent on the A38, 35km from the centre of Birmingham and 15km from the M6. The A38 is a major trunk road which runs from Cornwall to Nottinghamshire. This section of the A38 corridor is a two lane, dual carriageway with a 70mph speed limit. Proposals for the road include reconfiguring the junction between Dogs Head Lane and Catholme, upgrading the Alrewas and Fradley junctions, the replacement and upgrading of slip roads and a reduction in the speed limit along a 20km stretch of road. A new park-and-ride facility into Birmingham linked to the new station in the

northern part of the site will reduce southbound traffic. This will free up capacity on the A38 for the development.

However to achieve this the scheme will still need to achieve a shift in the transport modal split towards trains, public transport, cycle and pedestrian links. This will be achieved by reintroducing passenger services on the rail line to Litchfield and building a second station on the southern site. Bus services will be used to link the new stations through a combination of new services and a diversion of existing routes along the A38 corridor.





Access Points



Bus Stop



Proposed Station



Rail Links



A38 Corridor



Proposed Junction Improvements



Pedestrian Routes



National Cycle Route



BROOKHAY

2 ~ Context

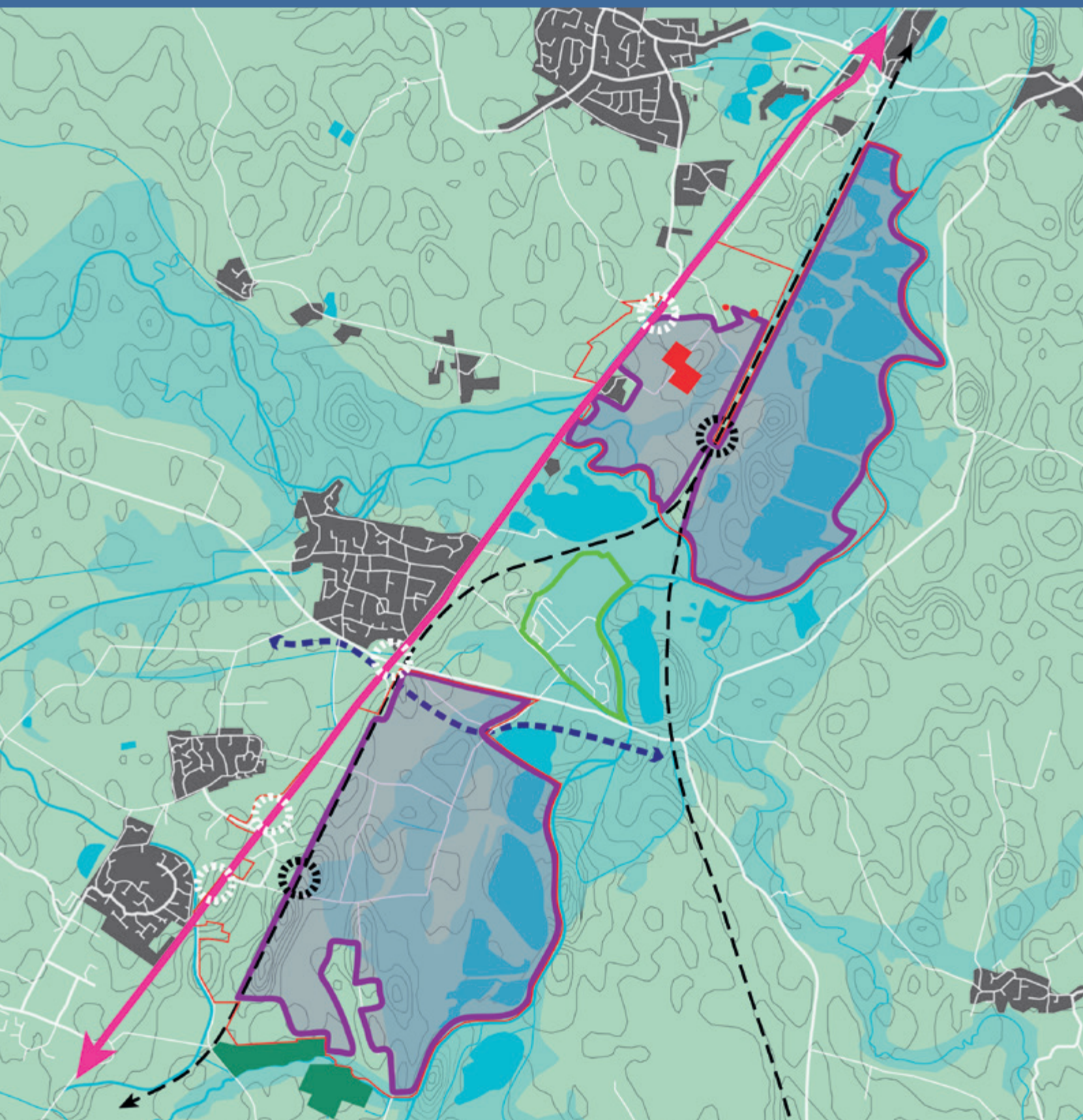
J ~ Overview of Constraints

The context work in the preceding pages has been consolidated into the constraints plan opposite. This highlights the key drivers that have influenced the masterplanning process:

- The position of the railway stations as agreed with Network Rail.
- The points of road access and the configuration of the junction improvements .
- The extent of the flood plain. Ground modelling work has been undertaken to shape a new flood plain to set the extent of development.
- The area of mineral working - this represents a constraint because of the phasing of extraction of the areas that have not yet been worked.
- Ecological constraints of which there are very few. There are areas of ancient woodland to the south which have a buffer zone.
- Archaeological constraints which relate to the northern site including Cathholme Ceremonial Complex Scheduled Ancient Monument and an area identified for investigation prior to development.
- Services infrastructure including a high pressure gas pipe just to the north of the southern site that includes a health and safety zone.



Aerial view of water bodies within the northern site looking south west





BROOKHAY

Part 3

Developing the Concept

BROOKHAY

3 ~ Developing a Concept

A~ Two Distinctive Places

The configuration of the sites in Brookhay to the north and south of the National Memorial Arboretum (NMA) means that effectively they are two different sites. The NMA is a closed site so that the only links between the two sites are the A38, and a riverside walkway. We therefore suggested early in the masterplanning process that we treat the sites as two distinctive places, each with its own distinctive mix of uses and identity.

To the north the aim is to create a new employment destination alongside a major water-based leisure facility which we have called Brookhay Waterside. To the south our aim has been to create a garden village drawing inspiration from some of the early Garden City schemes in Letchworth and Welwyn. The boxes to the right show the vision statement for each of these developments.



View of the southern site, looking north from the southern boundary

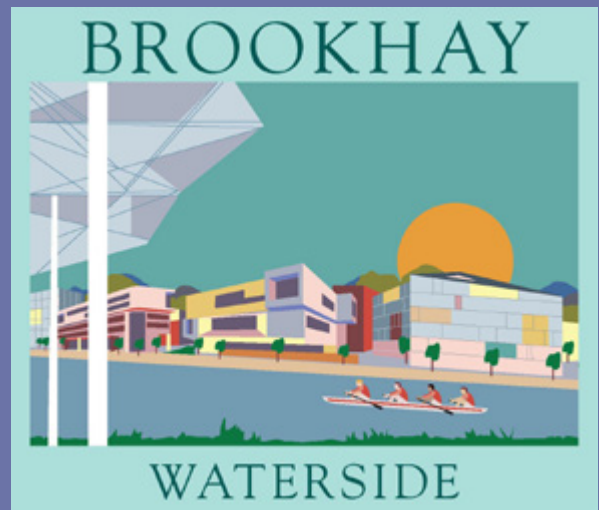


View of the northern site, looking south from the northern boundary



A new community set within a garden. Brookhay Garden Village will be built according to Garden City principles, with half of the site being open space and investment being made into key infrastructure such as rail links and schools. Up to 7,500 homes could be supported by village centres, schools and community facilities.

A series of distinctive neighbourhoods in a mixture of styles and densities will create a new settlement, almost a town with a new high street and community facilities, primary and secondary schools and a railway station. All of this will be set within 220 hectares of green and open space with rivers, lakes and a network of paths and cycleways. This new Country Park will link to local features such as the National Memorial Arboretum and beyond.



Flexible employment space meets modern living. Brookhay Waterside could feature high quality business space alongside a range of other flexible employment opportunities. A Watersports Centre can deliver a regionally significant facility for activities including rowing, sailing, canoeing and cycling.

Brookhay Waterside can deliver high quality places to work, with around 150,000 sqm of commercial space, creating around 2600 jobs. Employment space including that oriented towards innovation, with research and development; the potential for high-tech industry; manufacturing and storage and distribution. Uses would primarily be B1, B2 and B8. Our vision is for Brookhay Waterside to be future-proof, meeting the demands for technological advancement, for instance incorporating the latest high speed broadband technology.

BROOKHAY

3 ~ Developing a Concept

B~ Garden Village Inspirations

The concept for the southern site was developed around the idea of the Garden City, first popularised by Ebenezer Howard at the end of the 19th century and now being promoted by national government and others seeking a solution to a growing housing crisis in the UK.

Howard’s vision for Garden Cities sought to combine “the advantages of the most energetic and active town life, with all the beauty and delight of the country”. Our vision for Brookhay Garden Village is to create a development that is true to this ideal and also embodies the wider principles of the Garden City movement such as investment of part of the land value in infrastructure and the community management of the completed development. To this end we have developed a draft Brookhay Charter setting out the principles behind the scheme (see Page 33). These are drawn from the conclusions of URBED’s Wolfson essay as well as the Garden City guidelines developed by the Town and Country Planning Association.

In developing the physical shape of the masterplan we have gone back to the plans of the first Garden

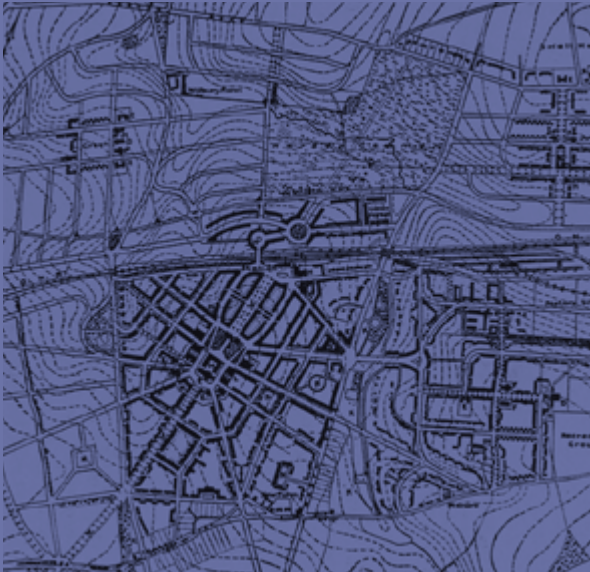
Cities as illustrated to the right. Unlike many recent interpretations of the Garden City these layouts are quite formal with long tree-lined avenues, very unlike modern suburbia. This was the starting point for the Brookhay Garden City masterplan as described on the following pages. We have started with a very strong formal framework for the whole of the scheme so that the layout is very easy to understand (what urban designers call legibility). We have then imagined that each part of the plan is masterplanned by a different team so that the formal town plan becomes much more irregular at the local level allowing different neighbourhoods to develop their own identity.

The development within this framework, like Letchworth and Welwyn will feature semi-detached houses with gardens front and back, tree lined streets and green public open spaces as captured by the painting of the Camden Town Group, a group of artists working in the 1900’s who frequently painted Letchworth.





Aerial View of Letchworth



Original Plan for Letchworth



Spencer Gore: Letchworth, The Road 1912

BROOKHAY

3 ~ Developing a Concept

C~ Waterside Inspirations

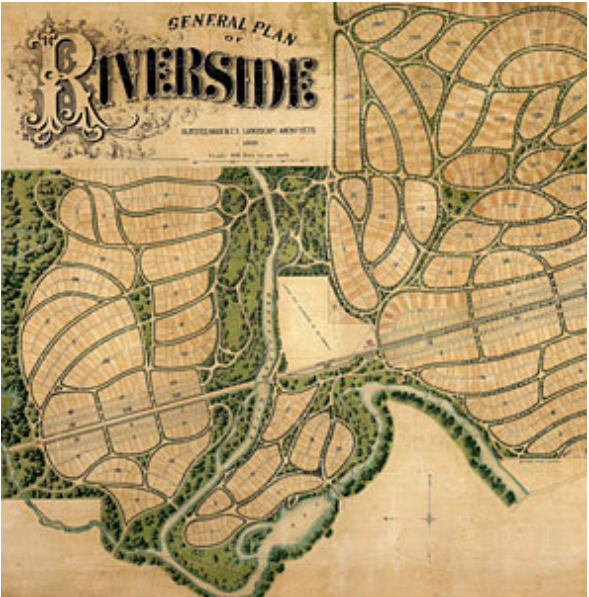
The inspiration for Brookhay Waterside came initially from the work of Bruce Katz and Julie Wagner on what they call “Innovation Districts”. These are business locations where companies cluster and connect with start-ups, business incubators, and accelerators. Bruce Katz argues that this does not happen on business ‘parks’ which is why he prefers the term ‘districts’. These innovation districts he suggests should be ‘physically compact, transit-accessible, and technically-wired, offering mixed use housing, office, and retail’ to offer opportunities for collaboration and cross industry networking.

The Brookhay Waterside plan seeks to combine the requirements of large floorplate uses such as manufacturing and warehousing with the more fine grained street life of the innovation . In doing this it draws on examples like Chiswick Park in London (pictured below). The characteristics that we have drawn from these places is a clear street-based layout (as in the Team Valley Industrial Estate top right). A strong open space structure (as in Kingsway in Rochdale where 11,000 trees have been planted) and a mix of types of workspace, housing and leisure uses. The aim is to deliver an enjoyable working experience by providing high

quality public spaces, shops, restaurants and sustainable transport links alongside business uses.

A key part of the Waterside scheme is the Watersports Centre. There are only two other facilities with a 2km lake such as this in the UK at present. The orientation of the lakes at Brookhay mean that it would be the best facility in the country and there is a strong case for making it the national centre for watersports. This would benefit from the new station and would attract visitors supporting accommodation, conference facilities, a Country Park, leisure activities, bars and restaurants and a year round calendar of events.

The Waterside scheme also includes a residential element that has been inspired by the American exponents of the Garden City idea. Frederick Law Olmsted’s plan for Riverside, Illinois (below) created a leafy low density housing scheme with wide curved streets, generous spaces, large housing plots and a great deal of tree planting. Olmstead wrote that “the idea was to suggest and imply leisure, contemplativeness and happy tranquillity”.



Frederick Law Olmstead's plan for Riverside



Chiswick Park, London



Team Valley Trading Estate, Gateshead



Kingsway Business Park, Rochdale



Poleczki Business Park, Warsaw, Poland



Watersports Centre, Nottingham

BROOKHAY

3 ~ Developing a Concept

D~ The Brookhay Charter

The Brookhay development aspires to create a modern version of the Garden City. This relates not just to the look of the place but to the way that it is developed and managed. Drawing influence from URBED's winning entry for the 2014 Wolfson Economics Prize, The Charter has been drafted to guide the development:

BROOKHAY will...

1. Create a sustainable place: *Brookhay will be large enough to support a full range of local shops and facilities, employment space and leisure facilities so that it grows into a distinctive real place. It will be a more sustainable solution than developing small dormitory housing estates that cannot be served by public transport.*

2. Fund its infrastructure needs out of the value of the land: *This will include two new stations, and other rail improvements, three new primary schools and a secondary school, health facilities, junction improvements and other traffic management improvements on the A38 Trunk Road and 220ha of open space.*

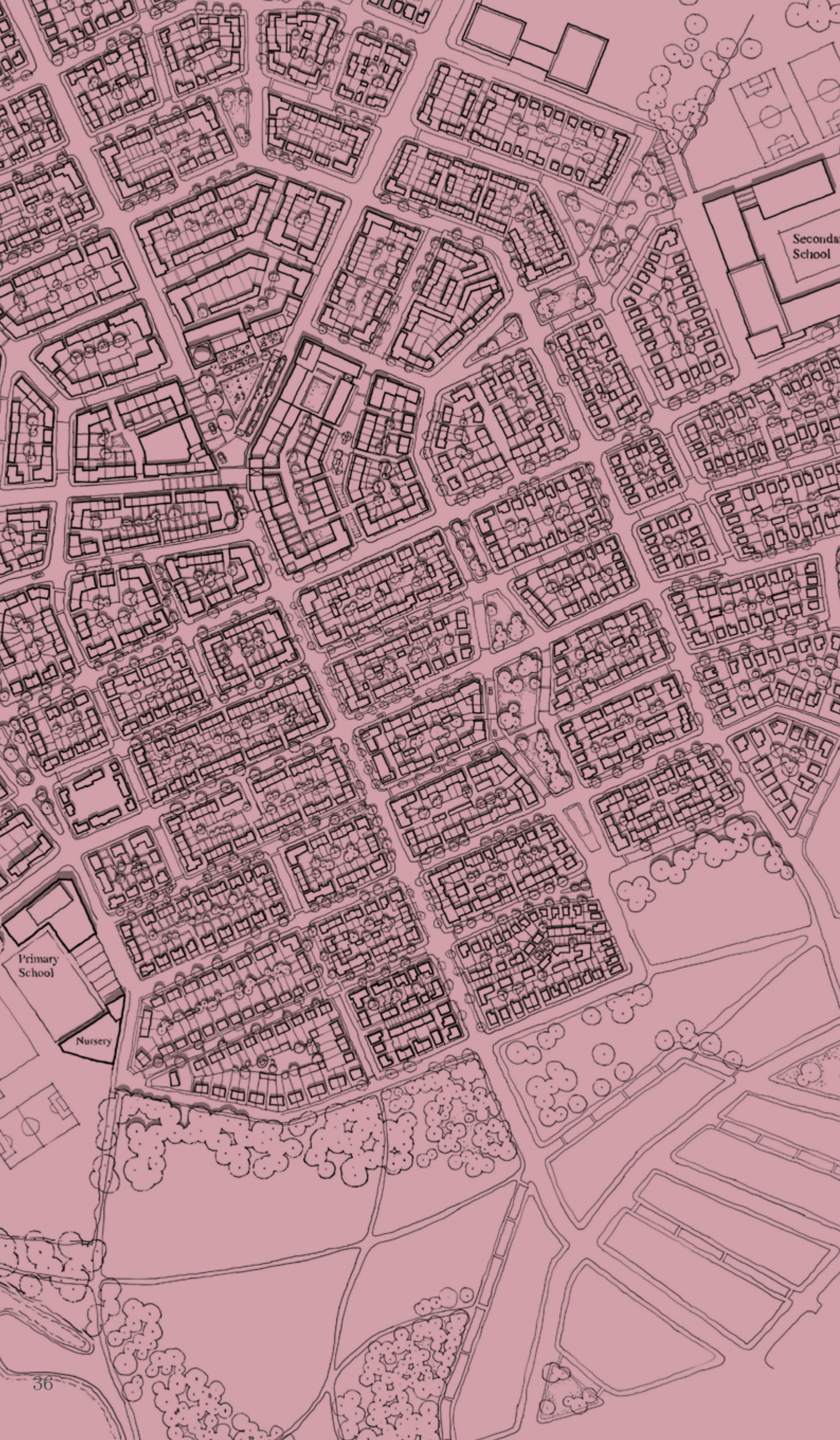
3. Will not be car-dependent: *Brookhay will be so well connected by train and by pedestrian and cycle links that it will be possible to live there without a car. Even for those with a car the scheme will achieve a modal shift from private car use to other forms of transport.*

4. Will offer a social contract to existing and new residents: *Brookhay will offer a social contract to both new residents and communities in the surrounding area. This will undertake to fully involve them in the design of the scheme, to minimise its impact existing views, and make available an acre of public open space for every acre developed. The pledge will also give residents preferential access to the watersports facilities and the chance to invest in new shops and other community features.*

5. Monitor and publish its environmental impact: *Brookhay will set out clear long term goals for the energy performance, waste recycling, water usage and use of sustainable materials in the scheme and will monitor and report on these during the course of the development.*

6. Create a mechanism for long-term community management: *Brookhay will be handed over to a democratic, community-based management organisation on the completion of each phase. A ground rent on each of the plots will be used by this group to fund the management of the village and the development of the community.*





BROOKHAY

Part 4

Masterplan Development

BROOKHAY

4 ~ Masterplan Development

A ~ Brookhay Garden Village

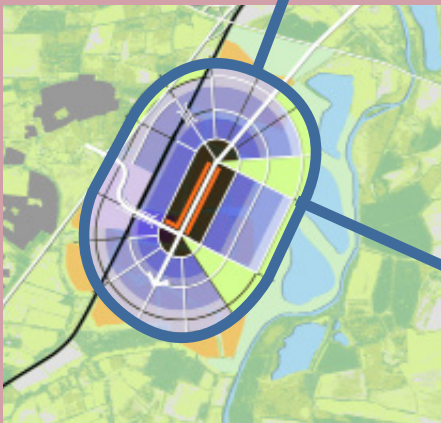
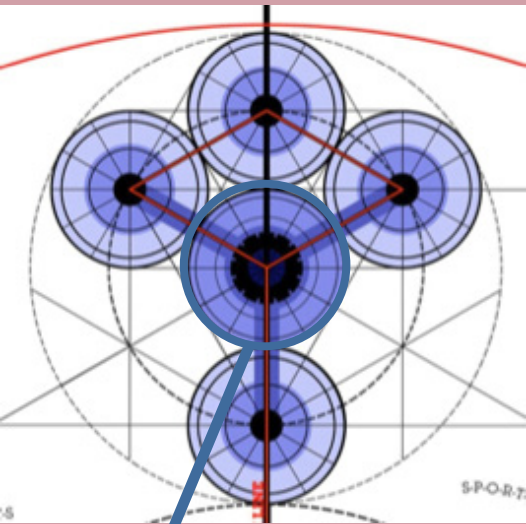
The masterplan has been developed by URBED and Mick Timpson Urban Design through a series of collaborative design sessions and meetings with the client and project team. The primary drivers for the masterplan were established early on in the process at a meeting of the entire project team which involved a site visit and workshop session. A great deal of background work had been undertaken prior to URBED's involvement in the project. This work set the context for the plan and the quantum of development. These parameters have been shaped into the plan in the following way.

URBED's Wolfson Prize essay created a "snowflake" diagram as a way of exploring the possibilities of sustainable city growth through urban extensions. Each of these urban extensions was made up of neighbourhoods of 4,500-6,000 homes within a radius of 800m, or a ten minute walk (opposite top right and centre). In URBED's submission these extensions were positioned within 10km of the city so as to be within a 20 minute tram ride. While Brookhay is further away from Birmingham, the rail links mean that it will be within 30 minutes of Birmingham by train, which is comparable given the size of Birmingham.

The starting point for the Garden Village masterplan was to take one of these 800m walkable neighbourhoods and transform it to fit the site. It has been elongated into a "lozenge" so that every home is within 800m of a high street which would become the focus for retail and commercial development, linked to the train station. The diagram locates higher density development towards the centre of the plan graduating out towards lower density development at the periphery. The bottom two plans show how the diagram was amended to create green fingers for drainage and to fit the shape of the site including the edge of the flood plane.

This diagram created a strong set of principles and a strategy which guided the detailed development of the masterplan as illustrated on the following pages.





BROOKHAY

4 ~ Masterplan Development

A ~ Brookhay Garden Village Continued

The masterplan has been developed as shown on the plans below. The first step (Plan 1) was to change the alignment of the central axis of the masterplan so that it followed the existing lanes on site. This is important because there are mature trees along these lanes which we can incorporate into the high street running through the site. Plan 2 then seeks to generate a new road layout with the clarity of the diagram based on these existing lanes. The aim has been to create a dumb-bell with a central axis between two public spaces that then form the focus for a series of radiating routes. The aim is to create a very clear layout that residents and visitors can understand and navigate easily. Plan 3 developed a series of open spaces relating to this street network. The aim was to make as much of the housing as possible feel connected to the Country Park (this idea has been developed further in subsequent iterations of the plan), Plan 4 starts to think about schools and local centres, with a focus at either end of the dumb-bell, a commercial focus

near the site entrance and station and a series of smaller centres. Initially the idea was that the village centre stretched along the central axis but we changed this in later plans to straddle the railway line. Plan 5 completes the picture by populating the plan with different housing densities, with the greatest densities being along the main roads. This layout means that the majority of the residents will be within 800m or a 10 minute walk of the main circulation spine and therefore facilities and public transport.



BROOKHAY

4 ~ Masterplan Development

B ~ Waterside

A similar process has been followed to create the Brookhay Waterside plan. Plan 1 below shows the starting point for the plan. This is based on an improved junction of the A38. The grey area shows the developable land based on the extent of the flood plain. The green areas within the site relate to archaeological sites. Our starting point was the idea of a spine running through the National Memorial Arboretum (Plan 2). This is partly symbolic because access to the arboretum is restricted. However we wanted to link to the two sites together and the axis helps structure the site. This axis terminates at the two henges and Plan 3 shows an idea for structuring the site around the 'rays' of the sunburst henge. Plan 4 shows the location of a new station set on a station square. This plan shows an axis from this square to the site entrance. Plan 5 completes the picture with commercial development in purple populating the structure and housing on the fringe to the south. The former gravel workings

to the east of the railway are planned to be a watersports centre with a 2 Km long lake.

The plan as it has developed has retained the idea of the axis and the central role of the two henges. It has also retained the station square and the central avenue to this from the site entrance. However the layout has evolved to meet the needs of the commercial development and the housing to the south has become a separate neighbourhood.



BROOKHAY

4 ~ Masterplan Development

C ~ Making the Connections



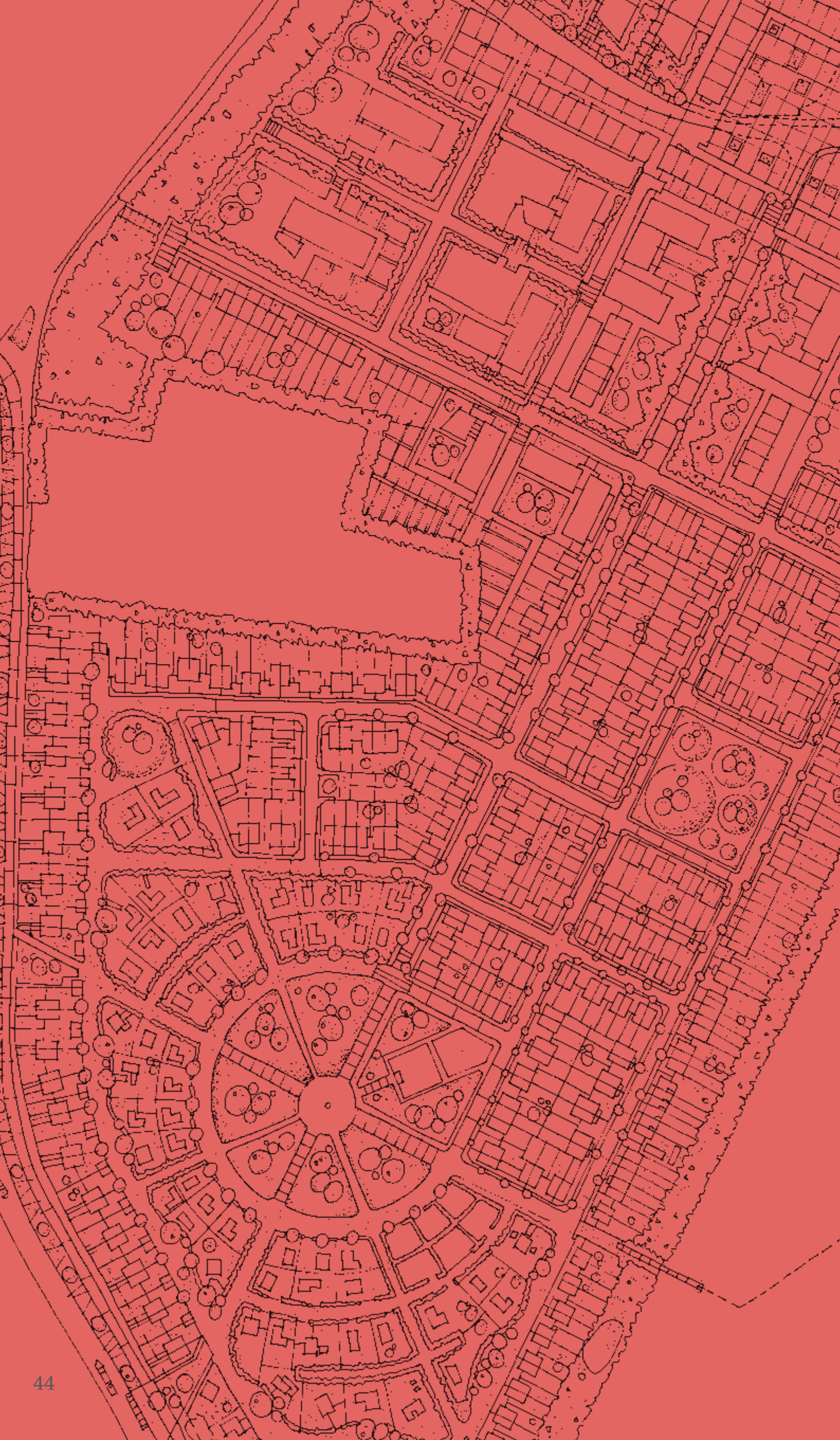


Connectivity between the two portions of the site was a key element of the masterplan development. The masterplan seeks to link the two portions of the site via a wide range of sustainable transport options.

Rail: Links are made between the two stations at Brookhay Garden Village and Brookhay Waterside

Bus: A bus route will connect the two halves of the site- the exact route has not been developed yet so the diagram is purely illustrative.

Walking and Cycling: Walking and cycling routes will link the two portions of the site along the riverside, utilising pre-existing routes. It may be possible to provide walking and cycling routes through the National Memorial Arboretum during opening hours.



BROOKHAY

Part 5

Brookhay Garden Village Illustrative Masterplan

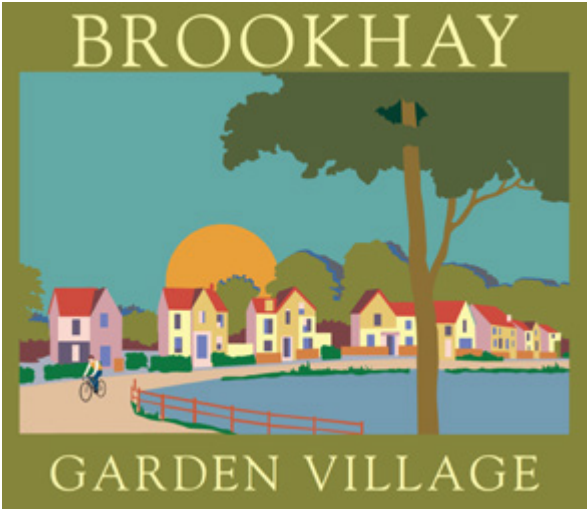




BROOKHAY

5 ~ Garden Village Masterplan

A ~ Access and Connectivity



The diagram opposite shows the hierarchy of streets and spaces within the proposed development. The main street runs through the spine of the development north to south with another main street making the connection over the railway track to the west and out onto the A38. These streets form the primary vehicular access through the site. Secondary streets link the neighbourhoods, the centre and public spaces.

The local streets and home zone areas provide connectivity within neighbourhoods and will carry much lower levels of vehicular activity. Home Zones are areas of shared surface designed to meet the needs of pedestrian and cyclists over those of motorists. The spaces within Home Zones are not



strongly divided between exclusively pedestrian and traffic areas.










The masterplan for Brookhay seeks to put pedestrians and cyclists at the top of the user hierarchy with a high quality pedestrian and cyclist environment provided throughout the site. Residents will be able to access shops, schools and other facilities comfortably on foot or by cycle. Routes through the development will connect out to walking and cycling routes around the periphery, particularly through the green wedges out to the Country Park. Public open spaces within the neighbourhoods provide opportunities for interaction with neighbours.

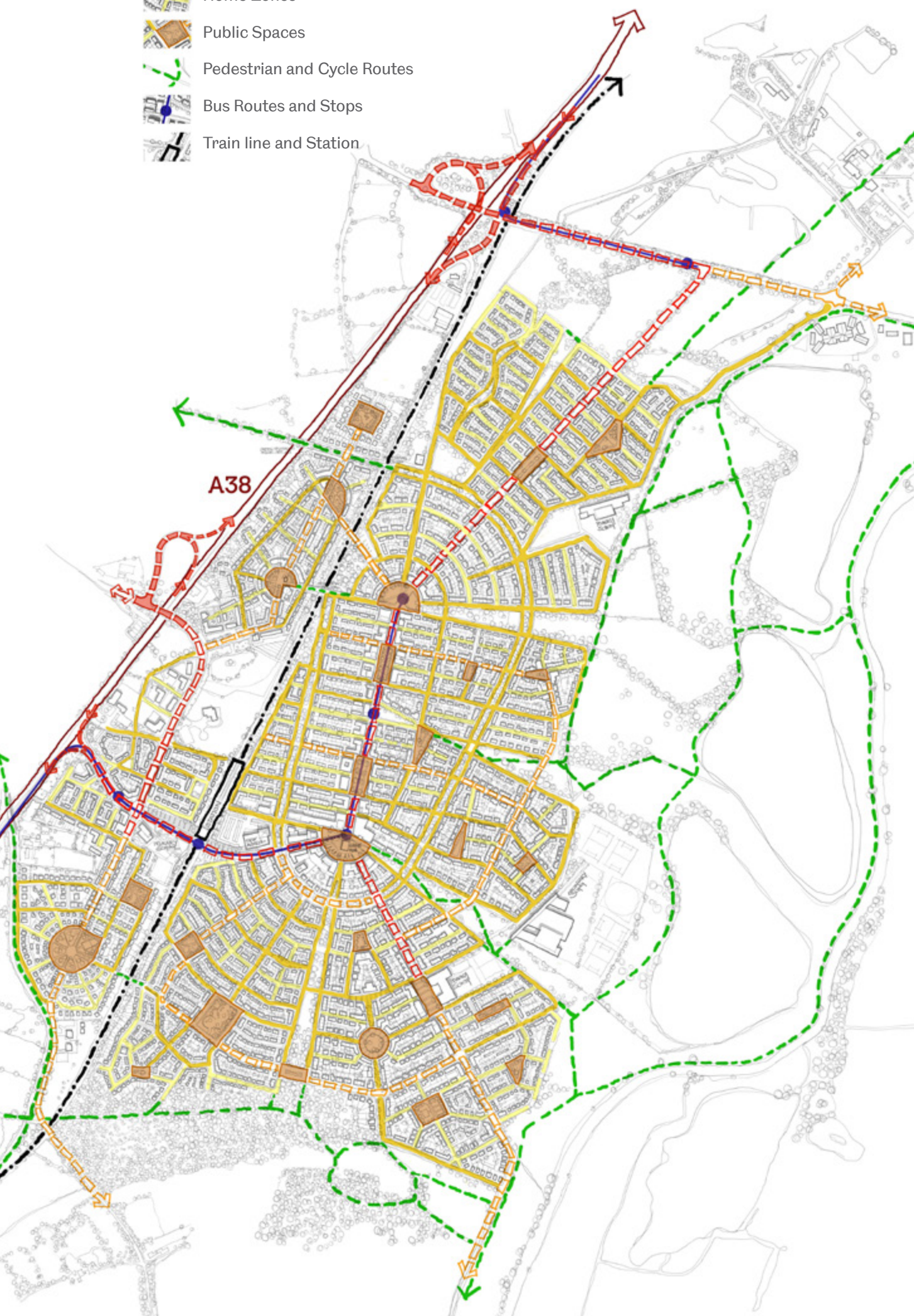
The train station is located close to the village centre and provides connectivity to the northern site, Birmingham and the surrounding area. Station facilities would include a bus stop, cycle parking and car parking allowing the station to be accessed by multiple transport modes.

Bus stops are located along the high street providing connectivity from the north of the site to the main centre and train station. This bus route will also connect through to the northern site allowing access to the commercial and employment uses, train station and leisure activities.

The plan includes a possible five bridges over the railway; Two road bridges and three pedestrian bridges as well as two pedestrian bridges over the A38. These will ensure that the scheme provides good connections both internally and to the existing villages. The main road bridge will be provided in Phase 1. However after this, the bridges will be developed with the adjacent development parcel to the east of the railway in the later phases. The bridges are subject to agreement from Network Rail and the plan would need to be amended if this agreement were not forthcoming for all these bridges.



-  Junction Improvements
-  High Streets
-  Secondary Streets
-  Local Streets
-  Home Zones
-  Public Spaces
-  Pedestrian and Cycle Routes
-  Bus Routes and Stops
-  Train line and Station



BROOKHAY

5 ~ Garden Village Masterplan

B ~ Housing



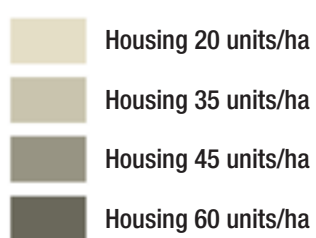
In keeping with the concept of the garden village the majority of the housing provided will be of a medium to low density, however some higher density housing is needed to create form and structure within key parts of the development, particularly within the centres and at key nodes. Generally the density of housing within the site is higher towards the centre (around the high street and the train station) and graduates out to lower density housing towards the periphery. The strong grid structure breaks down towards the periphery resulting in informal, lower density layouts where the edge of the site meets the surrounding countryside. In particular the southern border of the site, which fronts onto the ancient woodlands of Brookhay Wood and Wetleyhay Wood will be of a very low density and will include higher levels of tree planting to soften the edge.

The higher density housing within the context of this scheme does not denote the kind of tower blocks associated with urban high density housing. The highest density within Brookhay Garden Village will be around 60 units per hectare and is likely to comprise townhouses of around three storeys plus some apartments with retail and commercial uses on the ground floor. These taller buildings will frame the high street and define the character of and local centres with a strong structure.

Surrounding the areas of higher density housing will be medium density housing at around 45 units per hectare. This will likely comprise some terraced housing combined with smaller detached/semi detached properties. As can be seen from the diagram on the opposite page this medium density housing clusters around the high street, and local centres creating a critical mass of users for the shops and services located within them.

Towards the periphery of the neighbourhoods the density becomes lower as the interface between the urban form and the surrounding countryside is reached. In these areas housing will be at a density of between 20 -35 dwellings per hectare. This affords space for larger detached properties set within generous plots. The grid structure is broken down into a more organic layout with access routes taking on a “rural lane” character. Properties at the southern boundary near the buffer with the ancient woodland will be at a very low density forming discreet woodland “hamlets”.





BROOKHAY

5 ~ Garden Village Masterplan

C ~ Schools



A new settlement of up to 7500 homes creates significant demand for educational facilities. Rather than expanding the current local offering schools are located within the development contributing to the creation of a functioning community. Three primary schools would be provided as part of the scheme creating around 1800 school places. A secondary school would create up to 2100 school places and could accept pupils both from within the site and from the surrounding villages of Alrewas and Fradley.

The schools can be comfortably accessed from the surrounding neighbourhoods on foot or by bike. Attractive pedestrian and cycle routes link the schools to the surrounding neighbourhoods, local centres, public open space and to the Country Park. This encourages children and parents to walk to school rather than travelling by car.

The schools are located close to publicly accessible green space, playing fields and leisure facilities. These facilities could be utilised by both the schools and the wider community. Two of the primary schools and the secondary school are adjacent to the Country Park allowing opportunities for trips/ learning experiences within the park. Allotments could be located close to or within the school grounds to encourage community growing schemes. The remaining primary school is located close to the train station, centre and main supermarket.

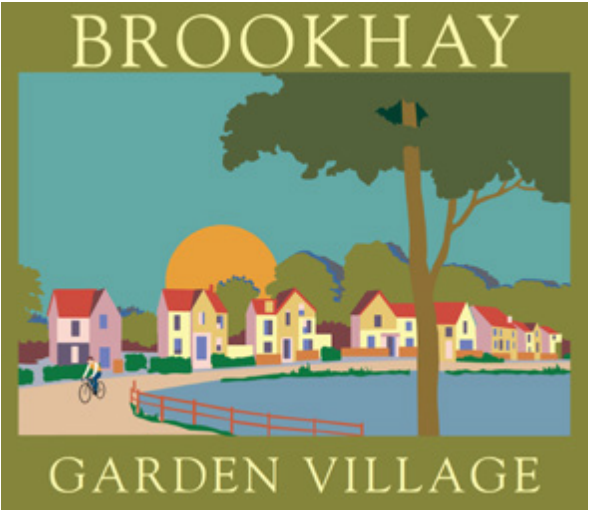




BROOKHAY

5 ~ Garden Village Masterplan

D ~ Shops and Facilities



The main focus of shops and facilities within Brookhay Garden Village is the village centre at the southern end of the high street. Close to the train station and with good public transport links to the rest of the site and the surrounding area this is the heart of the new settlement. The centre includes a large supermarket and other facilities such as health centres, nurseries, shops, restaurants and bars.

The central spine of the high street runs from the centre up to a smaller local centre to the north. It is not envisaged that Brookhay Garden Village could support retail uses along the entire length of the high street. Instead townhouses and apartments line the high street with flexible ground floor units which could house retail or office uses. Each neighbourhood is within comfortable walking or cycling distance of a local centre. These smaller clusters of shops and services could include convenience food retailers and alongside community facilities create central “hubs” for each of the neighbourhoods identified in the following section.

At the eastern edge of the site, close to the A38 corridor is a parcel of land which feels disconnected from the rest of the site due to ownership boundaries and as such is less suited to residential development. Instead this is highlighted as an area of B1 business space which could house offices, research and development facilities or light industry. This capitalises on the visibility of the road frontage on the A38 and good transport connections to the wider area.



- Business Space (B1)
- Ground Floor Commercial/Leisure/Retail
- Community Space
- Retail Space



BROOKHAY

5 ~ Garden Village Masterplan

E ~ Neighbourhood and Identity



Brookhay Garden Village has been designed to create a place of sustainability, health and well being. The masterplan is designed around the concept of walkable neighbourhoods where community facilities, shops, green space and transport links are focused around centres that can be easily accessed on foot or by bike via pleasant walking and cycling routes

Brookhay Garden Village roughly divides into six neighbourhoods arranged around the

village centre. The diagram opposite shows the arrangement of the six neighbourhoods and centre highlighting the key buildings and frontages. The village centre is the focus of the development containing the centre, train station, large supermarket and other facilities. The village centre area creates a strong route from the train station, through the central retail area out towards the Country Park and has a more urban character with higher density and increased building heights.

The surrounding neighbourhoods also have their own respective focus or centre whether this be a community building, small local centre, school or public open space. A distinct identity will be created for each neighbourhood through the use of a design code. This would fix certain design elements within each neighbourhood as well as creating a set of rules to govern the design of the development as a whole. Examples of elements within the design that can be coded include building heights, street character, key views or vistas, landscape features, building materials and architectural detailing.

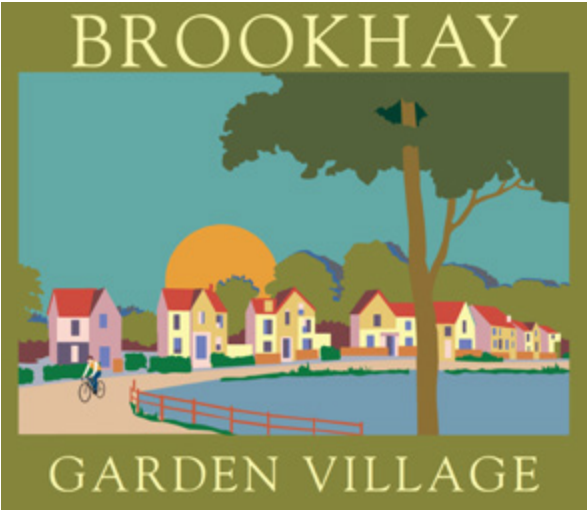




BROOKHAY

5 ~ Garden Village Masterplan

F ~ Parks and Gardens



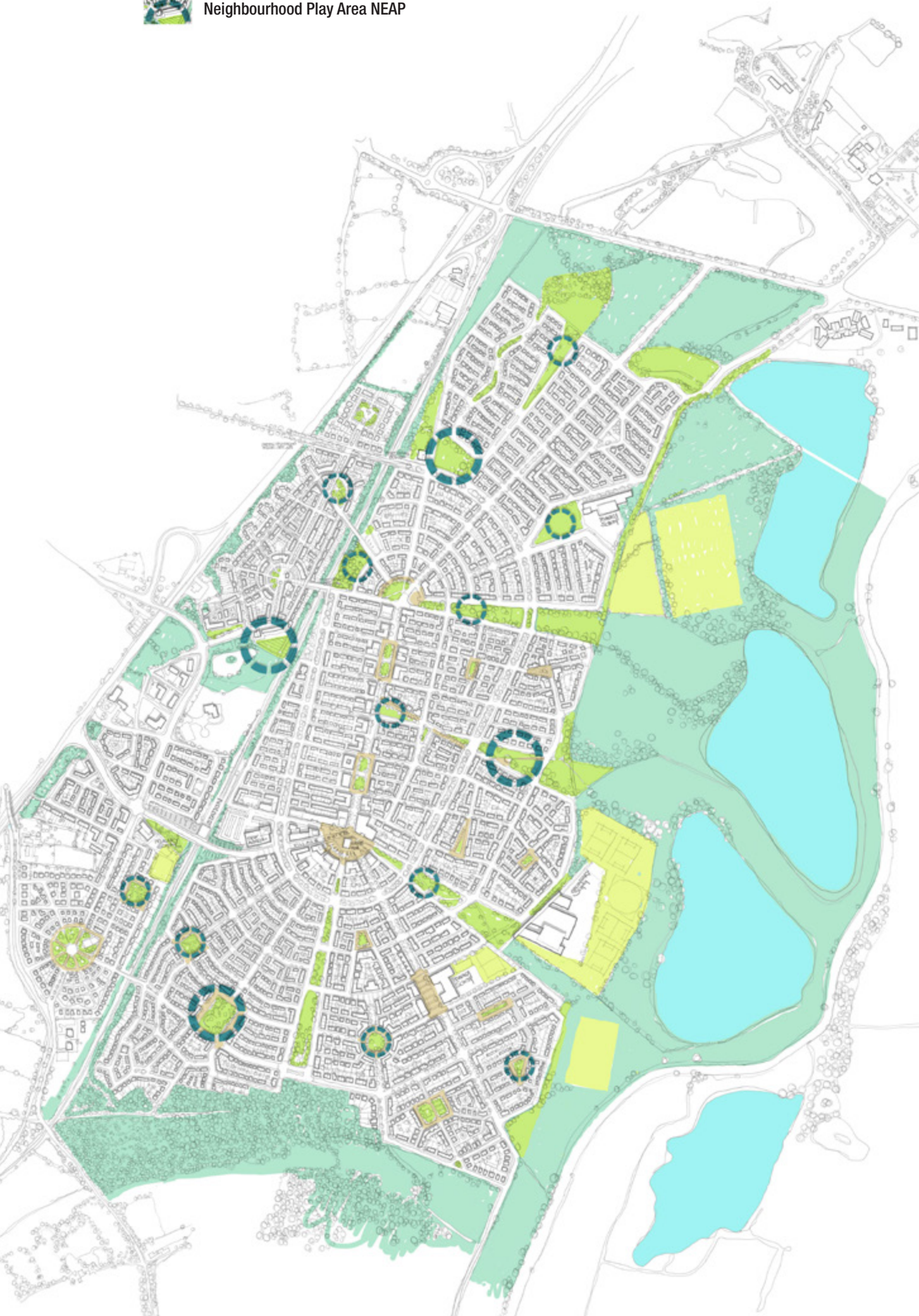
Over half of the Garden Village is allocated as green open space in line with the principles set out in the Brookhay Charter. The eastern portion of the site would comprise a 173 hectare Country Park. This would utilise the waterbodies created by the mineral workings creating opportunities to increase biodiversity within the site. The park would include walking and cycling routes linking to the surrounding area.

The greenspace is the garden in which the village is set. Green fingers extend from the Country Park, into the settlement, serving the dual purpose of providing sustainable urban drainage and connecting the centre of the community to the surrounding countryside. These green fingers connect to a network of green space throughout the site: tree lined avenues, pocket parks, larger more formalised areas of landscaping, playgrounds and gardens.

The Country Park connects into the wider network of green space with links to the National Memorial Arboretum to the north of the site and the Tame and Trent River Valley.



-  Informal Open Space/Country Park
-  Formal Open Space
-  Sports Grounds
-  Hard Public Space
-  Local Equipped Play Area LEAP
-  Neighbourhood Play Area NEAP



BROOKHAY

5 ~ Garden Village Masterplan

G ~ Development areas and Phasing

The overall yield of the development is set out on the table below. A developable area of 276ha out of total site area of 450ha. The balance of the space would be a Country Park covering 173ha. The table below shows the landuse budget within the developable area. This includes 132ha of developable housing plots to which 3 densities have been applied. There is a small amount of mixed use retailing (with housing on the upper floors) the balance of the site being used for schools, play and recreational space within the housing and roads.

It should be noted that housing densities are measured to the centre line of the roads whereas the plot areas are measured from the back of the pavement, hence the difference between columns 1 and 2 below.

This development has been phased as shown on the plan opposite. This phasing is complex and is based partly on the scheduling of the gravel works on the site that will be starting in the south and moving northwards. The phasing is also designed to allow the station to be built as soon as possible. This will proceed as follows:

Phase 1: The first phase of the development will involve the land to the west of the railway line and will involve just over 1,500 homes. It has been split into three sub phases:

- a. Phase 1a includes the improvements to the junction on the A38 together with a new primary school, the station and the road bridge

over the railway. All of this is necessary before any substantial housing development can take place. Phase 1a includes 574 homes that would be developed in parallel with these other works but couldn't be occupied until the works were finished.

- b. Phase 1b develops the land to the south of the improved junction as well as the supermarket to the east of the railway as an anchor for the new village centre. This also includes the new square with a marketing suite in its centre (that would later become a community building or market hall).
- c. Phase 1c is the final part of the land to the east of the railway.

Phases 2-8: The remaining phases of the scheme run from south to north through the scheme following the completion of the gravel extraction. The second junior school comes in Phase 3 at the end of which the development would include just under 4,000 units. The secondary school is currently in Phase 5 but could be brought into Phase 3 if necessary.

The one issue that may need to be addressed is the road link to the A513 to the north. This will be required to spread the traffic load between the two junctions and will need to be put in as soon as the gravel workings allow. It is also likely that construction traffic could be brought in from this direction to avoid conflict with resident's access.

		Plot area ha	Housing Density Area ha	Density u/ha	Units
ALL	HOUSING - HIGH	7.09	12.51		
	HOUSING - MEDIUM	60.31	89.31		
	HOUSING - LOW	59.01	87.24		
	OPEN SPACE	38.73			
	EDUCATION	17.46			
	COMMERCIAL	4.97			
	ROAD	88.9			
	COMMUNITY	0.23			
TOTAL		276.7	189.06		0

		Plot area ha	Housing Density Area ha	Density u/ha	Units
1A	HOUSING - HIGH	0.4	0.76		
	HOUSING - MEDIUM	2.97	5.42		
	HOUSING - LOW	0.69	0.85		
	OPEN SPACE	2.4			
	EDUCATION	0			
	COMMERCIAL	0			
	ROAD	7.87			
	COMMUNITY	0			
TOTAL		14.33	7.03		0
14.33		ha			

		Plot area ha	Housing Density Area ha	Density u/ha	Units
1B	HOUSING - HIGH	1.2	1.65		
	HOUSING - MEDIUM	6.97	10.51		
	HOUSING - LOW	3.37	4.65		
	OPEN SPACE	3.19			
	EDUCATION	1.65			
	COMMERCIAL	1.65			
	ROAD	8.5			
	COMMUNITY	0.23			
TOTAL		26.76	16.81		0
26.76		ha			

		Plot area ha	Housing Density Area ha	Density u/ha	Units
1C	HOUSING - HIGH	0.06	0.1		
	HOUSING - MEDIUM	2.68	3.7		
	HOUSING - LOW	6.92	9.73		
	OPEN SPACE	0.35			
	EDUCATION	0			
	COMMERCIAL	1.97			
	ROAD	4.88			
	COMMUNITY	0			
TOTAL		16.86	13.53		0
16.86		ha			

		Plot area ha	Housing Density Area ha	Density u/ha	Units
2	HOUSING - HIGH	0.69	0.91		
	HOUSING - MEDIUM	7.54	12.06		
	HOUSING - LOW	10.12	14.85		
	OPEN SPACE	4.61			
	EDUCATION	0			
	COMMERCIAL	0.81			
	ROAD	10.28			
	COMMUNITY	0			
TOTAL		34.05	27.82		0
34.05		ha			

		Plot area ha	Housing Density Area ha	Density u/ha	Units
3	HOUSING - HIGH	0.75	2.24		
	HOUSING - MEDIUM	7.78	10.53		
	HOUSING - LOW	14.98	22.38		
	OPEN SPACE	11.07			
	EDUCATION	2.13			
	COMMERCIAL	0.31			
	ROAD	15.44			
	COMMUNITY	0			
TOTAL		52.46	35.15		0
52.46		ha			

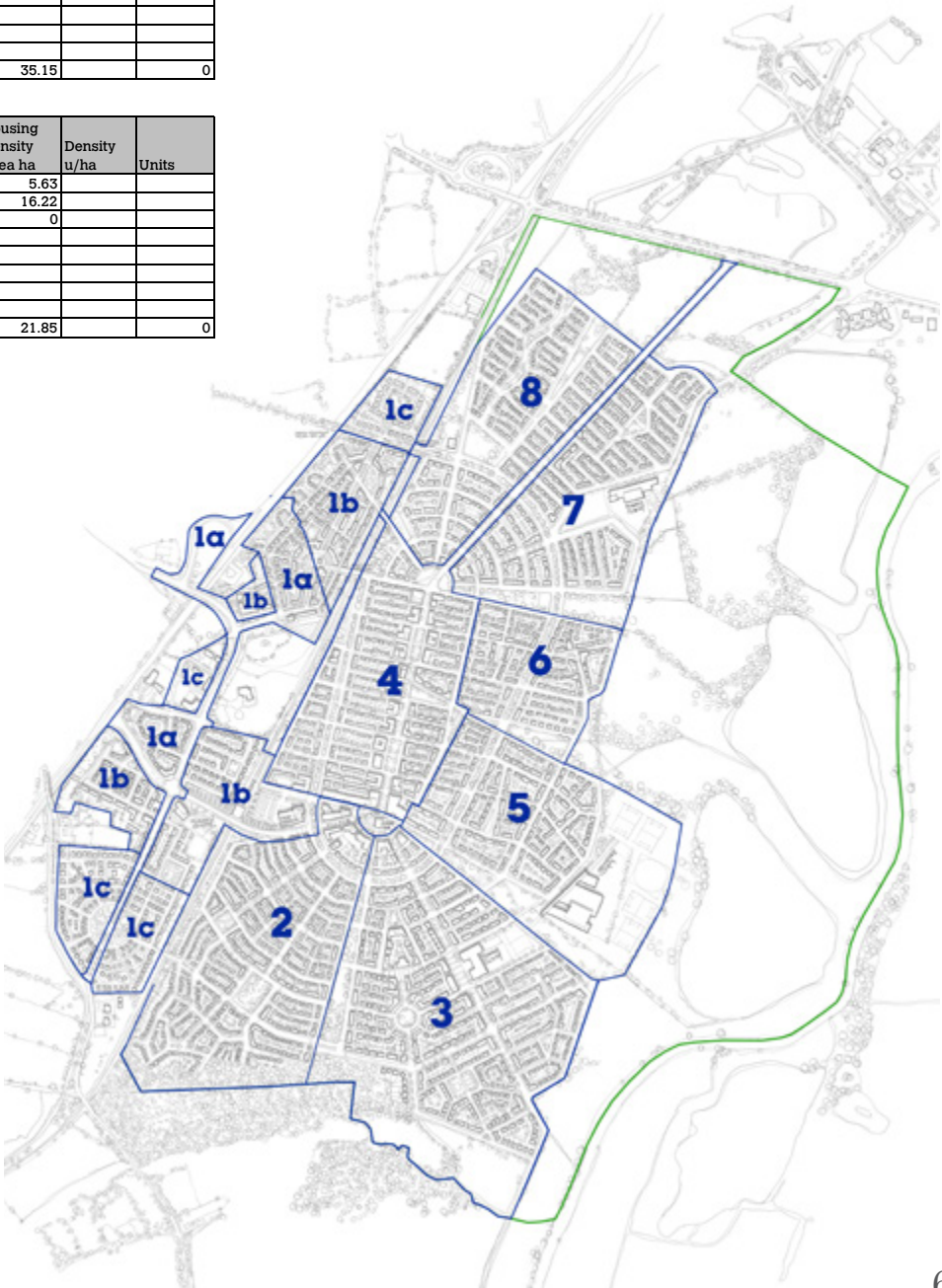
		Plot area ha	Housing Density Area ha	Density u/ha	Units
4	HOUSING - HIGH	3.21	5.63		
	HOUSING - MEDIUM	11.44	16.22		
	HOUSING - LOW	0	0		
	OPEN SPACE	2.57			
	EDUCATION	0			
	COMMERCIAL	0.23			
	ROAD	13.56			
	COMMUNITY	0			
TOTAL		31.01	21.85		0
31.01		ha			

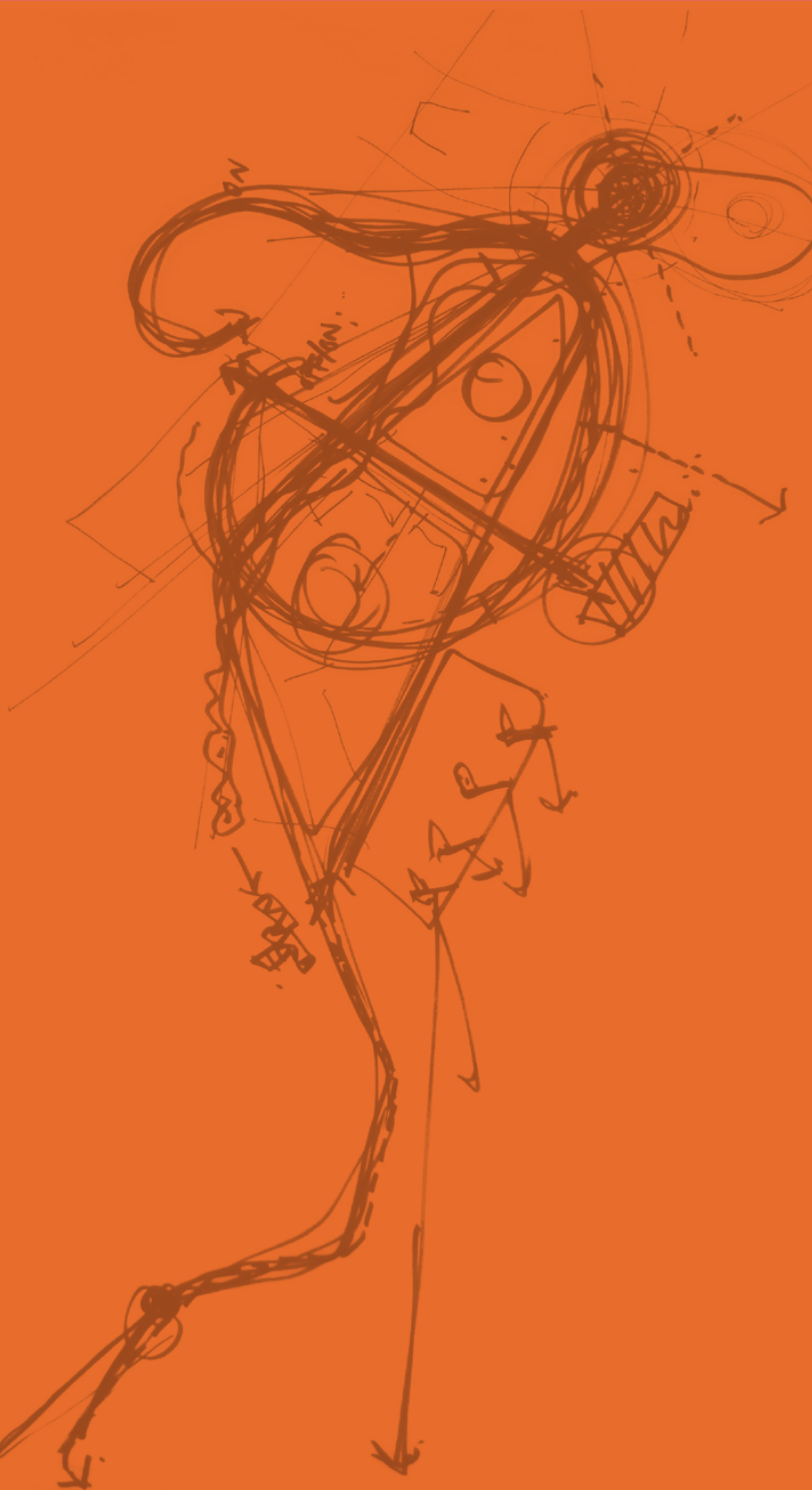
		Plot area ha	Housing Density Area ha	Density u/ha	Units
5	HOUSING - HIGH	0.16	0.2		
	HOUSING - MEDIUM	6.63	9.51		
	HOUSING - LOW	4.53	6.49		
	OPEN SPACE	4.16			
	EDUCATION	11.23			
	COMMERCIAL	0			
	ROAD	6.09			
	COMMUNITY	0			
TOTAL		32.8	16.2		0
32.8		ha			

		Plot area ha	Housing Density Area ha	Density u/ha	Units
6	HOUSING - HIGH	0	0		
	HOUSING - MEDIUM	5.36	7.83		
	HOUSING - LOW	2.66	4.03		
	OPEN SPACE	1			
	EDUCATION	0			
	COMMERCIAL	0			
	ROAD	5			
	COMMUNITY	0			
TOTAL		14.02	11.86		0
14.02		ha			

		Plot area ha	Housing Density Area ha	Density u/ha	Units
7	HOUSING - HIGH	0.28	0.43		
	HOUSING - MEDIUM	4.41	6.76		
	HOUSING - LOW	8	11.91		
	OPEN SPACE	4.8			
	EDUCATION	2.45			
	COMMERCIAL	0			
	ROAD	8.22			
	COMMUNITY	0			
TOTAL		28.16	19.1		0
28.16		ha			

		Plot area ha	Housing Density Area ha	Density u/ha	Units
8	HOUSING - HIGH	0.34	0.59		
	HOUSING - MEDIUM	4.53	6.77		
	HOUSING - LOW	7.74	12.35		
	OPEN SPACE	4.58			
	EDUCATION	0			
	COMMERCIAL	0			
	ROAD	9.06			
	COMMUNITY	0			
TOTAL		26.25	19.71		0
26.25		ha			



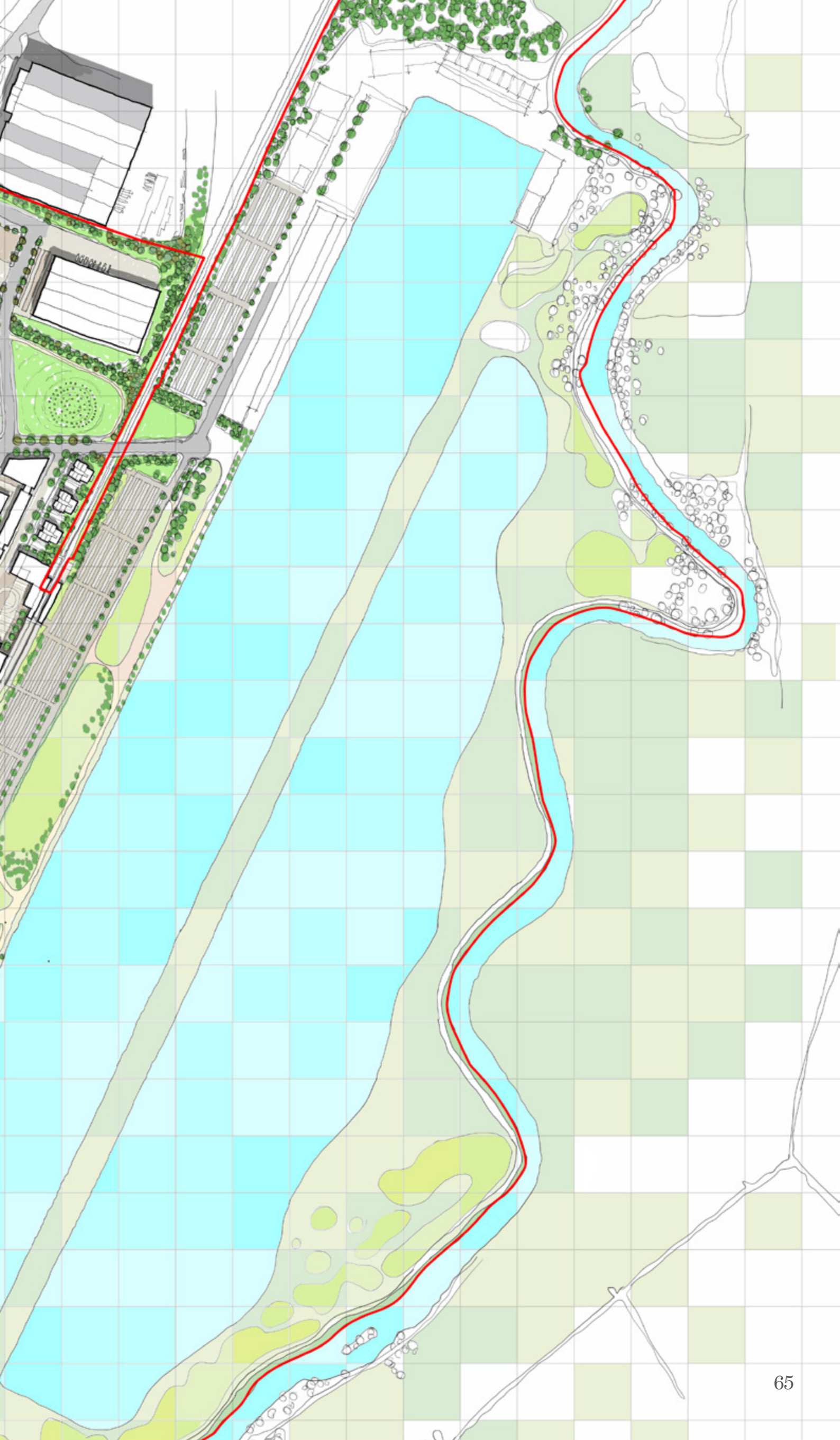


BROOKHAY

Part 6

Brookhay Waterside Illustrative Masterplan

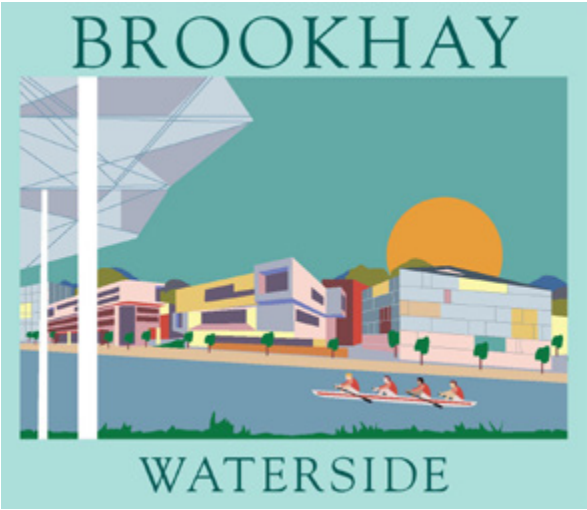




BROOKHAY

6 ~ Waterside Masterplan

A ~ Character and Identity



Business parks have traditionally been suburban corridors on the outskirts of towns, accessible only by car. Brookhay Waterside seeks to engender a completely distinct character that will attract residents as well as businesses and create a collaborative and attractive environment in which to work.

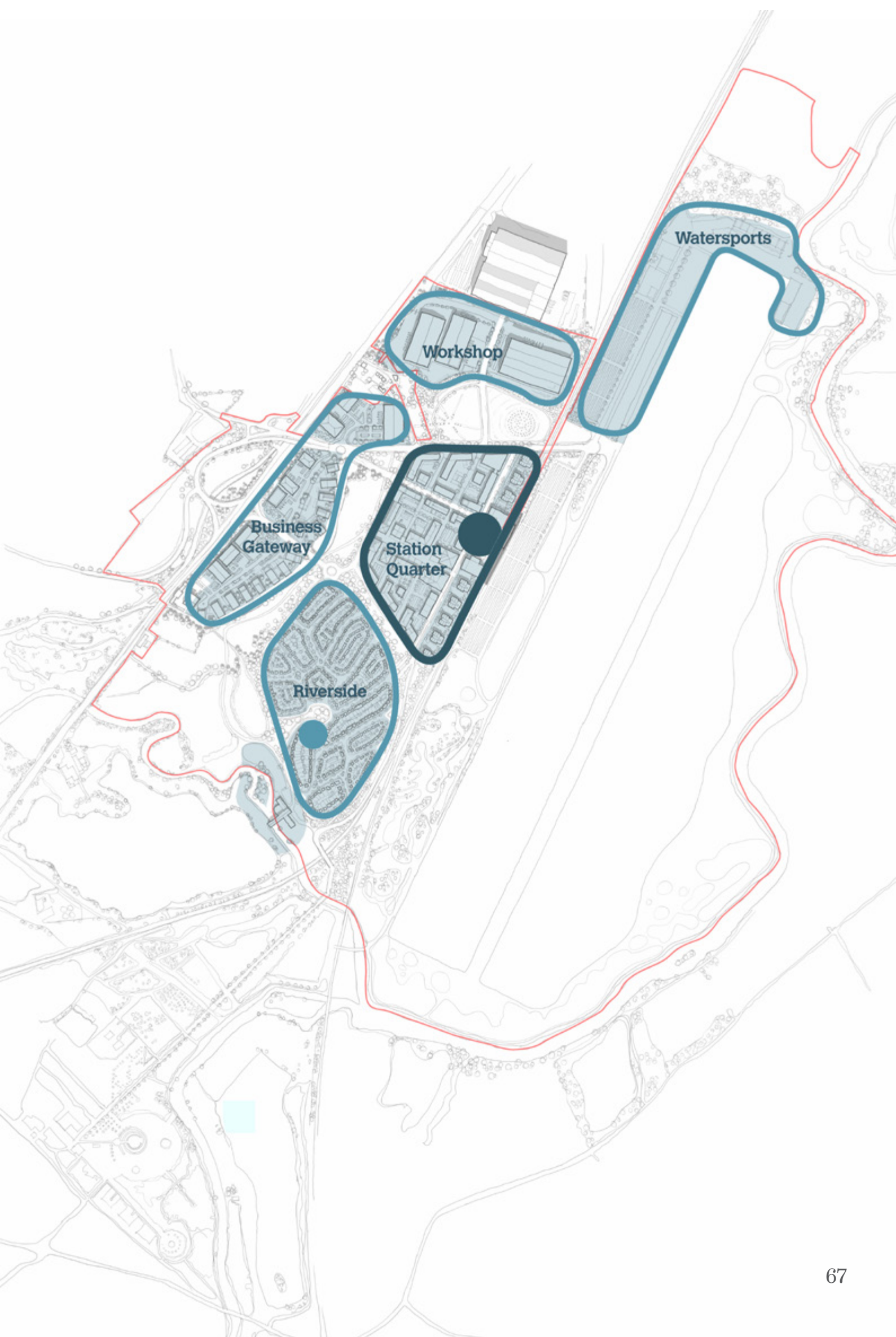
The character of Waterside is inspired by developments such as Chiswick Park in London. Chiswick Park is accessible by non-car modes with bus, tube and rail connections. As well as business uses there are large areas of public open space as

well as bars, shops and restaurants creating an attractive place where people want to work.

Brookhay Waterside comprises 5 distinct character areas arranged around water bodies and green space. To the north of the site the “Watersports” area will have a sports and activity focus with the Watersports Centre and associated leisure facilities wrapped around a 2km long rowing lake.

The “Workshop” area will include large B2 and B8 industrial and distribution units. These will front onto a wide landscaped area preserving and enhancing the location of the two henges. The “Business Gateway” will be the main entrance to the site from the road. This area will capitalise on its visibility from the A38 corridor and will comprise a flexible mix of smaller scale industrial and distribution units fronting onto water. The “Station Quarter” will be a mixed use area focused around the train station comprising light high tech industry, manufacturing and offices, combined with apartments, hotels and retail. “Riverside” will be an area of high quality, low density residential development based on Frederick Law Olmstead’s designs for Riverside, Illinois.

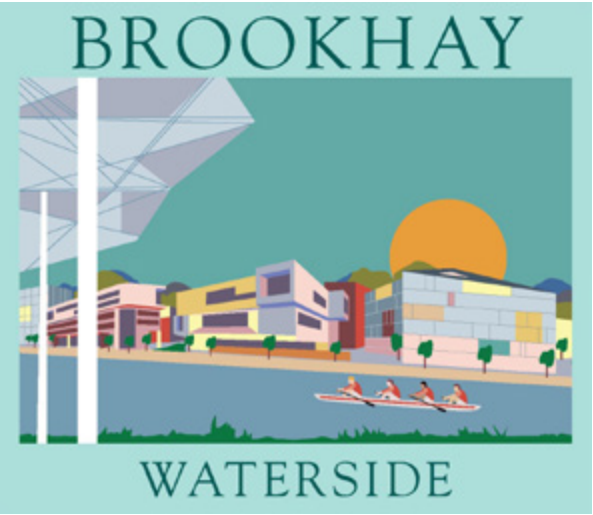




BROOKHAY

6 ~ Waterside Masterplan

B ~ Access and Connectivity



The primary access point into Brookhay Waterside is from the improved junction off the A38 corridor. High street routes shown in red are the primary routes through the site and will carry the majority of traffic. High street routes provide access to the Watersports Centre and business uses within the site. Riverside is also be accessed off the high street. The streets within Riverside are local streets and home zones creating an environment which caters to pedestrians and cyclists over motorists.

Secondary routes provide key linkages but will carry lower volumes of traffic. These routes link the business gateway, workshop area, station quarter and watersports area to the high street. Local streets provide the internal connectivity and have a different character, carrying lower volumes










of traffic and prioritising pedestrians and cyclists.

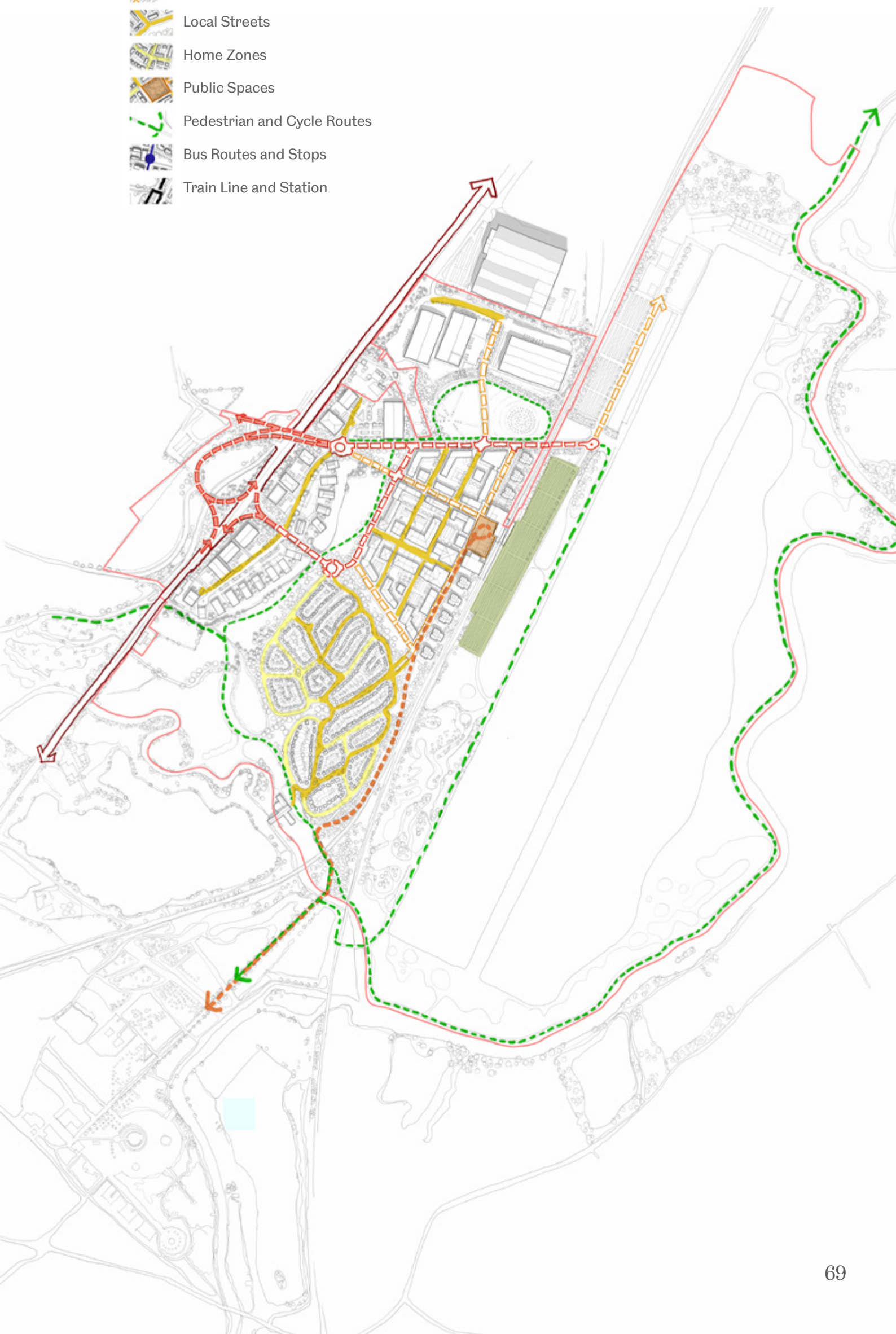
Although Waterside has a more commercial character than Brookhay Garden Village pedestrians and cyclists still take priority. Walking and cycling routes permeate the site and extend out to connect with the riverside pathways to the west. These also provide a connection to the southern site past the National Memorial Arboretum.

There are several bus stops within the site, including one at the train station. The bus route will connect the northern site with the southern site allowing residents to live in Brookhay Garden Village and work in Brookhay Waterside. This also improves connectivity for visitors to the Watersports Centre allowing them access to visit the high street in Brookhay Garden Village.

The station will also provide up to 1000 parking spaces as part of a “park and ride” facility for local residents and commuters. This should encourage residents of Brookhay and the surrounding villages to travel to work by train, reducing the amount of traffic on the A38 corridor. The station will allow visitors from the surrounding areas and the wider country to access the Watersports Centre by rail and would also improve visitor access to the National Memorial Arboretum.



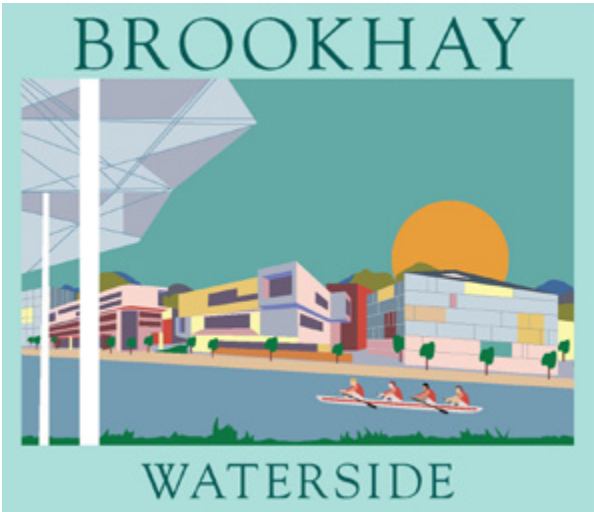
-  Junction Improvements
-  High Streets
-  Secondary Streets
-  Local Streets
-  Home Zones
-  Public Spaces
-  Pedestrian and Cycle Routes
-  Bus Routes and Stops
-  Train Line and Station



BROOKHAY

6 ~ Waterside Masterplan

C ~ Business Space






The proximity of the Watersports Centre elevates the site from a traditional business park giving it a distinct identity and creating a requirement for a more exciting and dynamic mix of uses.

The purple areas on the opposite plan comprise a mixture of general industrial (B2) and storage and distribution (B8) units. Adjacent to the northern boundary of the site Argos' 650,000 sq ft distribution centre dominates the view and as such the masterplan situates the largest units at the northernmost end of the site. Large units also front onto the western boundary to maximise visibility from the A38 corridor. Smaller units are positioned behind these, interfacing with water bodies and landscaped areas within the central

public open space. This green space provides a transitional area between the industrial and distribution uses and Riverside residential areas to the south.

The areas highlighted in green combine research and development (B1b) units with light industrial (B1c). This allows for businesses to develop products and potentially produce them in one location. Offices (B1) are also located within this mixed use area around the station. This combination of uses fosters the kind of cross sector and collaborative working highlighted earlier in this document. Areas of public open space and the retail and cafe's create "incidental" spaces where people can meet and interact in an informal environment. Pleasant walking and cycling routes provide connectivity within the site and allow for car free movement between units.



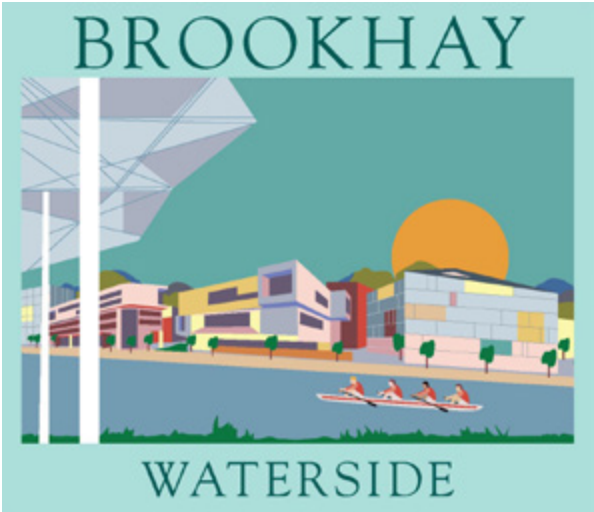
-  B2 and B8 Units
-  B1B and C Uses
-  B1 Offices



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6 ~ Waterside Masterplan

D ~ Leisure and Watersports





Large portions of the site at Brookhay Waterside has been or is currently being used for mineral working, primarily the extraction of gravel. Gravel extraction has created a series of lakes within the northern site. The lakes provide a unique opportunity to create a watersports leisure offer. As such a Watersports Centre is located at the north of the site and a National Angling Centre is located to the south.

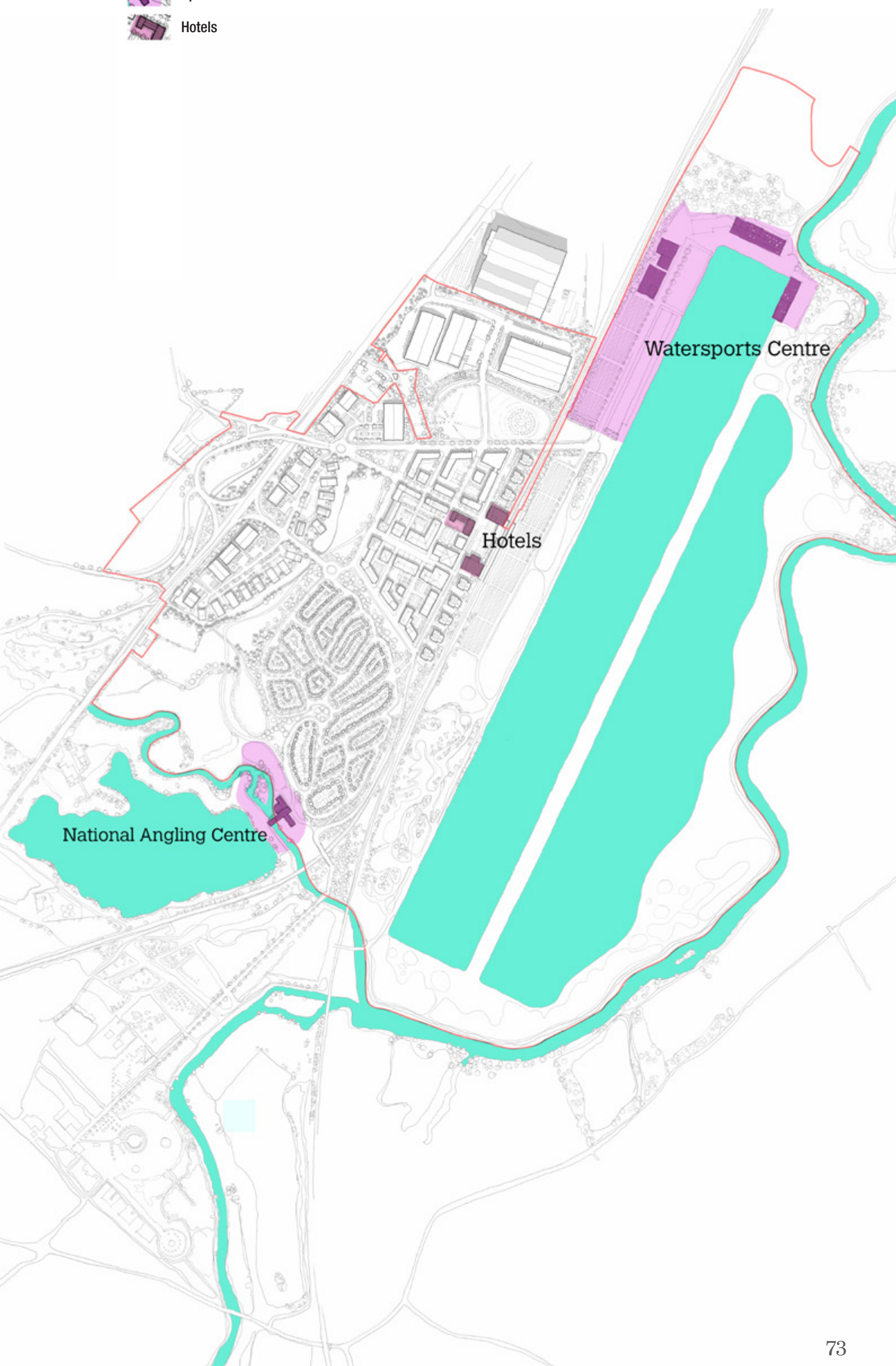
The existing series of pools on the site are combined to produce a 2km long competition standard rowing lake with a series of smaller water bodies that could be used for other

watersports and leisure activities. The facility has the potential to provide for a wider range of sports including open-water swimming, triathlon, sub-aqua, orienteering, cycling, jogging, fishing and adventure sports, inland beach and canoe trail/portage points, wildlife/bird-watching, and Country Park informal recreation.

The site would be easily accessible by rail from the rest of the UK. The large car park intended for the use of commuters during the week also provides ample parking for visitors and competitors during events. Hotels located next to the train station and car parking area provide accommodation not only for the Watersports Centre but could also be used by visitors and competitors from nearby St George's Park.



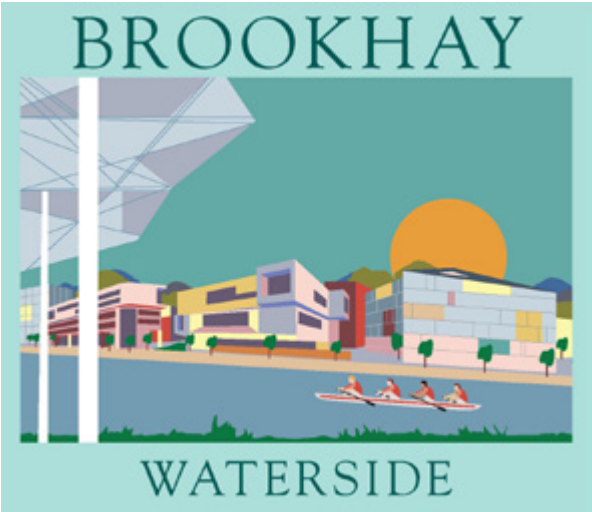
-  Sport and Leisure Uses
-  Hotels



BROOKHAY

6 ~ Waterside Masterplan

E ~ Housing



There are two distinct areas of housing within Brookhay Waterside. Riverside is a low density residential neighbourhood with an informal street arrangement and village character. The Station Quarter comprises higher density apartments arranged within a strong grid system and set within a mixed use context around the train station.

Up to 300 modern apartments could be located within the mixed use Station Quarter. The density of this area would be similar to that of the high street of Brookhay Garden Village, at around 60 units per hectare. These sit in close proximity to



the train station providing excellent sustainable transport options. The apartments have access to the Waterside facilities along with the shops, bars and employment facilities within the Quarter. The apartments have views out onto the rowing lakes and surrounding open space. They could provide accommodation for younger couples, professionals and for older people looking to downsize.

Brookhay Riverside includes larger dwellings set in generous plots towards the south of the site, next the River Trent. Housing in this area is at a much lower density of around 25 units per hectare. The neighbourhood could provide more expensive, “executive” housing and homes for larger families with children. The neighbourhood is surrounded by parkland and the character of the development reflects this setting with wide, curving tree lined streets and generous front gardens.

Although different in character both residential areas aim to create healthy, active communities by providing access to sports and leisure facilities, public open space and safe walking and cycling routes. The Station Quarter acts as the local centre for both residential neighbourhoods being within comfortable walking distance of both.





Riverside Housing 25u/ha



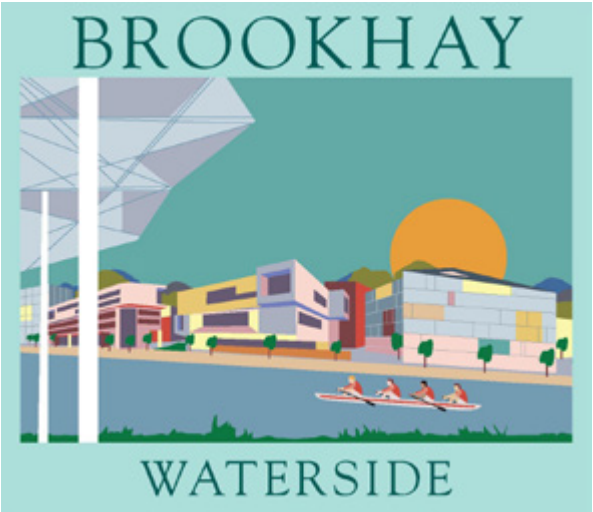
Apartments



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6 ~ Waterside Masterplan

F ~ Open Space






Open space is a key feature of Brookhay Waterside, setting it apart from a conventional business park and creating a place with a distinct character. The open space is focused around the rivers and waterbodies within the site and creates a relationship between the site and the wider landscape.

A sweeping area of formal open space creates a green route through the centre of the site acting as a buffer between the business uses to the west and the residential development of Riverside to the south. This green corridor links the informal open space surrounding the National Angling Centre to the south and the formal open space surrounding the two henges to the north. The formal open space to the north creates a defined setting for the two henges and links through to the Watersports Centre.

Informal open space is located around the National Angling Centre and between the Watersports Centre and the rail line. These spaces have a different character and capitalise on the waterbodies within the site. Here there is an opportunity to create a haven for wildlife with wetland areas. The formal and informal green space can be viewed as part of a wider network linking through to the Country Park at Brookhay Garden Village via the National Memorial Arboretum.



-  Formal Open Space
-  Country Park and Informal Open Space
-  Hard Landscape



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6 ~ Waterside Masterplan

G ~ Phasing and Development Yield

The total development area for Waterside is shown on the table below. This is constrained by the capacity of the road infrastructure rather than the size of the site. It includes 150,000m² of employment space, the majority of which will be B2 and B8 space (because it generates less traffic). There is a small amount of B1 space and B1c which covers research and development.

The largest land user is the Watersports Centre including, the lakes it covers 243ha. Smaller areas are allocated for housing, apartments and hotels giving a total of 800 residential units and 400 hotel rooms. Together with green space this adds up to the total site area of 397ha

The phasing on the development is anticipated to proceed as follows:

Phase 1: This includes the road junctions and a loop road into the site. This needs to happen before any development can take place.

Phase 2: This includes the station, the road bridge over the railway line and the Park and Ride

facility. This needs to go before the Brookhay Garden Village site can proceed beyond its Phase 1 because the Park and Ride is required to unlock the road capacity.

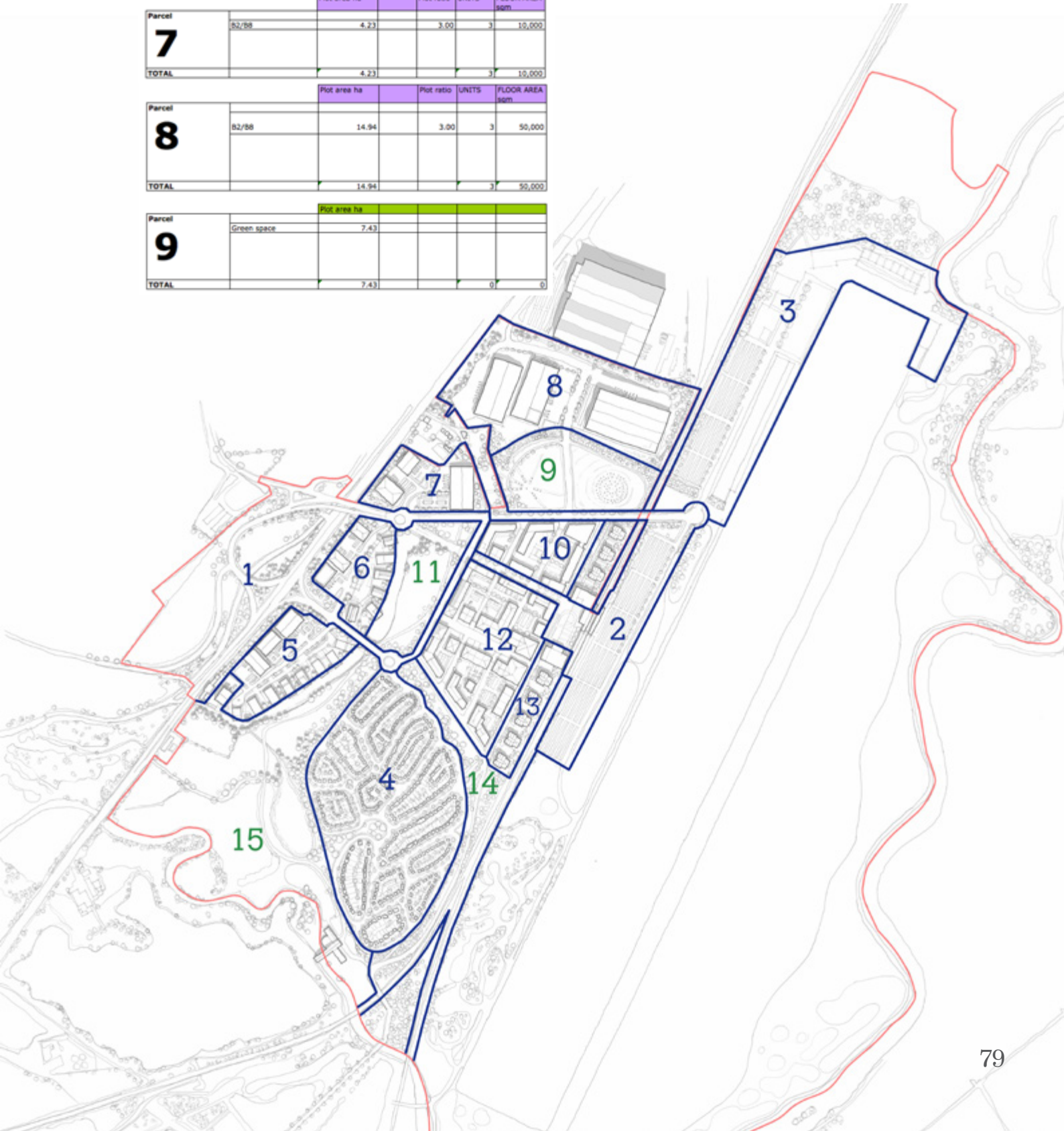
Further Phases: After these initial phases all of the Waterside sites will be accessible. They can therefore come forward in whatever order the market demands. It is likely the commercial sites will come forward as and when occupiers are identified. We have assumed that the Watersports Centre (Phase 3) and the Riverside housing area will come forward early on. The housing in particular will allow some of the initial capital expenditure to be recouped.

Open space parcels: The four main areas of open space have been identified as parcels 9, 11, 14 and 15. These would need to be tied into the adjacent development phases. We would anticipate a condition that required them to be brought forward with which ever adjacent phase was developed first.

		Plot area ha	Area for density	Density u/ha	UNITS	FLOOR AREA sqm
Phase All	Housing	14.96	19.01	26	500	60,000
	Apartments	4.00		75	300	21,000
	Hotel	2.00			400	
	B2/B8	28.67				95,000
	B1	13.65				5,000
	B1C					45,000
	Watersports	243.46				
	Green	44.20				
	Other	46.10				
TOTAL		397.03			1200	226,000

Parcel		Plot area ha				
1	Road access from A38 and road box into the site	20.10				
TOTAL		20.10		0	0	
Parcel		Plot area ha		spaces		
2	Station and access	5.67		1200		
	Parking	1.93				
	Station and access	4.27				
TOTAL		11.87		1200	0	
Parcel		Plot area ha				
3	Watersports centre	12.27				
	Building area	3.57				
	Parking	105.81				
	Water	120.99				
	Other	0.82				
TOTAL		243.46				
Parcel		Plot area ha	Area for density	Density u/ha	UNITS	FLOOR AREA sqm
4	Waterside Housing	14.96	19.01	26	500	60,000
	Roads	5.14				
	Green space	0.90				
TOTAL		20.99			500	60,000
Parcel		Plot area ha		Plot ratio	UNITS	FLOOR AREA sqm
5	B2/B8	5.30		3.00	7	20,000
TOTAL		5.30			7	20,000
Parcel		Plot area ha		Plot ratio	UNITS	FLOOR AREA sqm
6	B2/B8	4.20		3.00	5	15,000
TOTAL		4.20			5	15,000
Parcel		Plot area ha		Plot ratio	UNITS	FLOOR AREA sqm
7	B2/B8	4.23		3.00	3	10,000
TOTAL		4.23			3	10,000
Parcel		Plot area ha		Plot ratio	UNITS	FLOOR AREA sqm
8	B2/B8	14.94		3.00	3	50,000
TOTAL		14.94			3	50,000
Parcel		Plot area ha				
9	Green space	7.43				
TOTAL		7.43		0	0	

Parcel		Plot area ha		Plot ratio	UNITS	FLOOR AREA sqm
10	B1c	4.30		2.50		15,000
TOTAL		4.30			0	15,000
Parcel		Plot area ha				
11	Green Space	5.58				
TOTAL		5.58				
Parcel		Plot area ha		Plot ratio	UNITS	FLOOR AREA sqm
12	B1	2.00				5,000
	B1c	7.34		2.50		30,000
	Hotel	1.00			100	
TOTAL		10.34			100	35,000
Parcel		Plot area ha		Density	UNITS	FLOOR AREA sqm
13	Housing	4.00		75	300	21,000
	Hotels	1.00			300	
TOTAL		5.01				
Parcel		Plot area ha				
14	Green Space	5.14				
TOTAL		5.14				
Parcel		Plot area ha				
15	Green Space	25.15				
TOTAL		25.15				





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Part 7

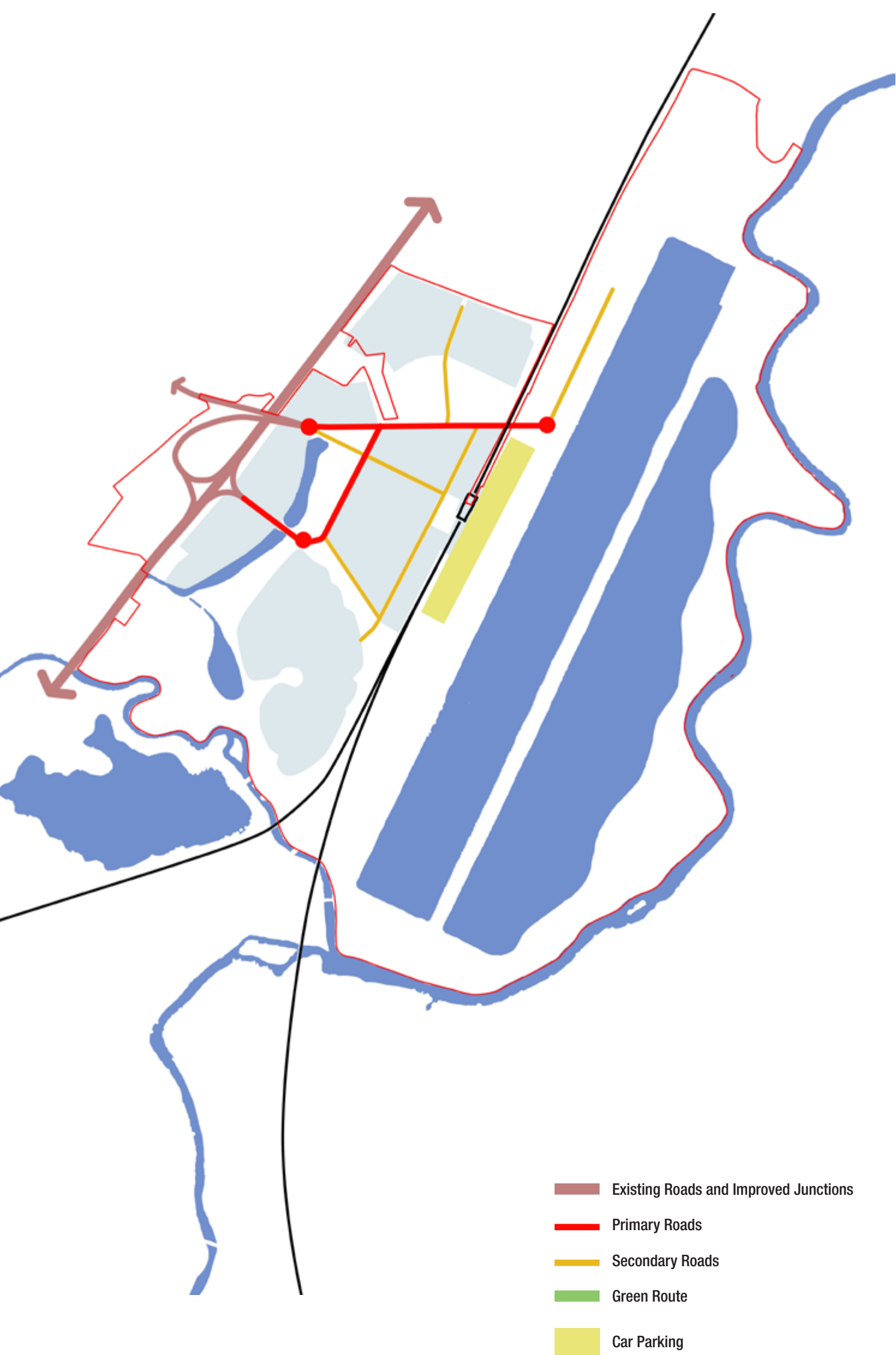
Parameter Plans

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7 ~ Parameter Plans

A ~ Access and Streets

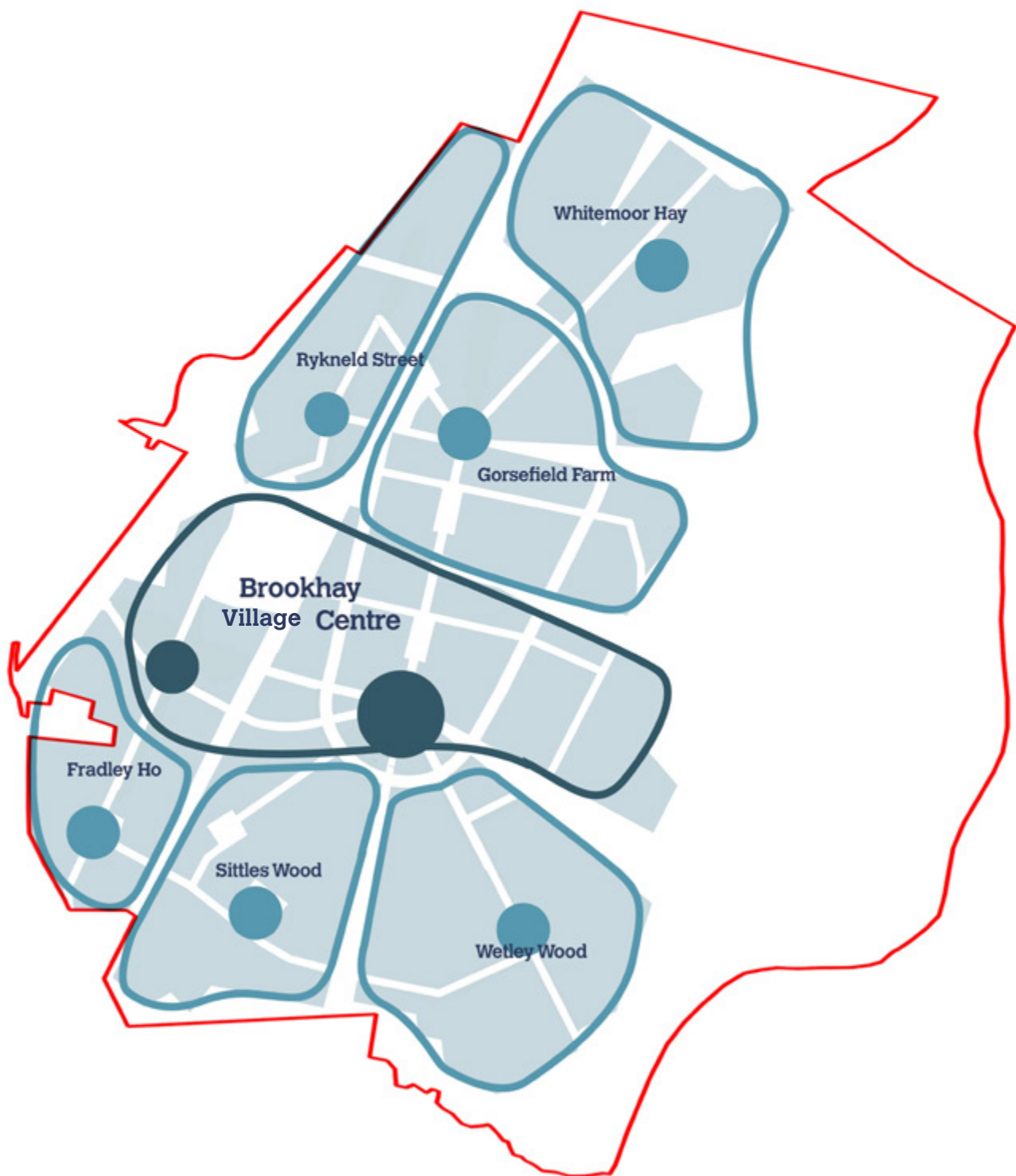


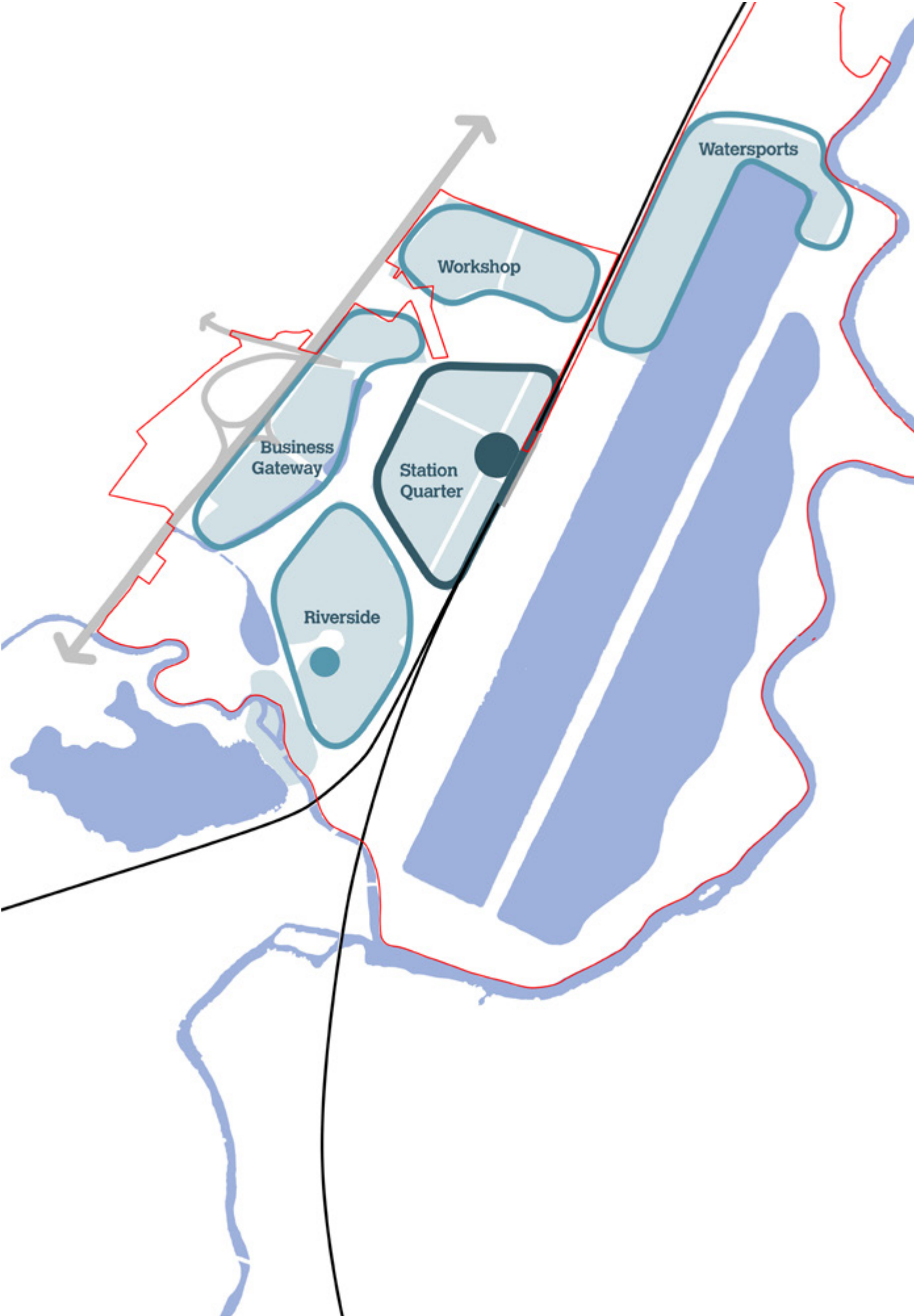


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7 ~ Parameter Plans

B ~ Neighbourhoods and Centres



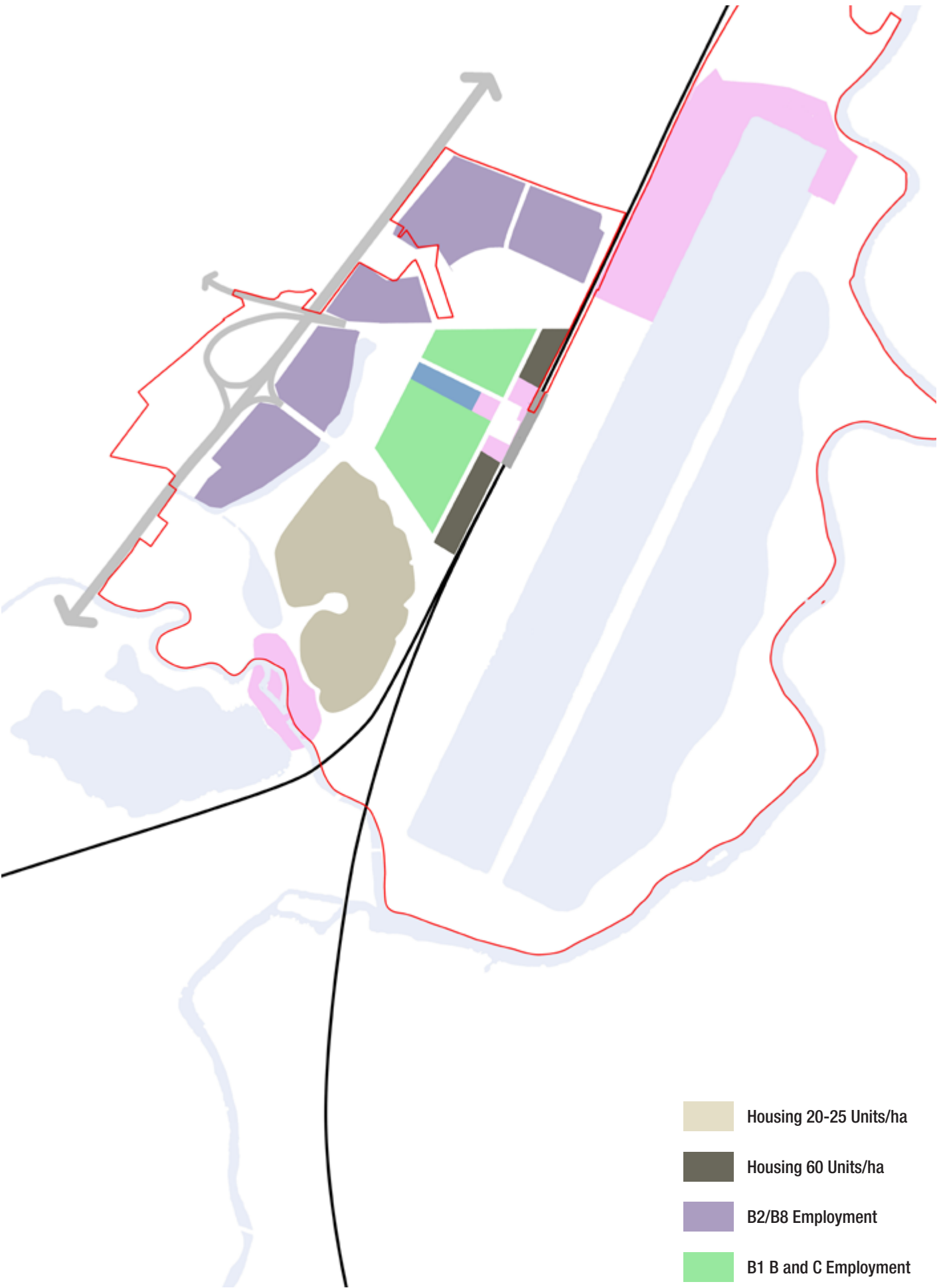


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7 ~ Parameter Plans

C ~ Uses and Densities



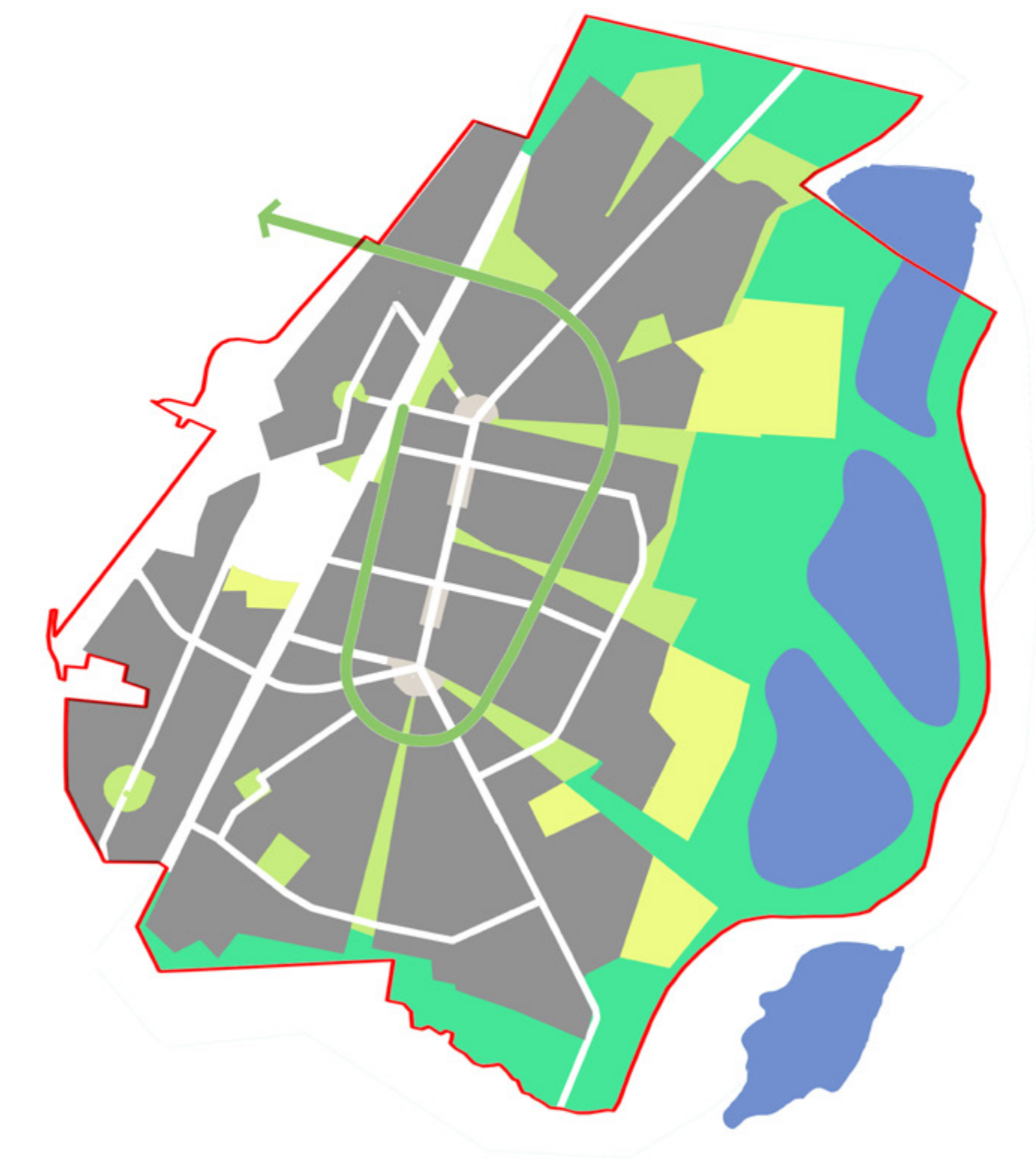


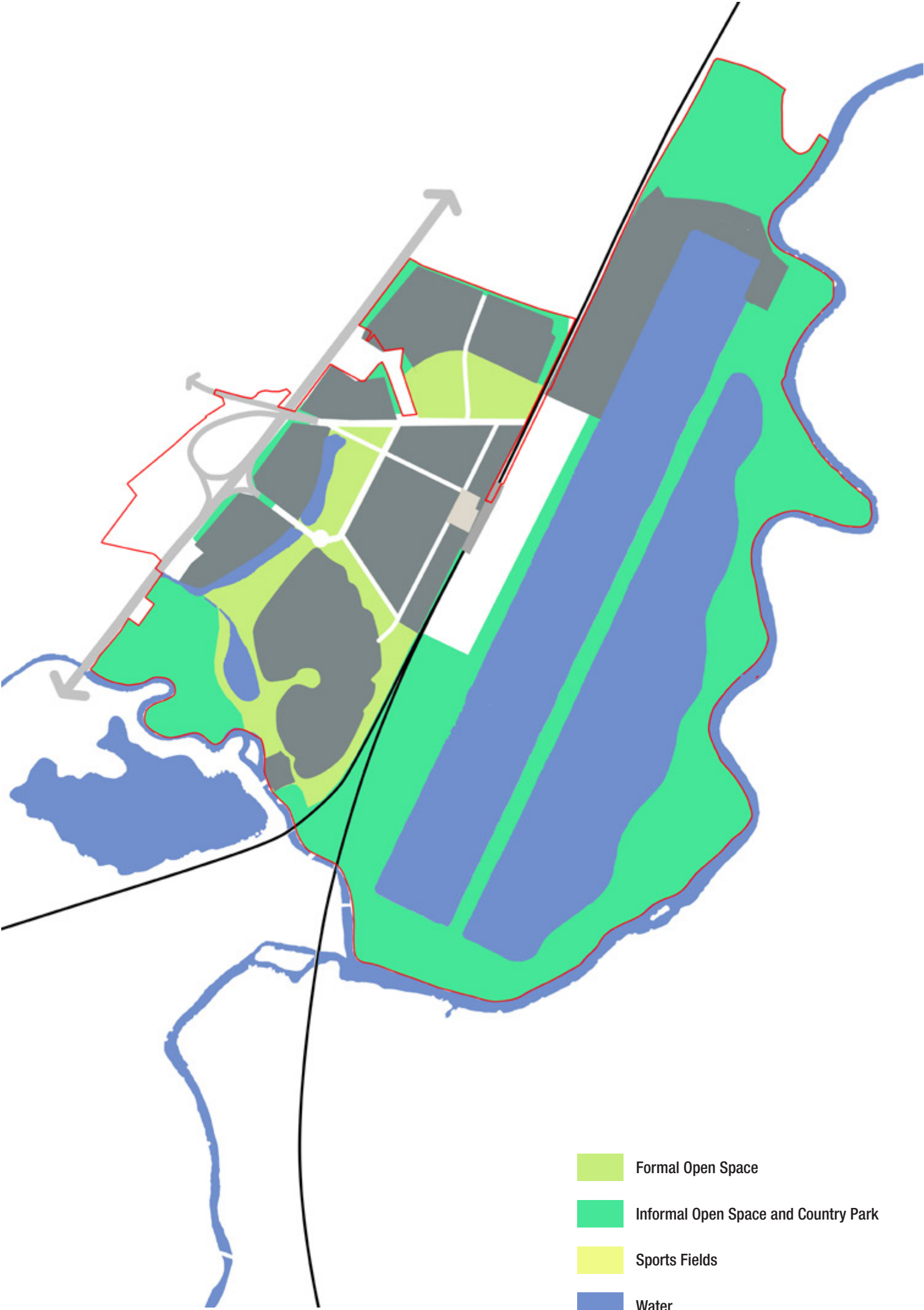
- Housing 20-25 Units/ha
- Housing 60 Units/ha
- B2/B8 Employment
- B1 B and C Employment
- Hotel / Leisure

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7 ~ Parameter Plans

D ~ Green Infrastructure



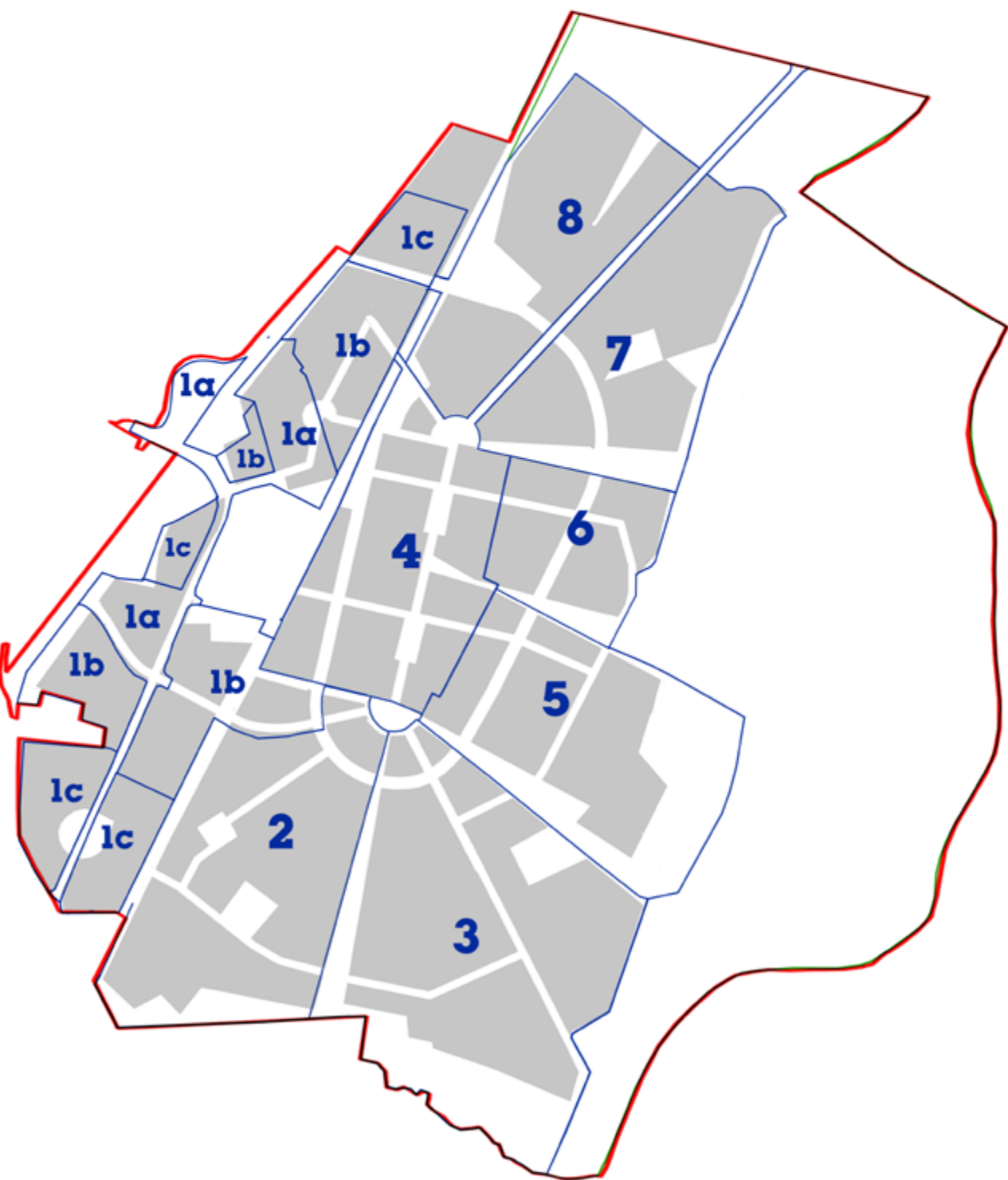


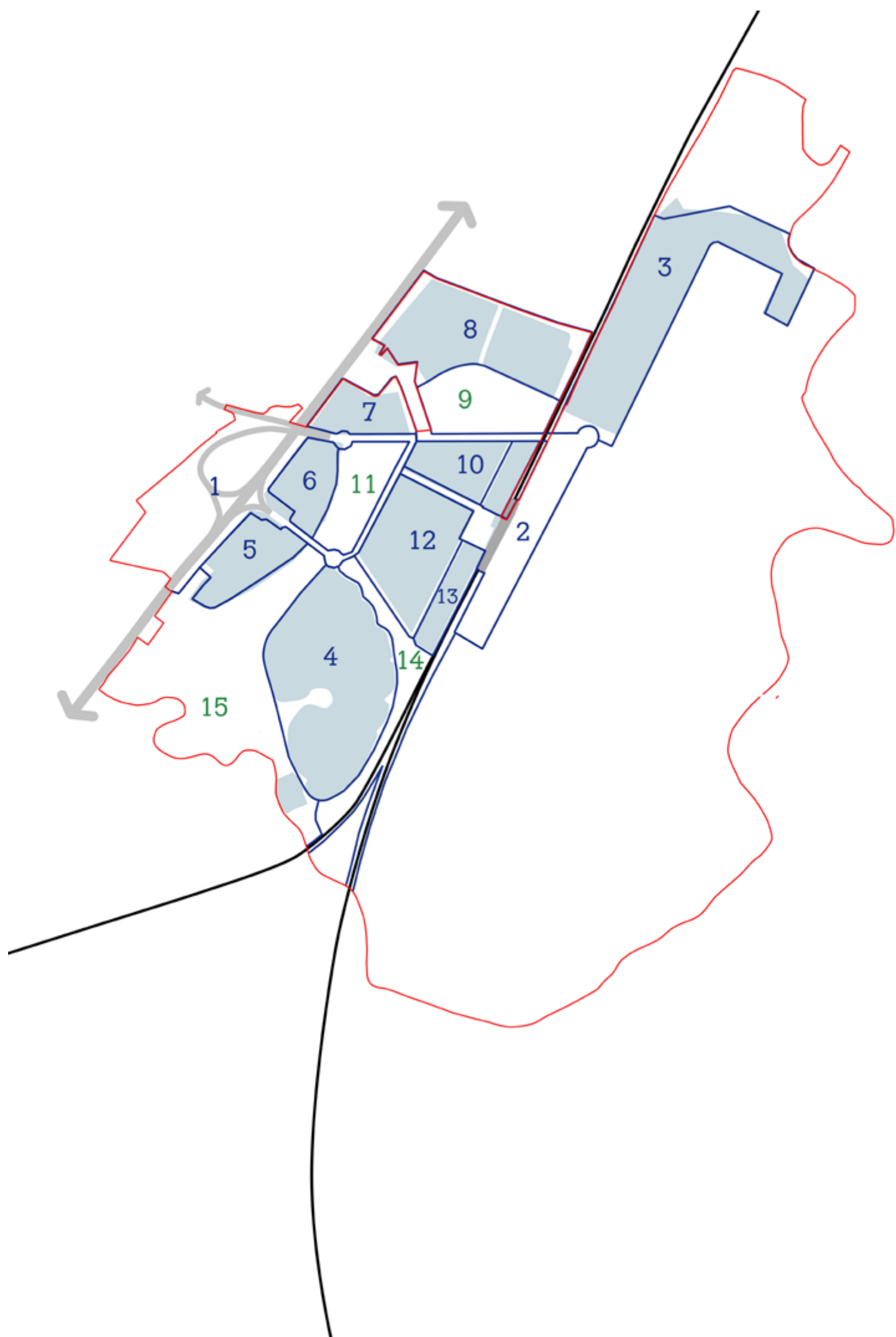
- Formal Open Space
- Informal Open Space and Country Park
- Sports Fields
- Water
- Green Route

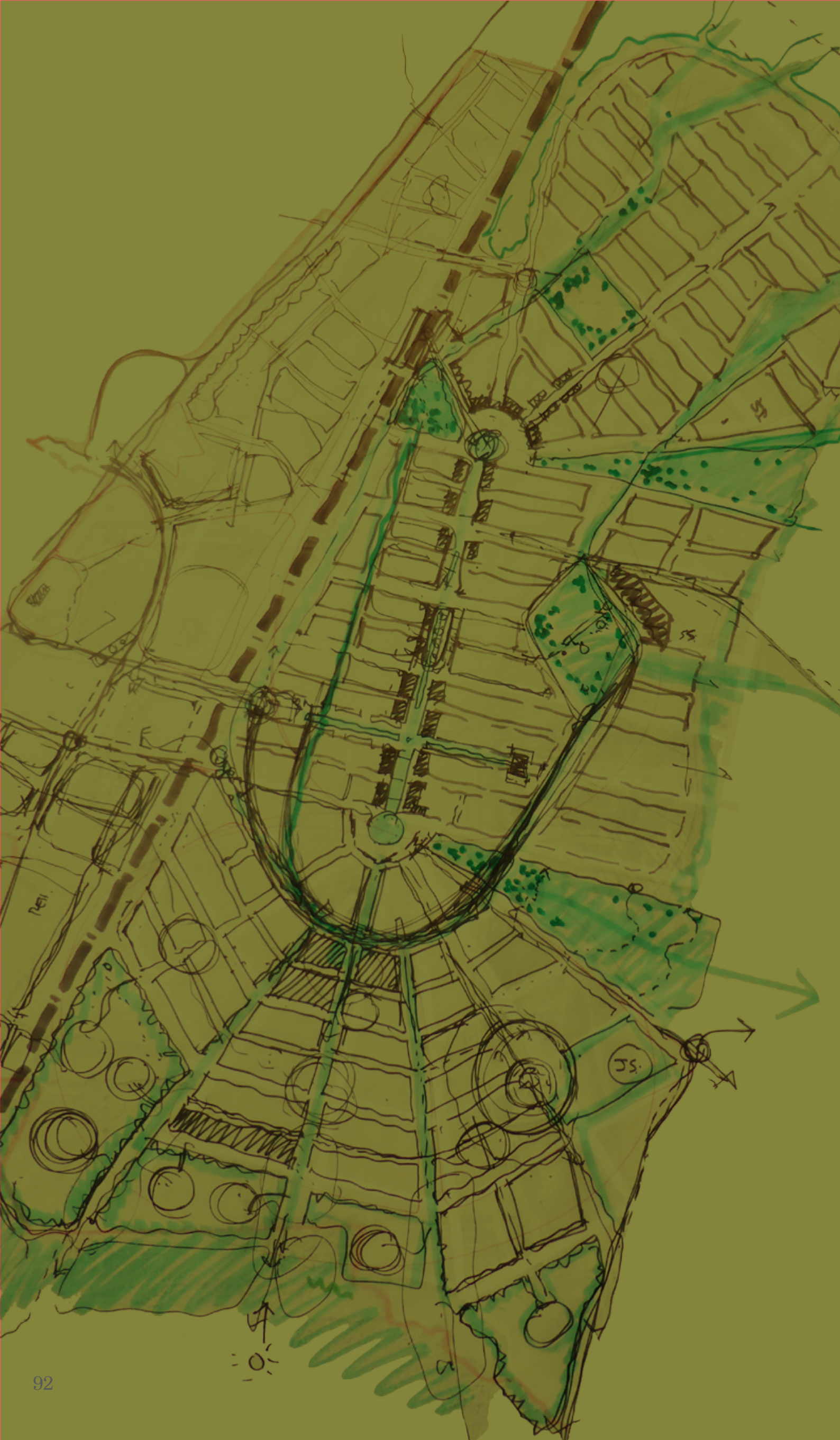
BROOKHAY

7 ~ Parameter Plans

E ~ Development Parcels









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Part 8

Phase 1 and 2 Detailed Study

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8 ~ Detailed Study

A ~ Phase 1

Phases 1 and 2 are designed to set the main design and place making principles for the whole of Brookhay. The core design motifs are squares, circuses, crescents, boulevards, streets and lanes, combined to create a memorable and meaningful series of spaces and events.

Phase 1 is organised around a central, north- south boulevard which links together the two proposed access points from the A38 corridor, in the north and south respectively. The boulevard crosses a new circus, which acts as the first arrival space to Phase 1. This highly impressive space which contains a central pocket park is enclosed with residential terraces from which smaller residential lanes radiate. The boulevard then carries north towards a second pocket park, this time enclosed by a south facing residential crescent. Both the circus and crescent parks are in turn linked across the railway with footbridges to the later development phases. A secondary circulating

street is proposed which in turn is connected to the main boulevard via a series of diagonally placed lanes and streets, each terminating in a number of discreet woodland hamlets.

This urban spatial structure allows for a variety of house types, densities and tenure. On the main boulevard it is envisaged that more formal terraces of appropriate scale and density are built while on the secondary streets, smaller terraces and semi-detached homes are located. Individual stand-alone apartment buildings are proposed at key points in the plan. The main arrival circus is proposed to provide some mixed use providing a degree of active ground floor uses.

To the north the new formal square is characterised by villas facing onto formal enclosed gardens. Further on is the less formal more 'rural' lane serving a number of individual residential plots.





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8 ~ Detailed Study

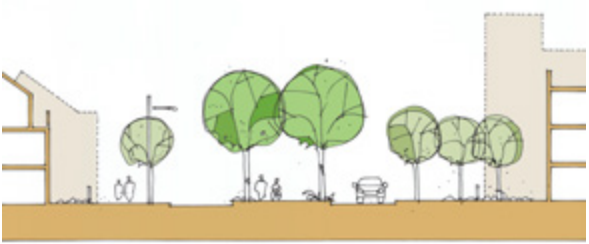
B ~ Phase 2

In a similar manner to Phase 1, Phase 2 is characterised by a main boulevard connecting two major urban spaces; a large formal square to the north and the large open circular park to the south.

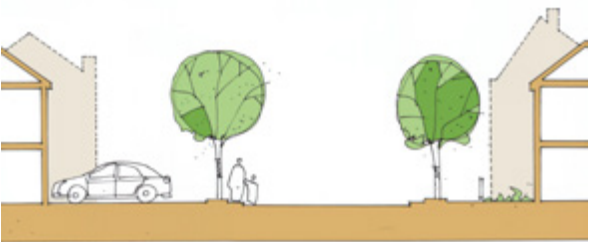
The proposed traffic link from the A38 corridor is lined with commercial plots as it links via a new junction across the railway to the large-scale later phases. Here a new large-scale formal square is proposed, which as in Phase 1, acts as a major arrival point into Brookhay. A new primary school is proposed on the northeast corner of the

square, which is designed to emphasise a direct pedestrian link from the square to a new rail station adjacent to the proposed traffic bridge. South of this is located parking for the station and a series of commercial plots.

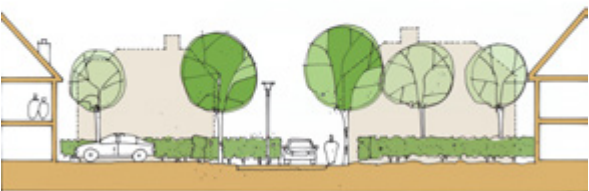
A series of new residential communities are proposed leading towards and enclosing the large circular park. From here a series of residential secondary lanes radiate to create a range of different plots. A meeting hall/community hub is envisaged sitting in the radial park. To the west, new canal side villas are proposed.



Street Section: Brookhay Village Boulevard



Street Section: Brookhay Village Street



Street Section: Brookhay Village Lane



