

Oxford City Council
**Barton NHS Healthy New Town
and Underhill Circus
redevelopment**
Health Impact Assessment

Final | 12 May 2017

This report takes into account the particular instructions and requirements of our client.

It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.







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Glossary of abbreviations and terms

AQMA	Air Quality Management Area
EIA	Environmental Impact Assessment
ES	Environmental Statement
FEES	Fabric Energy Efficiency Standards
FTE	Full Time Equivalent
GFO	Good Food Oxford
HIA	Health Impact Assessment
HUDU	Healthy Urban Development Unit
LSOA	Lower Super Output Area
MUGA	Multi-use games area
NHS	National Health Services
NICE	National Institute for Health and Care Excellence
NO ₂	Nitrogen Dioxide
OCC	Oxford City Council
ONS	Office of National Statistics
PM10	Particulate Matter
PRoW	Public Right of Way
SSE	Scottish and Southern Electric
SUDs	Sustainable Urban Drainage Systems
WHIASU	Wales Health Impact Assessment Support Unit
WHO	World Health Organisation

Executive Summary

This Health Impact Assessment (HIA) has been prepared on behalf of Oxford City Council and Barton Health New Town steering group for the proposed Barton Park development and Underhill Circus redevelopment which includes the Neighbourhood Centre refurbishment. The aim of this HIA is to support the Barton NHS Healthy New Town in fulfilling its potential as an exemplary initiative to improve physical and mental health and well-being of existing and future communities.

The HIA qualitatively assesses the potential health impacts of the proposed Barton Park development and the Underhill Circus redevelopment on a range of social, economic and environmental factors (or ‘determinants’) that have the potential to influence people’s health and wellbeing.

The HIA assesses three distinct elements that contribute to the development and regeneration of Barton. These include:

- Barton Park development;
- Underhill Circus regeneration; and
- Barton Neighbourhood Centre – service provision evaluation and upgrade.

The section of the HIA that focuses on Barton Park development has been carried out retrospectively and as such there is limited scope to influence the design of the masterplan. The design of the Underhill Circus redevelopment has not been finalised, so the HIA has fed back recommendations into the design process to help support positive physical and mental health and well-being.

Barton is located in the suburbs of Northeast Oxford, Oxfordshire, to the north of the A40. The area is residential in nature, bounded by rural land to the west. The Underhill Circus redevelopment site lies adjacent to and east of Barton Park development with green belt land located to the north of the site.

Barton is characterised by:

- High levels of deprivation, with the area around the proposed development falling within the top 20% most deprived areas in England;
- The age profile of the study area is broadly similar to the English average, with the majority of residents falling within the working age category (16-64 years of age). It is notable that in the lower super output areas (LSOAs)¹ within the study area there is a lower than

¹ Super Output Areas are a geography for the collection and publication of small area statistics. They are used on the Neighbourhood Statistics site and across National Statistics. There are currently two layers of Super Output Area – Lower Layer Super Output Area (LSOA) and Middle Layer Super Output Area (MSOA).

average proportion of residents above 65 years and an above average proportion of residents aged 15 years and below.

- The 2011 Census shows that LSOAs Oxford 007c, 007c and 004b and South Oxford 002a were characterised by a high percentage of owner occupied housing and a low social and private renting. LSOAs Oxford 005a, 006d, 005b and 007e had much higher levels of social and private renting.
- The area around the proposed development contains a higher than average proportion of people from ethnic minority groups.

The Barton Healthy New Town steering group have funded a research group to identify gaps and opportunities for local level data collection as well as local health issues through a community survey. The baseline has included findings from this research, referred to in the text as the 'MEL Barton Healthy New Town Research Report'.

During the construction phase of the Barton Park development and Underhill Circus redevelopment, there is the potential for some short term negative and positive health effects, related to the following impacts on health determinants:

- Impacts on environmental conditions in and around existing residential properties adjacent to the site through increased levels of noise, dust and traffic, loss of privacy and visual effects;
- The addition of construction related traffic on local roads affecting their use by cyclists (particularly commuters) and altering perceptions of road safety for both cyclists and pedestrians, and particularly more vulnerable users such as children and older people;
- Increased fear of crime caused by the presence of vacant building sites which can create intimidating environments if not properly lit and managed;
- During the redevelopment of Underhill Circus, the occupants within housing that will be redeveloped could be temporarily relocated causing possible stress and loss of social network support to the residents during relocation;
- During the construction period, the level of construction employment is expected to be 81 personnel with approximately 32% of site staff residing in Oxfordshire which would create positive health effects associated with employment.

During the operation stage of Barton Park development and Underhill Circus redevelopment, there is the potential for some long term negative and positive health effects, related to the following impacts on the health determinants:

- 40% of housing provision within the Barton Park development will be affordable housing and 50% of housing provision within the Underhill Circus redevelopment will also be affordable housing. Affordable housing will benefit the local population who are on low incomes and particularly older people in poor quality social housing who are more vulnerable to adverse effects such as fuel poverty and young people who struggle to get on the housing market, revitalise the existing

Barton area and promote economic and social integration while building community cohesion;

- The creation of strong communities within the development will depend, in part, on fostering positive and trusting relationships between residents in the different housing tenures. To encourage this, the Barton Park development will ensure that all properties are 'tenure blind' to avoid the creation of clear visual distinctions between tenure types;
- Both the Barton Park development and Underhill Circus redevelopments have the potential to benefit physical and mental health and wellbeing through the provision of new areas of open space and/or improving access to areas of open space;
- Barton Park development will connect with existing communities, for instance linking up with Barton and Northway via bus services or cycleways/footpaths, thus reducing community severance through improved commuting links and encouraging community interaction;
- Both Barton Park development and Underhill Circus redevelopment provides opportunities for the voluntary and community sectors. For instance, the Barton Park development is facilitating opportunities for the voluntary and community sectors such as the use of community hub which will address social isolation and enhance community cohesion. The community hub and community pavilion will include spaces that can be utilised by a wide range of community groups. The upgrade to services provided by the Neighbourhood Centre at Barton will also facilitate opportunities for the voluntary and community sectors;
- There would be continuation and expansion of social prescribing services offered by the GP service within the Barton Neighbourhood Centre. Recognising that people's health is determined primarily by a range of social, economic and environmental factors, social prescribing seeks to address people's needs in a holistic way. It also aims to support individuals to take greater control of their own health. Those who could benefit from social prescribing schemes include people with mild or long-term mental health problems, vulnerable groups, people who are socially isolated, and those who frequently attend either primary or secondary health care; and
- There is potential for health and social outreach services, such as mother and baby clubs, adult learning, advice surgeries etc., to be provided within the flexible community floorspace in the Community Hub and community pavilion, as part of the Barton Park development. This will provide opportunities for training and advice to residents increasing opportunities for employment and helping to reduce negative health effects associated with unemployment.

Where potential negative effects on health have been identified in the HIA, recommendations are proposed to reduce them and maximise any positive impacts on health outcomes from the Barton Park development and Underhill Circus redevelopment.

1 Introduction

- 1.1.1** This Health Impact Assessment (HIA) has been prepared for Oxford City Council (OCC) on behalf of Barton Health New Town steering group for the proposed Barton Park development and Underhill Circus redevelopment which includes the Neighbourhood Centre refurbishment.
- 1.1.2** The aim of this HIA is to support the Barton NHS Healthy New Town project in fulfilling its potential as an exemplary initiative to improve physical and mental health and well-being of existing and future communities.
- 1.1.3** The section of the HIA that focuses on Barton Park development has been carried out retrospectively and as such there has been limited scope to influence the design of the masterplan. The design of the Underhill Circus redevelopment has not been finalised, as such the HIA has fed back recommendations into the design process to help support positive physical and mental health and well-being.

2 Project Description

2.1 Introduction

2.1.1 The HIA assesses three distinct elements that contribute to the development and regeneration of Barton. These include:

- Barton Park development;
- Underhill Circus regeneration; and
- Barton Neighbourhood Centre – service provision evaluation and upgrade.

2.1.2 The details relating to each of these components are set out below and will be the basis for the assessment in Section 4.

2.2 Barton Park development

2.2.1 Barton Park is a new mixed-use residential neighbourhood on the north eastern edge of Oxford which received outline planning permission in 18 October 2013. Infrastructure construction started in 2015 and housebuilding started in 2016. It is anticipated that construction will continue until 2025. First occupation of any dwelling on site is planned for December 2017 and occupation of the final dwelling on site is planned for April 2025. The Barton Park development site lies adjacent to the existing community of Barton, Oxford. The development is promoted by Barton Oxford LLP, a partnership between Grosvenor Developments Ltd and Oxford City Council. Figure 1 shows the location of the development site.

2.2.2 The site falls within the Oxford City Council administrative area. The district boundary between Oxford City Council and South Oxfordshire District Council is immediately to the north of the development site on the northern side of Bayswater Brook. The site is bordered by the A40 to the south and Bayswater Brook to the north. The A40 is a main distributor and bypass route, linking Oxford east to the M40 at junction 8 and west to Cheltenham and Gloucester.

2.2.3 The existing undeveloped site consists of approximately 38 hectares of agricultural fields, historic hedgerows, mature trees, allotments, a nature park, sports pitches, a pavilion and some highway land (A40).

An electricity substation is located in the centre of the site, which is owned by Scottish and Southern Electric (SSE).

2.2.4 One of the agreed aims of the Barton Park development is to have a regenerative effect on its surrounding communities, in particular Barton. As a result of the development, Oxford City Council (OCC) has committed £3.9 million in regeneration funding for the surrounding area over the next 4 years. Barton in Oxford was chosen as one of the ten National Health Services (NHS) Healthy New Town demonstrator sites within England². NHS are working with ten housing developments to help shape the health of communities, and to rethink how health and care services can be delivered. The programme offers an opportunity to radically rethink how people live and takes an ambitious look at improving health through the built environment. The Barton Healthy New Town project aim is for *All Barton residents (Barton and Barton Park) have an equal opportunity to good physical and mental health and good health outcomes.*

2.2.5 Barton Park will create 885 lifetime homes, 40% of which will be social housing. As part of the masterplan [refer to Appendix A], driven by a commitment to health and wellbeing and more than five years of intensive consultation and planning, the development will provide a new sports pavilion and improved sports facilities, a linear park and high quality green spaces, and extended and improved allotments.

2.2.6 The outline planning consent for Barton Park was approved in October 2013. Since then work has been progressing on the primary infrastructure which will be implemented by Barton Oxford LLP to provide serviced plots for each of the development parcels in line with the approved phasing plan, refer to Appendix B.

2.2.7 The primary infrastructure comprises:

- The primary street, A40 junction, principal squares, drainage and utilities;
- The linear park and greenways;
- Allotments and a community garden; and
- The formal recreation associated with the community hub.

² <https://www.england.nhs.uk/ourwork/innovation/healthy-new-towns/>

2.2.8 Barton Park's vision³ is underpinned by core values of viability and sustainability and driven by the following key objectives:

- Create an exemplary, residential-led development, including complementary facilities to serve the new and existing communities, such as a primary school, community facilities and a food store;
- Ensure the development integrates with and helps regenerate the surrounding neighbourhoods of Barton, Headington and Northway, establishing social and physical connections and promoting social inclusion;
- Deliver a range of high-quality, well designed homes for sale in Oxford to meet the needs of local people, including family, detached, semi-detached and terraced houses, as well as apartments;
- Ensure that at least 40% (354) of properties built on the site are affordable housing;
- Specify and enforce a strict design code to ensure all properties are built to high standards;
- Provide improved transport and pedestrian links across the A40 at Barton;
- Promote sustainable modes of transport;
- Establish and strengthen pedestrian and cycle links to the centre of Oxford;
- Establish a network of green routes, enhance the Bayswater Brook and create a new brook-side park; and
- Encourage a low-carbon lifestyle.

2.3 Barton Underhill Circus redevelopment

2.3.1 There are proposals to redevelop Underhill Circus to regenerate the existing Barton estate and to help forge links with Barton Park development. Refer to Appendix C Underhill Circus Feasibility Options report for further details on the preferred option for redevelopment, Option 4.3. Refer to Figure 2 for site location of Underhill Circus. The proposals include the following objectives:

- Retain and re-fenestrate existing Northern flat development, whilst improving existing thermal performance;

³ <http://www.bartonparkoxford.com/vision/vision.aspx>

- Demolish and replace existing shops (A1 use) and flatted residential development with associated parking and amenity;
- Improve Green Belt sight lines from the existing public routes neighbouring the site;
- Provide pedestrianised zone (boulevard) for community gatherings and associated public amenity;
- Retain existing GP surgery/ mini bus parking & introduce A1 parking provision;
- Improve green areas; and
- Reduce visual impact of car parking.

2.3.2 Barton Neighbourhood Centre would also undergo refurbishment on its in-house Bury Knowle General Practice branch to meet growth in population. The proposed changes to the surgery include the following:

- Expansion of surgery space (double its existing size) and clinical services. Physical improvements that are planned include three new consulting rooms, plus new group and counselling rooms, staff room/kitchen area, record storage, new external access, space to accommodate a dispensary/pharmacy and additional parking;
- Continuation and expansion of social prescribing service⁴ subject to funding; and
- Green prescription⁵ and augmentation of smoking cessation services – tentatively planned.

2.3.3 A planning application for the Underhill Circus redevelopment is due to be submitted in June 2017 and construction to begin in November 2017 with completion of works in May 2018.

⁴ Social prescribing enables GPs, nurses and other primary care professionals to refer people to a range of local, non-clinical services

⁵ A Green Prescription (GRx) is a health professional's written advice to a patient to be physically active, as part of the patient's health management. It's a smart and cost-effective way to help people stay healthy.

3 Legislative and Policy Context

3.1 National and regional policy context

3.1.1 HIA is promoted at European level in Article 152 of the Amsterdam Treaty; and at UK level in the Government White Paper Saving Lives: Our Healthier Nation (1999).

3.1.2 The Government White Paper: Choosing Health – Making Healthy Choices Easier (2004) outlined the importance of routinely considering the impact of ‘non-health’ interventions on population health both before implementing policies (through HIAs, for example) and afterwards through evaluation.

3.1.3 The Government White Paper: Healthy Lives, Healthy People: Our strategy for public health in England (2010) does not identify a specific requirement for HIA, but its policies and guidance support this approach.

3.1.4 The National Planning Policy Framework (NPPF, 2012), makes reference to the links between local planning authorities and health organisations. The NPPF suggests future development should be assessed for any expected changes and barriers to health and well-being.

3.1.5 HIAs proactively seek to do just that, and therefore the NPPF can be noted in influencing the requirement to produce a HIA for new developments. The NPPF, in paragraph 171, specifically addresses health and well-being and is cited below:

'Local planning authorities should work with public health leads and health organisations to understand and take account of the health status and needs of the local population (such as for sports, recreation and places of worship), including expected future changes, and any information about relevant barriers to improving health and well-being.'

3.2 Local policy context

3.2.1 OCC's Core Strategy was adopted in March 2011 and relates to the period 2011 – 2026. The Core Strategy's vision sets out the strengths

and issues that Oxford faces and takes into account existing plans and strategies. Promoting social inclusion and improving quality of life is one of the key visions of the OCC's Core Strategy.

3.2.2 Improving health and social inclusion is also a key priority of Oxford's Sustainable Community Strategy, while reducing inequalities and breaking the cycle of deprivation is a strategic objective in the Oxfordshire Sustainable Community Strategy.

3.2.3 Oxfordshire Health Inequalities Commission produced a report on Health Inequalities in October 2016. This report provides recommendations to narrow the health and wellbeing gaps which divide some communities in the county. The Commission was set up in 2016 by the Oxfordshire Health and Wellbeing Board to tackle inequalities which have a significant impact on people living in poverty and those who are more vulnerable leading to poorer health and shorter lives.

3.3 Guidance documents

3.3.1 The Barton NHS Healthy New Town HIA will be steered by the Planning for Health 'Rapid Health Impact Assessment Matrix' and guidance produced by the NHS London Healthy Urban Development Unit⁶ (HUDU, 2013).

3.3.2 The assessment matrix is designed to rapidly assess the likely health impacts of development plans and proposals, including planning frameworks and masterplans for large areas, regeneration and estate renewal programmes and outline and detailed planning applications. The matrix should be used prospectively at the earliest stage during plan preparation, or prior to the submission of a planning application

⁶ NHS London Healthy Urban Development Unit (HUDU), (2013). Planning for Health 'Rapid Health Impact Assessment Matrix'

to inform the design, layout and composition of a development proposal.

3.3.3 The aim of the matrix is to ensure that:

‘health is properly considered when evaluating and determining planning proposals and that where possible development plans and proposals have a positive rather than a negative influence on health’ .

4 Approach and Methodology

- 4.1.1** This Barton Park development and Underhill Circus redevelopment HIA is steered by the Planning for Health ‘Rapid Health Impact Assessment Tool’ and guidance produced by the NHS London Healthy Urban Development Unit (HUDU, 2015).
- 4.1.2** The tool is designed to assess the likely health impacts of development plans and proposals, including planning frameworks and masterplans for large areas, regeneration and estate renewal programmes and outline and detailed planning applications. It is partly based on the World Health Organization publication Healthy Urban Planning by Hugh Barton and Catherine Tsourou (2000).
- 4.1.3** The assessment helps to identify those determinants of health which are likely to be influenced by a specific development proposal. It does not identify all issues related to health and wellbeing, but focuses on the built environment and issues directly or indirectly influenced by planning decisions. Not all the issues or assessment criteria may be relevant and the user is encouraged to prioritise specific actions which focus on key impacts.
- 4.1.4** This HIA has been undertaken to include the following stages:
- **Scoping stage:**
 - identifying health determinants and vulnerable groups applicable to the proposed developments;
 - **Assessment stage:**
 - linking health determinants and health impacts;
 - assessment of health impacts;
 - recommendations.

4.2 Scoping of health impacts

- 4.2.1** The HUDU checklist was used to conduct an initial review of the impacts of the Barton Park development and the Underhill Circus

redevelopment and then make an initial assessment on which determinants would be examined in further detail in the HIA.

4.2.2 The HUDU Rapid HIA Tool checklist identifies the following potential health determinants that may be relevant to a given project:

- housing;
- access to healthcare services and other social infrastructure;
- access to open space and nature;
- air quality, noise and neighbourhood amenity;
- accessibility and active travel;
- crime reduction and community safety;
- access to healthy food;
- access to work and training;
- social cohesion and lifetime neighbourhoods;
- minimising the use of resources; and
- climate change.

4.2.3 A review of the proposed development was conducted against the assessment criteria outlined under each determinant in the checklist. It established which issues have the potential to impact on health and wellbeing and an initial indication of whether the impact was beneficial or adverse.

4.2.4 Based on this review, it was concluded that all determinants could potentially be influenced by the proposed development and would all be examined in further detail in the assessment.

4.2.5 Vulnerable and/or disadvantaged groups were identified using the Wales Health Impact Assessment Support Unit (WHIASU) vulnerable group checklist, refer to Appendix D. The WHIASU vulnerable group checklist systematically considers inequalities and the impacts on a range of vulnerable groups within the population and assesses the extent and distribution of them. These groups can, for example, include older people, children and young people, those who suffer from chronic conditions, or those who are geographically isolated.

HIAs that have an equity focus are based on the principle of social and environmental justice and fairness for all.

4.2.6 The results were recorded in a copy of the HUDU matrix, a copy of which is available in **Error! Reference source not found.E**. Sections **Error! Reference source not found.** to **Error! Reference source not found.1** of this report provide an assessment of health impacts and effects for those determinants that were taken forward for further examination.

4.3 Geographical and temporal scope

Geographic Scope

4.3.1 The geographical scope varies between the different health determinants assessed in the HIA. The HIA assesses data at both the borough level (Oxford) and at the Lower Super Output Area Level (LSOAs)⁷.

4.3.2 Data relating to LSOAs was acquired for those LSOAs within a 500m radius of the proposed Barton Park development site (see Figure 3) and include:

- South Oxfordshire 002A;
- Oxford 004B;
- Oxford 005A;
- Oxford 005C;
- Oxford 005D;
- Oxford 006D; and
- Oxford 006E.

4.3.3 Data relating to LSOAs was acquired for those LSOAs within a 500m radius of the proposed Underhill Circus redevelopment site (see Figure 4) and include:

- South Oxfordshire 002A;
- Oxford 005A;

⁷ Super Output Areas are a geography for the collection and publication of small area statistics. They are used on the Neighbourhood Statistics site and across National Statistics. There are currently two layers of Super Output Area – Lower Layer Super Output Area (LSOA) and Middle Layer Super Output Area (MSOA).

- Oxford 005B;
- Oxford 005C;
- Oxford 007A;
- Oxford 007C; and
- Oxford 007E.

Temporal scope

4.3.4 The HIA's temporal scope is consistent with other relevant assessments such as the Barton Health Plan 2016-2017, EIA, and Sustainability Statement.

4.3.5 The scope covers both the construction and the operation of the Barton Park development and Underhill Circus redevelopment and the likely duration of the impacts will be identified within the assessment.

4.4 Methodology

Policy review

4.4.1 National, regional and local policies, plans and strategies relevant to health, including National Institute for Health and Care Excellence (NICE) public health guidance, have been reviewed to provide a rationale for the HIA. The policy review for the HIA includes local policies relevant to health such as:

- Health and wellbeing strategies; and
- Sustainable community strategies.

4.4.2 The aim is to identify local health policy and review how the Barton Park development and Underhill Circus redevelopment may impact on these, both positively and/or negatively.

Baseline data gathering

4.4.3 Baseline data was collated from a range of sources to provide an overview of the existing population, existing health profile, socio-

economic conditions in the local community and the physical environment in the locale.

4.4.4 It should be noted that the Barton Healthy New Town steering group have funded a research group to identify gaps and opportunities for local level data collection as well as local health issues through a community survey. The baseline has included findings from this research, referred to in the text as the ‘MEL Barton Healthy New Town Research Report’⁸.

4.4.5 This gathering of baseline data was coordinated with other workstreams and deliverables for the planning application such as the Environmental Statement (ES), the Barton Health Plan 2016-2017 and the Sustainability Statement. The data reviewed included:

- Public Health England ‘Health Profiles’ 2013;
- Police.UK crime statistics;
- Oxfordshire Strategic Housing Market Assessment;
- The Department of Communities and Local Government (DCLG) ‘The English Indices of Deprivation’ 2010; and
- Office for National Statistics, Census 2011 data.

Linking health determinants and health impacts

4.4.6 Using available literature, including previous health studies and recent research, a literature review was collated to identify links between the selected determinants and health impacts.

4.4.7 Impacts may be direct or indirect and links may be causal or compounding. Key reference material is included:

- Government health policies, programmes and strategies;
- Previous HIAs for transport projects;
- Public health reports and research papers from a range of sources, including:
 - Department of Health (DH);
 - WHO;
 - National Institute for Health and Care Excellence (NICE);
 - Health Development Agency (HDA).

⁸ M.E.L Research (March 2017), Barton Healthy New Town – Oxford City Council

Assessment of health impacts

- 4.4.8** The assessment of potential health impacts is based on the health determinants outlined in the HUDU Matrix and encompasses, in general, only qualitative assessment techniques.
- 4.4.9** The qualitative assessment of health impacts describes the nature of the potential impact on the determinant of health and the direction of change which are classified as positive, negative, neutral or uncertain.
- 4.4.10** The assessment also considers the cumulative effects of changes in a number of determinants on a given receptor (i.e. cumulative impacts from changes in the air quality, noise and visual environment on a residential receptor).
- 4.4.11** Based on the literature review links are made between the identified impacts on the selected determinants and potential health effects/outcomes.
- 4.4.12** Health inequalities and the potential for disproportionate impacts on certain vulnerable groups are taken into account in the assessment.

Recommendations

- 4.4.13** Where impacts are identified in the HIA, recommendations are proposed to reduce any negative impacts and maximise any positive impacts on health outcomes from the Barton Park development and Underhill Circus redevelopment.
- 4.4.14** Recommendations for the Underhill Circus redevelopment will be fed into the design process through design workshops and on-going discussions and meetings with the design team to ensure that issues related to health influence the final design. Commentary is provided on how the design of the Underhill Circus redevelopment has responded to any recommendations arising out of the HIA.
- 4.4.15** For the retrospective assessment of Barton Park, the HIA highlights any potential improvements to the masterplan for learning purposes, and to inform future masterplans. Recommendations have also been

made to improve health outcomes through the detailed design, construction and ongoing management of the development.

- 4.4.16** Where mitigation has already been identified that will serve to improve health outcomes, for example through the EIA process, this mitigation has been cross-referenced in the HIA.
- 4.4.17** The responsible organisation(s) and the timing of actions required to implement any recommendations made in the HIA are identified.
- 4.4.18** A Mental Health Visions workshop was held on March 15th and March 29th 2017 to bring expert partners to develop a vision of what excellence would look like in Barton and Barton Park. Partners attended the workshop from OCC, Oxford Health NHS Trust, Public Health, Children's Services and from local third sector organisations including Oxfordshire Mind and Elmore Community Services. Residents of Barton experience significantly poorer Mental Health outcomes than the rest of Oxford and Oxfordshire and have poorer engagement with services. Due to the level of concern and interest in Mental Health in Barton, Oxfordshire Mind were asked to facilitate workshops to explore how Mental Health and Wellbeing can be addressed in Barton and Barton Park. Outcomes of this workshop have been provided within the Recommendations section of this HIA, Section 7.

Consultation

- 4.4.19** The HIA scoping report was circulated to the Barton Healthy New Town steering group as well as Oxford City Council. Any issues raised through this consultation process were taken into consideration in this HIA document.

Limitations of the study

- 4.4.20** Literature and baseline data used in the study was limited to readily available public and published sources. The information contained within the ES and other project documents was used to characterise the study area and identify impacts on health determinants.
- 4.4.21** The approach to the assessment of health impacts is generally qualitative, identifying likely positive and negative impacts based on

the causal relationships between determinants and health outcomes identified within the literature reviewed.

5 Community health and well-being context

5.1 Site context

5.1.1 The Barton Park development site is located within the suburbs of Northeast Oxford, Oxfordshire, to the north of the A40. The area is residential in nature, bounded by rural land to the west. The Underhill Circus redevelopment site lies adjacent to and east of Barton Park development with green belt land located to the north of the site.

5.1.2 The 2015 Index of Multiple Deprivation (IMD) assess deprivation for seven different domains (income, employment, health, barriers to housing and services, crime, and living environment). Oxford 005a, 005b and 006d are the most deprived, all falling within the 20% most deprived areas, refer to Figure 3 and 4 for locations of LSOAs. In contrast, Oxford 006e and 004b fall within the 20% least deprived areas.

5.1.3 Table 1 shows the populations of the LSOAs and wider boroughs in the study area.

Table 1 LSOAs population in 2011⁹

Area	Population (2011)
Oxford	151,906
South Oxfordshire	134,257
South Oxfordshire 002a	1382
Oxford 004b	1593
Oxford 005a	2246
Oxford 005b	1502
Oxford 005c	1772

⁹ Office for National Statistics (ONS) (2011) Census

Oxford 005d	1493
Oxford 006d	1643
Oxford 006e	1885
Oxford 007a	1682

5.1.4 Population densities are high throughout the LSOA's identified in Table 1, reflecting the urban setting, with the exception of South Oxfordshire 002a which only had 0.5 persons per ha. Oxford 005b was the most dense with 78 persons per ha, followed closely by Oxford 005b with 75 persons, refer to Figure 3 and 4 for locations of LSOAs.

5.1.5 The age profile of the study area is broadly similar to the English average, with the majority of residents falling within the working age category (16-64 years of age). It is notable that in Oxford 005a there is a lower proportion of residents above 65 years (8% compared with English average of 16%) and a higher proportion of residents 15 years and below (25% compared with English average of 19%). Oxford 005b was also similar with more residents under 15 (27%) and less over 65 (11%). Most LSOAs had an above average proportion of residents from minority ethnic groups.

5.2 Wealth and deprivation

5.2.1 Income deprivation is a measure of families being on very low incomes whether in or out of work, whereas employment deprivation is based on involuntary exclusion of people of working age from work.

5.2.2 Most LSOAs were in the 20-30% most deprived areas for income deprivation. Oxford 006d is the least deprived, falling in the 10% least income deprived areas, refer to Figures 3 and 4 for locations of LSOAs. Oxford 006d and 004b have the least employment deprivation, falling within the 10% least deprived areas. Oxford 005c and 006e are the most deprived of the assessed LSOAs, falling within the 20% most deprived areas for employment.

5.2.3 The number of working age individuals claiming a key benefit is considerably higher in Oxford 005a and 005b than the national average (15%), at 22% and 24% respectively. Oxford 006d has significantly fewer individuals claiming, at only 5% of the population.

5.2.4 Three industries are identified as having a large proportion of residents working in:

- ‘Wholesale and retail trade; repair of motor vehicles’: All LSOAs have over 10% of residents working within this sector with exception to Oxford 007a, 006d and 005b. However, all areas still had a smaller proportion of people working in this sector than the national average (15.9%).
- ‘Human health and social work’: All LSOAs have a significant higher proportion of residents working within health and social care than the national average (12.4%). 43% of residents in Oxford 006d work in this sector.
- ‘Education’: All LSOAs have a higher proportion of residents working in education than the national average (10%). Oxford 004b has 26% of residents within this sector.
- In Oxford 007c 10% of residents also work in ‘Professional scientific and technical activities’, and in Oxford 005b, 10% work in the construction sector.
- The proportion of people working on a full-time basis is above the national average (39%) in all LSOAs, particularly Oxford 007c where 50% of residents are employed on a full time basis. Table 2 shows that unemployment is above the national average (4.4%) in Oxford 005a, 005b and 005c, but significantly below average in Oxford 006d and 007c, refer to Figure 3 and 4 for location of LSOAs.

Table 2 Unemployment levels (economically active) persons

Area	Levels of unemployed (economically active) persons
England	4.4%
Oxford	3.2%
South Oxfordshire 002a	2%
Oxford 004b	2.3%
Oxford 005a	5.5%
Oxford 005b	5.7%
Oxford 005c	5.4%
Oxford 005d	3.6%
Oxford 006d	1.9%
Oxford 007a	4%
Oxford 007c	1.7%
Oxford 007e	3%

5.3 Levels of education

5.3.1 The proportion of people age 16 and over with 5 or more GCSEs are significantly higher than the national average (15%) in Oxford 005d, with 27% of residents. Oxford 006d is significantly below the national average, with only 5% of residents.

5.3.2 The Education, Skills and Training Deprivation Domain of the IMD measures the lack of attainment and skills in the local population. Oxford 005a is the most deprived LSOA, falling in the 10% most deprived areas for education, skills and training. Oxford 006d and 005b fell within the 10% least deprived.

5.4 Health

5.4.1 Levels of self-rated health across the LSOAs are largely similar to the national average¹⁰. There is an exception in Oxford 002a where 9.6% rated their health as either 'Bad' or 'Very Bad', (English average- 5.5%) and in Oxford 006e, where 90.3% of respondents rated their health as 'Good' or 'Very Good' (English average- 81%). 77% of respondents to the MEL Research Report rated their health as 'very good' or 'good' in Barton.

5.4.2 Within the LSOAs, levels of health deprivation and disability found that Oxford 005a and 005b fall within the 20% most deprived LSOAs. This IMD domain measures the risk of premature death and impairment of quality of life through poor physical or mental health. It also considers morbidity, disability and premature mortality. The other LSOAs measures in the area fall within the 20-30% least deprived.

5.4.3 Life expectancy at birth in Oxfordshire (2014) is 81 years for men and 84 years for women, both of which are 1 year above the national averages.

5.4.4 In Oxfordshire 218.3 deaths per 100,000 is related to smoking¹¹. In the MEL Research Report 31% of Barton respondents smoked and 52% of Barton respondents claimed to drink alcohol, 27% of which drank regularly each week.

5.4.5 Under 75 mortality rates from cardiovascular disease are below the national average (74) with 54 per 100,000 deaths¹². Under 75 mortality rates from cancer in Oxfordshire are above the national average (138) with 117 per 100,000 deaths. The MEL Research Report found 74% of Barton respondents had no family history of

¹⁰ Office for National Statistics (ONS) (2011) Census

¹¹ PHE [Accessed 22/03/2017]. Health Profiles. Oxfordshire.

¹² <https://fingertips.phe.org.uk/profile/health-profiles>

illness and one in ten mentioned a history of Type 2 Diabetes (11%) and/or Cancer (10%) in Barton.

- 5.4.6** The ‘Levels of Long term sick or Disabled’ within the Oxford 005a and 005c are considerably higher than the national average (4%) at 7%.
- 5.4.7** 60% of adults in Oxfordshire are classified as having ‘excess weight’. 61% of adults achieved at least 150 minutes of moderate physical exercise a week. 16% of children are classified as obese in Oxfordshire, below the national average of 20%. The MEL Research Report found approximately four in ten Barton respondents did at least 10 minutes of moderate activity every day.

5.5 Housing

Housing stock

- 5.5.1** The Oxfordshire Strategic Housing Market Assessment (OSHMA)¹³ outlines in 2011 there were 272,090 homes in Oxfordshire. Detached and semi-detached homes accounted for 60.7% of the 2011 stock and 66.1% had more three or more bedrooms.

Housing need

- 5.5.2** Planning Policy Statement 3 (PPS3) guidelines identify housing need as *‘the quantity of housing required for households who are unable to access suitable housing without financial assistance’*.
- 5.5.3** The OSHMA outlined the estimated level of housing need from existing households per annum in Oxfordshire is 1,011 households with nearly half of these being in Oxford. In South Oxfordshire 386 additional affordable housing would be needed per annum.

Housing tenure

- 5.5.4** The 2011 census profiles of households by housing tenure showed that Oxford 007c, 007c and 004b and South Oxford 002a are characterised by a high percentage of owner occupied housing and a low social and private renting. Oxford 005a, 006d, 005b and 007e have much higher levels of social and private renting (Table 3).

Table 3 Social and private renting

¹³ 2014 Oxfordshire Strategic Housing Market Assessment

Area	Owner Occupied (%)	Social Rented (%)	Private Rented (%)
England	63%	18%	17%
Oxford	47%	21%	28%
South Oxfordshire 002a	78%	9%	10%
Oxford 004b	82%	1%	15%
Oxford 005a	26%	42%	23%
Oxford 005c	48%	33%	18%
Oxford 005d	41%	39%	17%
Oxford 006d	37.5%	23%	37%
Oxford 006e	52%	9%	37%
Oxford 007a	65%	9%	25%
Oxford 007c	71%	3%	25%
Oxford 007e	49%	25%	23%

Barriers to housing and services

5.5.5

Barriers to housing and services is one of the seven domains used to determine the overall IMD score. This domain looks at household overcrowding, homelessness, difficulty of access to owner-occupation and distance to a number of services. South Oxfordshire 002a suffers from the highest level of deprivation, falling in the 10% most deprived areas. Oxford 005a, 005b and 006e fell within the 20% least deprived areas.

Housing prices

5.5.6

The OSHMA reported that as of January 2014, the average home sold for £235,000 in Oxfordshire, close to the July 2016 national average of £216, 750¹⁴. Private rental costs in 2014 were on average £425 for a

¹⁴ UK House Price Index (HPI) July 2016

room through to £1625 per month with homes of four or more bedrooms. The report identified that Oxford in particular had higher house prices and rental costs.

Living environment

5.5.7 The Living Environment IMD domain looks at ‘indoor living’, which measures quality of housing, and ‘outdoor living’ which considers air quality and road traffic accidents. Oxford 006e is the least deprived LSOA within this red-line boundary, falling within the 20% least deprived for living environment. The other LSOAs fell within the middle percentiles, at 40-50% least/most deprived.

5.6 Crime

5.6.1 According to detailed Police UK statistics¹⁵ between February 2016 and January 2017 in the ‘Oxford Barton/Risinghurst’ area, anti-social behaviour was the most reported crime, making up 26% of all reported crime. This is slightly lower than the national average of 30% across the same period. Violence and sexual offences made up 24%, above the national average of 21% of reported crimes across the same period.

5.7 Traffic

5.7.1 The rate of road injuries in Oxfordshire are higher than average at 53 per 100,000 compared with an England average of 39.

5.8 Vulnerable groups

5.8.1 **Ethnic minority groups:** Ethnic minority communities often suffer elevated levels of poverty, violence, unemployment and ill health. Many ethnic minority groups are likely to experience unemployment rates at twice the national average, with direct impacts upon wealth and socio-economic class. There is a strong link between poverty and well-being. Those in high-risk groups for poverty are also more likely to suffer health problems. The community profile shows that although ethnic diversity is low within the study area, there are notable populations of other ethnic groups in some LSOAs.

5.8.2 **People with disabilities:** People with disabilities often lack the mobility to access services outside the local vicinity and rely more heavily on access to reliable public transport services. The community

¹⁵ Detailed Statistics for Oxford Barton/Risinghurst. Crime between February 2016 and January 2017. Police.UK

health profile indicates that in some areas the number of long-term sick or disabled individuals was above the national average.

- 5.8.3 Low-income / low socio-economic groups:** Differences in social grade are linked to health inequalities. In general, those on low incomes have more limited access to facilities such as sports and leisure facilities, and a lower propensity to access fresh food needed for a balanced diet. They are also less likely to own their own transport and therefore suffer disproportionately from poor access to services and facilities and a lack of public transport.
- 5.8.4 Older people:** Poor mobility and a greater reliance on public transport can make it more difficult for older people to access health and social services, shops and community facilities. Older people are therefore likely to be disproportionately affected by poor access to services and facilities. Adverse effects resulting from negative changes to transport and access can include poorer diet, reduced exercise and isolation from the surrounding community. Older people are also more likely to suffer from the detrimental health effects associated with poor environmental conditions such as dust and noise impacts associated with construction. The community profile shows that in most parts of the study area, the proportion of older people is equal to or above the national average.
- 5.8.5 Long-term illness sufferers:** This group is more likely to suffer from a lack of access to local services as they often lack the mobility to access services outside the local vicinity. Long term illness sufferers are also more likely to suffer from the detrimental health effects associated with poor environmental conditions such as dust and noise impacts associated with construction. The community health profile indicates that in some areas the number of long-term sick or disabled individuals was above the national average.

6 Assessment of health effects

6.1 Housing

Literature Review

- 6.1.1** Housing quality affects both physical and mental health. WHO research¹⁶ suggests that *'increased housing satisfaction following housing improvement is strongly linked to improvements in mental health'* and *'housing satisfaction may be linked to life satisfaction and mental health'*. Housing security provides financial and social stability, and the WHO study has identified links between secure home ownership and health: *'financially secure home ownership has been linked to improved health, which may be due to better housing quality and feelings of security'*¹⁷.
- 6.1.2** A systematic review of housing interventions¹⁸ concluded that high quality, well designed housing and improvements to the quality and design of housing can lead to health benefits.
- 6.1.3** Research findings published since November 2013 are consistent with the findings discussed above. A recent study has identified that learning outcomes in children may be particularly affected by housing quality i.e. the relatively poorer quality of flats compared to houses in the social rented sector¹⁹.
- 6.1.4** Involuntary or prompted relocation of people from their homes has been shown to play a determinative role in health outcomes. Disturbance to people's living and social environment and routine may precipitate stress and health deterioration in relocated individuals²⁰.

Determinant baseline

- 6.1.5** The Barton Park development site lies within Oxford 005A demographic area of the Census 2011. Owner occupation is particularly low in the local area (26%) compared to Oxford (47%), and England averages (63%). In contrast, social rented housing is

¹⁶ Thomson, H. and Petticrew, M., 2005, Is housing improvement a potential health improvement strategy, World Health Organisation Europe

¹⁷https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/464597/English_Indices_of_Deprivation_2015_-_Research_Report.pdf

¹⁸ Thomson H, Thomas S, Sellstrom E (2009) The health impacts of housing improvement: a systematic review of intervention studies from 1887 to 2007 Journal of Public Health 99 p681–692

¹⁹ Basim, B., 2015, The association between social housing type and children's developmental outcomes, Institute of Education, UCL.

²⁰ Heller, T., 1982, The Effects of Involuntary Residential Relocation: A Review, American Journal of Community Psychology, 10 (4): 471- 492, cited in BAA, 2008, The G2 Project: A Health Impact Assessment, Annex A. HIA Gateway, West Midlands Public Health Observatory.

extremely high in the area at 42% whereas Oxford has just 14% social rented stock and the average for the whole of England is 18%.

- 6.1.6** Savills Research²¹ estimates that property prices are set to fall across the Country by 25% since their peak in 2007/08, as a result the issue of affordability is reducing. However in Oxford property prices are well above national and regional averages, therefore affordability for those on low incomes will always be a problem in this area.

Assessment of potential health effects

Construction phase

- 6.1.7** During the redevelopment of Underhill Circus, the occupants within housing that will be redeveloped will be temporarily relocated. This could cause adverse effects on residents' wellbeing through increased levels of stress, uncertainty, and temporary disruption of social and support networks. However, this will be offset by positive effects, such as the anticipation of improved housing and neighbourhood quality during the operational phase.

- 6.1.8** During the construction period, the level of construction employment is expected to be 81 personnel with approximately 32% of site staff residing in Oxfordshire. The size of the construction workforce seeking accommodation in the area will be small relative to the availability of property in the Oxford area, and therefore it is not anticipated that there would be any impact on the local rental property market

Operational phase

- 6.1.9** At the operational phase, the Barton Park development and Underhill Circus redevelopment has the potential to have positive effects on health through the provision of much needed, high quality housing to meet the identified need within the borough. This assessment is based on the known links between housing quality and design and health and wellbeing.
- 6.1.10** The noise assessment undertaken as part of the EIA outlines that existing dwellings close to the A40 will benefit from the Barton Park development as the speed limit will be reduced from 70mph to 50mph which will reduce noise levels. However no mitigation measures are available to protect existing properties on Barton Village Road, Fettiplace Road and Northway from a negligible to moderate increase in road traffic noise when the site is operational, although measures

²¹ <http://pdf.euro.savills.co.uk/uk/residential-property-focus-uk/residential-property-focus-q4-2016.pdf>

proposed elsewhere will help to reduce traffic flows on these roads and limit increases in road traffic accordingly.

6.1.11 The quantitative air quality assessment shows that concentrations of Nitrogen Dioxide (NO₂) and airbourne particulates (PM₁₀) would decrease at all assessment points in and around the site, creating a permanent, direct, long term beneficial effect on local air quality. Annual average PM₁₀ and NO₂ concentrations affecting the Barton Park development are predicted to be below the national air quality objective. This is primarily due to the reduction of the speed limit on the A40 from 70mph to 50mph between the Headington Roundabout and Marsh Lane, alongside other transport and Travel Plan measures. Therefore not operational adverse health effects are expected.

6.1.12 Barton Park development adheres to the following ‘Lifetime Homes Standard’²² and ‘Buildings for Life’²³ criteria:

- Parking (width or widening capability) - parking provision will be made that makes getting into and out of the vehicle as convenient as possible for the widest range of people including those with reduced mobility and/or those with children;
- Approach to dwelling from parking will enable convenient movement between the vehicle and dwelling for the widest range of people including those with reduced mobility and/or those with children;
- Approach to housing entrances will enable convenient movement along other approach routes to dwelling for those with reduced mobility;
- Communal stairs and lifts will be provided to as many people as possible to enable access to dwellings above the entrance level;
- WC and bathroom walls will provide grab rails if possible to assist with independent use of WC and bathroom facilities for older people and/or those with reduced mobility;
- Glazing and window handle heights will enable people to have a reasonable line of sight from a seated position in the living room and to use at least one window for ventilation in each room, particularly for wheelchair users; and
- Rooms will have adequate space for turning a wheelchair in dining areas and living rooms and adequate circulation space for wheelchairs elsewhere.

6.1.13 40% of housing provision within the Barton Park development and 50% within the Underhill Circus redevelopment will be affordable

²² <http://www.lifetimehomes.org.uk/pages/3-approach-to-all-entrances.html>

²³ <http://www.designcouncil.org.uk/resources/guide/building-life-12-third-edition>

housing. Affordable housing will benefit the local population who are on low incomes and particularly older people in poor quality social housing who are more vulnerable to adverse effects such as fuel poverty and young people who struggle to get on the housing market. Affordable housing can revitalise the existing Barton area and promote economic and social integration while building community cohesion.

- 6.1.14** The Underhill Circus redevelopment will result in improved thermal performance of housing, which will benefit the health and wellbeing of the occupants. More energy efficient housing will reduce the expense of heating and cooling homes, which will be particularly beneficial for occupants on low incomes. Other improvements to benefitting the comfort and health of occupants will include better sound absorption and improved internal air quality. These will be particularly beneficial for vulnerable people such as children, older people and those who have chronic illnesses.

6.2 Access to healthcare services and other social infrastructure

Literature Review

- 6.2.1** Services and social infrastructure such as healthcare, education, social networks and social interaction can impact on people's physical and mental health²⁴. 5% of adults in Great Britain have reported feeling a sense of isolation due to difficulties accessing local shops and services²⁵. Furthermore over a fifth of adults reported knowing someone who felt a sense of isolation due to these difficulties.
- 6.2.2** The impact of mental ill-health is not only detrimental to the individual and to society more generally, but also places more pressure on existing support services, not least upon the 40% of mental health trusts that have reportedly experienced reductions in income in both 2013/14 and 2014/15²⁶. Many other public services have also been subject to cuts and have consequently had to reduce or limit their provisions (one notable example being the 44 local authority-funded children's centres across Oxfordshire which are to be reduced to 18 centres this years as a result of government funding cuts)²⁷.
- 6.2.3** Access to healthcare is important for communities as healthcare offers information, screening, prevention and treatments. Restricted access to

²⁴ Global Research Network on Urban Health Equity (2010) Improving urban health equity through action on the social and environmental determinants of health

²⁵ Randall, C., 2012, Measuring National Well-being - Where we Live – 2012, Office for National Statistics

²⁶ The Kings Fund. (2015a). Mental Health Under Pressure: Briefing, p.1.

²⁷ BBC News. (1st August 2016). High Court backs Oxfordshire children's centre closures

healthcare prevents patients gaining necessary treatments and information. Access to healthcare services is affected by transport modes, availability of financial support for those on low incomes and the location of healthcare services. Groups impacted by disability and older people are more dependent on health and social care services²⁸ therefore these groups are more vulnerable if access to health and social care services becomes restricted.

- 6.2.4** Access to social infrastructure including leisure and cultural facilities is a determinant of health and well-being. According to research ‘leisure activities can have a positive effect on people’s physical, social, emotional and cognitive health through prevention, coping (adjustment, remediation, diversion), and transcendence’²⁹. People participate in cultural activities for a number of reasons including personal growth and development, to learn new skills, enjoyment and entertainment and as a ‘means of creative expression’, or ‘to meet new people’ and to ‘pass on cultural traditions’³⁰.

Determinant baseline

- 6.2.5** Oxford city centre is the principal retail centre in Oxfordshire. Journey times to the city centre from the site are approximately 20 minutes by bicycle, 25 – 30 minutes by bus and 15 minutes by car. The site is approximately one kilometre from Headington district centre, which offers a range of shops and services including two small supermarkets, banks and a post office. Smaller local centres serve Barton and Northway.
- 6.2.6** A high proportion of residents of the city of Oxford work in the city with particular strengths in health, education and knowledge based industries. In addition to the mixed use city and district centres, local jobs are concentrated in the John Radcliffe Hospital and close to the ring road in Oxford Business Park and Horspath Industrial Estate.
- 6.2.7** Primary schools are located to serve existing residential areas and there is one existing primary school within an easy walking distance of the Barton Park development, Bayards Hill primary school. For secondary education the application site lies approximately 2.5km from the Cheney School and 3km from the Oxford Spires Academy. There will be a pedestrian and cycle crossing at the new junction on the A40.
- 6.2.8** The Barton Park development site lies approximately one kilometre from a number of churches, a doctor’s surgery and library in Headington. Further health facilities are located at Marston and

²⁸ Hamer, L., 2004, Improving patient access to health services: a national review and case studies of current approaches, Health Development Agency

²⁹ Caldwell, L.L. (2005) Leisure and health: Why is leisure therapeutic?

³⁰ New Zealand Government, 2007, Social Report: Leisure and Recreation, Ministry of Social Development, New Zealand Government

Barton. Barton Park development site is in close proximity to the John Radcliffe Hospital. The Bury Knowle surgery branch is based within the Barton Neighbourhood Centre providing a range of clinical services.

6.2.9 Barton Leisure centre and Oxsrad Leisure centre are also readily accessible. The Barton Park development site lies immediately adjacent to the northern section of the A40 Oxford ring-road. This is a dual carriageway, which currently separates Barton Park development site and existing settlement at Barton from communities in Headington, Northway and the main centre of Oxford itself. There is currently no direct access from the A40 into the site; the closest junctions are at Marston to the west and Headington to the east. A public right of way along the eastern boundary of the SSE land runs south until it is broken by the A40. It then continues south along Stokes Place, connecting with Headington.

Assessment of potential health effects

Construction phase

6.2.10 During construction there will be some congestion and delays along the A40 due to the new junction. This may cause increased journey times and a reduction in the reliability of bus services causing stress and frustration for nearby residents in Headington, Northway and Barton. This would have the potential to result in a short-term adverse effect for people sharing 'protected characteristics' under the Equality Act 2010, such as children, older people, disabled people, and pregnant women, who may have particular needs in terms of access to services such as education and healthcare.

Operational phase

6.2.11 During the operation phase, the Oxford City Centre (No.8) Bus route will be extended into the site for Barton and loop around the primary school via the secondary street. A new shuttle service to the John Radcliffe Hospital will also be provided via the new Western Junction. This will improve accessibility to occupants in both existing Barton and Barton Park development who do not own a car or who cannot drive due to mobility reasons.

6.2.12 Barton Park development will provide a community hub including a primary school which will be located at the heart of the new neighbourhood. The school will provide facilities and sports pitches that will also be accessible to the community.

6.2.13 Barton Neighbourhood Centre would also undergo refurbishment on its in-house Bury Knowle General Practice branch to meet growth in population. The proposed changes to the surgery include the following:

- Expansion of surgery space (double its existing size) and clinical services Physical improvements that are planned include three new consulting rooms, plus new group and counselling rooms, staff room/kitchen area, record storage, new external access, space to accommodate a dispensary/pharmacy and additional parking;
- Continuation and expansion of social prescribing service subject to funding; and
- Green prescription and augmentation of smoking cessation services – tentatively planned.

6.2.14 The proposed changes to the Bury Knowle satellite GP surgery will increase opportunities to access health care services for the existing community and the future community within Barton Park development.

6.2.15 There would be continuation and expansion of social prescribing service³¹ offered by the GP service within the Barton Neighbourhood Centre. Recognising that people’s health is determined primarily by a range of social, economic and environmental factors, social prescribing seeks to address people’s needs in a holistic way. It also aims to support individuals to take greater control of their own health. Those who could benefit from social prescribing schemes include people with mild or long-term mental health problems, vulnerable groups, people who are socially isolated, and those who frequently attend either primary or secondary health care.

6.3 Access to open space and nature

Literature Review

6.3.1 A Forestry Commission³² review identified the key health benefits of green space as:

- Long and short term physical benefits associated with obesity, life expectancy, heart rate and blood pressure;
- Attention and cognitive benefits associated with restoration, mood and self-esteem;
- Physical activity benefits associated with the use of greenspace;

³¹ Social prescribing enables GPs, nurses and other primary care professionals to refer people to a range of local, non-clinical services

³² O’Brien, L., Williams, K., Stewart, A.,(2010), Urban health and health inequalities and the role of urban forestry in Britain: A review, The Research Agency of the Forest Commission

- Self-reported benefits in terms of health and life satisfaction; and
- Community cohesion benefits through social contact fostered by greenspace’.

6.3.2 A Greenspace Scotland³³ review identified links to mental health, stating that ‘*studies consistently show a relationship between levels of stress and access to urban green spaces*’ and identified ‘*activity and exercise, natural daylight, stimulation of the senses and aesthetic experience*’ as potential factors in reducing stress.

6.3.3 Physical activity can be encouraged by improving accessibility to green spaces, ensuring green spaces are of a high quality and attractive³⁴. Evidence indicates that green space is most valuable as a resource for physical activity when used by high volumes of people therefore spaces need to be accessible, of sufficient size, and connected to residential areas³⁵.

6.3.4 Evidence demonstrates that ‘an inactive lifestyle has a substantial, negative impact on both individual and public health – specifically, physical inactivity is a primary contributor to a broad range of chronic diseases such as coronary heart disease, stroke, diabetes and some cancers’³⁶. Even relatively small increases in physical activity are associated with some protection against chronic diseases and an improved quality of life.

6.3.5 Positive mental health effects associated with exercise have been highlighted in evidence reviews³⁷. Mental health effects can include improvements in people with generalised anxiety disorders including phobias, panic attacks and stress disorders.

Determinant baseline

6.3.6 The Draft Open Space Strategy³⁸ includes mapping for the Barton and Sandhills Ward and identifies the following Open Space:

- The Barton Allotments – ref 173 – identified as allotments – comprising approximately 2.49 ha. This currently includes:

³³ Croucher, K., Myers, L., and Bretherton, J., (2007), The links between greenspace and health: a critical literature review, Greenspace Scotland

³⁴ At least five a week: evidence on the impact of physical activity and its relationship to health, Department of Health, Physical Activity, Health Improvement and Prevention, April 2004

³⁵ Croucher K., Myers L., and Ellaway A., (2007), Health and the Physical Characteristics of Urban Neighbourhoods: a Critical Literature Review

³⁶ http://www.dchs.nhs.uk/your_health_useful_info/cyph/cyph_resources_and_support_materials/active_lifestyles

³⁷ Sport England. 2007. ‘Active Design. Promoting opportunities for sport and physical activity through good design’. Supported by CABE, DH & DCMS. Sport England.

³⁸

[https://www.dropbox.com/sh/b51w43q4lljkcp3/6ObiMxa5MB?preview=4.13 Barton Open Space Statement.pdf](https://www.dropbox.com/sh/b51w43q4lljkcp3/6ObiMxa5MB?preview=4.13_Barton_Open_Space_Statement.pdf)

- allotment plots;
 - communal areas and pathways; and
 - This excludes uncultivated allotment land which is inaccessible.
- The Barton Recreation Ground – ref 226 – Identified as a park <2 ha –. This currently includes:
 - 1 adult football pitch (approximately 0.7 ha);
 - Space for 1 junior pitch (approximately 0.5 ha);
 - 1 multi-use games area (MUGA) comprising fenced area of hardstanding (approximately 0.15 ha);
 - Sport pavilion/ hardstanding /car parking area comprising approximately 0.18 ha;
 - 1 locally equipped area of play (LEAP) comprising approximately 0.08 ha;
 - Bowling green (unused for a number of years) comprising approximately 0.2 ha; and
 - Ancillary/informal space.
 - The Barton Nature Park – ref 331 – comprising 0.9 ha. This area is currently a mown area of grass with informal planting. The Barton Area Action Plan³⁹ provides that “Ecological assessments show that the nature park has relatively low ecological value”.

6.3.7 In addition, existing and future residents of Barton benefit from the following additional spaces within 500 metres of the site that will remain unchanged:

- Bernwood Park (Bonnie Banks as known locally), Barton (ref 247) comprising play neighbourhood play provision and informal green space;
- Play Barton (Fettiplace Road) (ref 220) comprising neighbourhood equipped play area, MUGA), adult football pitch and informal greenspace; and
- Foxwell Drive (ref 87) comprising neighbourhood play provision and informal green space.

Assessment of potential health effects

Construction phase

6.3.8 Construction noise and dust and the visual impact from construction equipment may impact the amenity of the existing open space for residents. This may deter people from using the area for physical activity, reducing their access to the health benefits of exercise.

Operational phase

³⁹ https://www.oxford.gov.uk/downloads/download/424/barton_area_action_plan

6.3.9 Barton Park development will include:

- A Linear Park comprising 10% of the site area;
- Replacement sports provision including a 3G synthetic turf pitch with floodlighting what will allow enhanced use across the year;
- Greenways within the development;
- A new community garden on land to the south of the existing allotments.

6.3.10 Barton Park development seeks to ensure that there is no net loss in the quantum of open space, particularly existing sports provision, cultivated allotments and ecological area. The development seeks to ensure a “like-for-like” provision of existing open spaces, while providing facilities to a higher quality where appropriate. The development will provide a significant additional area of useable public open space for both the existing and proposed communities at Barton, complementing and linking to the existing open space provision in Barton. It will also benefit from existing facilities that are close by including Play Barton and Foxwell Drive with improved linkages for pedestrians.

6.3.11 Barton Park development will facilitate a net improvement of sport provision for the existing and future communities with replacement of existing sport pitches and multi-use games area with vastly improved facilities that will be usable for longer periods across the year than they are currently through the provision of floodlighting and improved surfaces. The development provides a range of play spaces for children and young people, natural play is the key objective and direct links to the Country Park will provide children with a rich natural environment to explore and enjoy. The provision of new play spaces encourages physical activity in children. This will be particularly beneficial where childhood obesity levels have been identified as high (see Section 5.4).

6.3.12 The new community garden on land to south of the existing allotments will be complimented with new opportunities for the community to grow food together enhancing community cohesion.

6.3.13 The Underhill Circus redevelopment aims to improve Green Belt sight lines from the existing public routes neighbouring the site and to improve access to green space.

6.3.14 Both Barton Park development and Underhill Circus redevelopment has the potential to benefit physical and mental health and wellbeing through the provision of new areas of open space and/or improving access to areas of open space.

6.4 Air quality, noise and neighbourhood amenity

6.4.1 In this assessment, the term ‘neighbourhood quality’ is used to assess the combined impacts of noise, air emissions, traffic and visual impacts on the quality and amenity of the local environment in which people live.

Literature Review

Traffic

6.4.2 Transport accounts for around 29% of the UK’s CO2 emissions⁴⁰. The relationships between transport and health are multiple and complex, and transport also provides access to work, education, social networks and services, which can improve people’s opportunities⁴¹. There is strong evidence that traffic interventions reduce road accidents, while there is some inconclusive evidence that they improve physical activity⁴². The impact of transport on health inequalities is greatest when looking at deaths from road traffic injuries, especially for children, as they are four times more likely to be hit by a car in the 10% most deprived wards than in the least deprived wards⁴³. Fatal accidents on the road are also particularly high among children of parents classified as never having worked or as long-term unemployed.

6.4.3 One of the findings of the Marmot Review (2011) indicates that there is strong evidence that reductions in traffic to reduce air pollution are successful in improving health and poorer communities have a higher prevalence of cardio-respiratory and other diseases.

Noise

6.4.4 According to the World Health Organization (WHO), *‘in some situations noise may adversely affect the health and wellbeing of individuals or populations’*. The WHO recognises the health linkages between environmental noise and annoyance, sleep disturbance and physiological responses such as cardiovascular disease. There are a wide range of non-auditory health effects that may be associated with exposure to environmental noise. In the everyday environment, the response of an individual to noise is more likely to be behavioural or psychological (i.e. non-auditory) than physiological.

⁴⁰ Environment Agency. Addressing environmental inequalities: position statement. 2004.

⁴¹ Great Britain. Department of the Environment Transport, University of North London. Transport Research and Consultancy. Social exclusion and the provision and availability of public transport: report by TRaC at the University of North London for the Department of the Environment, Transport and the Regions. London: Department of the Environment, Transport and the Regions, 2000.

⁴² Boyce T, Patel S, The Kings Fund. The Health Impacts of Spatial Planning Decisions. 2009.

⁴³ Grayling T, Institute for Public Policy Research. Streets ahead: safe and liveable streets for children. London: IPPR, 2002.

Air quality

6.4.5 Evidence on the links between road traffic emissions and respiratory health is well established, based on numerous research studies. The main health damaging pollutants released as emissions from road traffic are particulate matter (PM₁₀) and nitrogen dioxide (NO₂)⁴⁴. It is generally accepted that particles greater than 10 µm in diameter (PM₁₀) do not penetrate the lungs to cause respiratory health problems. However, dust can cause eye, nose and throat irritation and lead to deposition on cars, windows and property⁴⁵.

Landscape and visual effects

6.4.6 Research into the effects of the visual and aesthetic environment on well-being is mainly focused on the psychological effects of 'natural' versus 'man-made' or urban views. In general, evidence shows a preference for views of natural over man-made scenes. These links are often tied in with each other, related issues such as opportunities for exercise and contact with nature. Open spaces and natural scenes can improve physical health, comfort, and mental well-being, as well as provide opportunities to improve people's quality of life and social interactions.

Determinant baseline

6.4.7 The centre of Oxford has been declared as an Air Quality Management Area (AQMA) since 2001 (with modifications in 2003), based upon the exceedence of the annual mean objective for NO₂ of 40 µg/m³. The Barton Park development and Underhill Circus redevelopment site is located within the County city-wide AQMA with the A40 running along south of the sites. The main influence on local air quality is emissions from road traffic using the local road network. The A40 borders Barton Park development along the southern boundary, and the A420, which lies approximately between 800 to 1400 metres south. Whereas, the Underhill Circus redevelopment site is situated approximately 450m from the A40 junction.

6.4.8 The noise climate on the Barton Park development site is dominated by road traffic from the A40, which has been predicted using noise modelling; noise from the substation can be heard in close proximity. The air quality assessment undertaken as part of the EIA used future road traffic noise data within the modelling. With the exception of the nearest sections of the A40, roads have only been considered where potentially significant increases in flows are predicted. Significant changes are not predicted in the flows on the A40, but which are of

⁴⁴ COMEAP (2015). Statement on the evidence for the effects of Nitrogen Dioxide on health. Committee on the medical effects of air pollutants.

⁴⁵ The control of dust and emissions from construction and demolition Best Practice Guidance, Greater London Authority (2006)

interest generally and so have also been considered in the associated assessments.

6.4.9 The primary views from most of the Barton Park development site are of the agricultural land and woodland on the hillsides to the north, reinforcing the rural character. There are views towards the south but these are mostly contained by the dense tree growth along the A40, and on the slopes of the northern slopes of Headington. The electricity substation is a dominant feature in the central part of the site, detracting from the rural character, but is not prominent from most areas of the site. Traffic on the A40 is a visible influence detracting from the rural character and particularly from the northern part of the site. The eastern part of the site, including the recreation ground, allotments and nature area, are closer to the established residential development at Barton and therefore have a more urban edge character. The site is also perceived as part of the rural landscape extending to the edge of Oxford as experienced from the A40, public footpaths and the northern slopes of Headington, although views of the site are generally limited by the effects of topography, development and vegetation.

6.4.10 Underhill Circus is an urbanised area mainly consisting of flats and a row of shops.

Assessment of potential health effects

Construction phase

- 6.4.11** A qualitative assessment of the potential effects on local air quality from construction activities has been carried out for this phase of the Barton Park development. The assessment identified that during the construction phase, effects are expected to be minor on nearby residents with mitigation measures in place.
- 6.4.12** Noise levels will be generated by the construction activities for both the Barton Park development and Underhill Circus redevelopment but these are expected to be localised and temporary in nature. During the building phase, noise levels will be mitigated by using the quietest and least vibration construction methods reducing the impact of noise on nearby residents to avoid affecting their neighbourhood's amenity.
- 6.4.13** For both Barton and Underhill Circus sites, as a result of construction, there will be temporary and short-term negative effects including the erection of security fencing, temporary lighting and the introduction of cranes and other machinery which would temporarily affect the resident's amenity of their neighbourhood.

Operational phase

6.4.14 During the operational stage, without mitigation measures in place the proposed development would adversely affect air quality, however the proposed mitigation measures included within the proposed Travel Plan would result in a substantial improvement in air quality at a number of existing assessment receptors when compared to the future baseline (i.e. without development). Mitigation measures include:

- Conversion of the B4495/ B4150 junction from a double mini-roundabout to a traffic signal controlled junction;
- Lane marking changes at the Headington roundabout;
- Bus services to the proposed development;
- Reduction of the speed limit on the A40 to 50mph between the Headington Roundabout and Marsh Lane; and
- Travel Plan measures.

6.4.15 The improvement in air quality will be moderate beneficial to residents who suffer from respiratory diseases within the Barton Park development and nearby communities such as Barton and Northway.

6.4.16 The Barton Park proposal minimises the impacts of air pollution caused by traffic by promoting walking and cycling over car use. There will be good provision of bike storage in civic spaces and parks. The development will have electric car charging points at the centre. In addition, ease of cycling both within the proposed development and to connections and local facilities. Therefore the proposal is not only minimising the impacts of air pollution on residents but also promoting the use of active travel.

6.4.17 Existing dwellings close to the A40 will benefit from Barton Park development as the speed limit will be reduced from 70mph to 50mph which will reduce noise levels reducing the impact on resident's amenity of their neighbourhood and reduce the impact on the occupant's health and wellbeing.

6.4.18 The wooded setting of the Old Headington Conservation Area will still be appreciated from the network of public footpaths within the Barton Park site, although there will be unavoidable obstruction of views from those sections of footpath close to and passing through the site. Important views to Oxford City core from the Elsfield ridge will not be interrupted by the Barton Park development, although the proposals will be visible to the east side of the views. The proposed development creates a limited number of negative landscape and visual effects relating to on-site landscape features and on-site character, the setting and character of the wider landscape, views from local residences and some viewpoints from footpaths near the site.

- 6.4.19** The Underhill Circus redevelopment will improve Green Belt sight lines from the existing public routes neighbouring the site, this will have a positive effect on the resident's health, comfort, and mental well-being.

6.5 Accessibility and active travel

Literature Review

- 6.5.1** Active travel applies to modes of transport that require physical activity (i.e. cycling and walking), in contrast to modes that require little physical effort such as motor vehicles. Therefore it is the physical activity associated with active travel that brings about health effects.
- 6.5.2** The positive effects of physical activity on physical health was summarised in the Department of Health's 2011 report⁴⁶ which suggests that:
- 6.5.3** *'Regular physical activity can reduce the risk of many chronic conditions including coronary heart disease, stroke, type 2 diabetes, cancer, obesity, mental health problems and musculoskeletal conditions. Even relatively small increases in physical activity are associated with some protection against chronic diseases and an improved quality of life.'*
- 6.5.4** An ever-growing body of research also provides consistent evidence of a relationship between physical activity and mental capacity, especially in older and elderly people. Longitudinal studies show not only that physical activity is associated with a reduced risk of age-related cognitive decline, but also that regular physical activity is linked to a lower risk of Alzheimer's disease (AD) and other forms of dementia⁴⁷. Age UK's guidelines also outlines examples of practical ways to promote older people to become more active, including Nordic walking, Tai-Chi sessions aimed at older people, walking groups, and an 'easy rider' scheme (using a fixed-wheel bike, tricycles and tandems to aid balance)⁴⁸.

Determinant baseline

- 6.5.5** There is an existing Public Right of Way (PRoW) passing through the Barton Park development site along the northern boundary of the site

⁴⁶ CMO (2011) Start Active, Stay Active: A report on physical activity from the four home countries' Chief Medical Officers, Department of Health, Physical Activity, Health Improvement and Protection.

⁴⁷ Government Office for Science. (2008). Mental Capital and Wellbeing: Making the most of ourselves in the 21st century. State-of-Science Review: SR-E24, p.2.

⁴⁸ Age UK. (2010). Promoting Mental Health and Well-being in Later Life: A Guide for Commissioners of Older People's Services

to the east of the substation and connects Northway via an underpass under the A40.

- 6.5.6** There are no existing cycleways or footpaths going through the Underhill Circus site.

Assessment of potential health effects

Construction Phase

- 6.5.7** Pedestrian amenity reflects the relative pleasantness of a journey for pedestrians, which includes changes in traffic volume and pavement width/ separation from vehicles. Construction traffic for the Barton Park development will be routed along roads that already has limited provision for pedestrians in order to limit the negative effect on pedestrians.
- 6.5.1** During construction, any effects on pedestrian amenity will be mitigated by ensuring the continued provision of pedestrian facilities wherever possible. The existing PRow passing through the Barton Park development site will be diverted as part of the individual plot developments and accommodated within the main primary street in terms of crossing this route. Where pedestrian routes are closed or diverted, clear signage will be provided to show pedestrians the alternative route. Where pedestrians are required to cross the road to continue their journey temporary dropped kerbs will be provided.

Operational Phase

- 6.5.2** The Barton Park development proposal promotes walking and cycling over car use. There will be good provision of bike storage in Commercial Square, Community Hub square and parks. For residents the bicycle will be the most readily accessible mode of transport. There will be ease of cycling both within the proposed development and to connections and local facilities. Therefore the proposal is not only minimising the impacts of air pollution on residents but also promoting the use of active travel.
- 6.5.3** The layout of the Barton Park development has been designed to encourage residents to walk via a network of parks and green spaces which will thread their way through the new neighbourhood and provide the opportunity for circular walks to the open countryside. The movement network opens up links between open and natural spaces and the public realm. Maximising the opportunity for residents to walk and cycle, either using the street network or designated footpaths and cycleways.
- 6.5.4** New pedestrian routes are proposed throughout the Barton Park development site, a new pedestrian and cycle crossing is proposed on

the A40, and the existing underpass will be upgraded, which will have a minor positive effect on pedestrian amenity.

- 6.5.5** The Underhill Circus redevelopment proposal includes pedestrianised zones and improving green areas to encourage walking in the area which would have positive effects on the resident's health and wellbeing.

6.6 Crime reduction and community safety

Literature Review

- 6.6.1** 'Good Housing and Good Health'⁴⁹ concludes '*it is likely that investment in housing improvements, particularly rehousing and major refurbishments, will help improve residents' mental health...improve feelings of safety, enhance levels of area and housing satisfaction and increase community involvement*'. However this research also notes that the redevelopment process can cause '*detrimental effects for some, and those who experience stress during redevelopment may report poorer mental health for a period of time*'.
- 6.6.2** Community safety is crucial in determining health and wellbeing. It has been stated that '*a healthy community protects and improves the quality of life for its citizens, promotes healthy behaviours and minimizes hazards for its residents, and preserves the natural environment.*' The effects of crime on health include both direct effects, for example through violence, and indirect social and psychological effects arising from fear of crime⁵⁰.
- 6.6.3** A recent review undertaken by Lorenc et al⁵¹ looked at qualitative evidence on the fear of crime and the environment. The report notes that most research on crime and health focused on the direct health effects suffered by victims of crime. However, indirect effects of crime and its broader influence on individuals and communities may also have important effects on wellbeing.
- 6.6.4** Social inequalities are particularly marked in urban environments, with different population subgroups experiencing impacts to different degrees. Older people are identified as being particularly likely to suffer as a result of fear of crime.

⁴⁹ Gilbertson J, Green G, Ormandy D, Thomson H (2005). *Good Housing and Good Health?* Housing Corporation and Care Services Improvement Partnership, London.

⁵⁰ British Medical Association (1999). 'Health and Environmental Impact Assessment: an Integrated Approach'. Earthscan Publications Ltd.

⁵¹ Lorenc, T., Petticrew, M., Whitehead, M., Neary, D., Clayton, S., Wright, K., Thomson, H., Cummins, S., Sowden, A., Renton, (2012). A. Fear of crime and the environment: systematic review of UK qualitative evidence, BMC Public Health. 13: 496.

Determinant baseline

- 6.6.1** According to detailed Police.UK statistics⁵² between February 2016 and January 2017 in the ‘Oxford Barton/Risinghurst’ area, anti-social behaviour was the most reported crime, making up 26% of all reported crime. This is slightly lower than the national average of 30% across the same period. Violence and sexual offences made up 24%, above the national average of 21% of reported crimes across the same period.

Assessment of potential health effects

Construction Phase

- 6.6.2** Increased fear of crime caused by the presence of vacant building sites which can create intimidating environments if not properly lit and managed.
- 6.6.3** The addition of construction related traffic on local roads affecting their use by cyclists and altering perceptions of road safety for both cyclists and pedestrians, and particularly more ‘vulnerable’ users such as children and older people.

Operational Phase

- 6.6.4** The roads through the proposed development will be subject to a 20mph speed limit to mitigate any negative effects on accidents and safety. It is proposed that the primary street linking through the new development will be designed to be perceived by drivers as a low speed urban street and keep speeds very low by means of traffic calming measures including parallel and perpendicular on street parking and pedestrian activity.
- 6.6.5** The speed limit on the A40 between the Headington Roundabout and the B4150 junction will be reduced from 70mph to 50mph (subject to a Traffic Regulation Order), which will reduce the risk and severity of accidents.
- 6.6.6** The proposals for the A40 junction, Primary Street, linear park and greenways have been designed in accordance with the Barton Design Code⁵³ and approved outline application parameter plans. This has meant that key security by design principles, such as defensible space, natural surveillance and active frontage, are already embedded in the layout and design. The detailed proposals have therefore sought to further strengthen crime prevention measures.

⁵² Detailed Statistics for Oxford Barton/Risinghurst. Crime between February 2016 and January 2017. Police.UK

⁵³ <http://www.bartonparkoxford.com/vision/design-code.aspx>

6.6.7 Both Barton Park development and Underhill Circus redevelopment proposals have incorporated design techniques to help make people feel secure and avoid creating ‘gated communities’. The streetscape and public realm design of Barton Park seeks to facilitate community interaction e.g. tertiary streets provide opportunities for pocket parks which provide safe informal play and help with community interaction. The layout is based on a perimeter block structure, which maximises natural surveillance of the streets and public realm. Importantly, the delineation between public and private areas is very well defined, with features such as internal parking courts and public access to the boundary of rear properties limited. Particular regard has to be paid to the design of end-of-terrace buildings by the introduction of specific corner buildings with doors and windows within the gable ends with natural surveillance from habitable rooms and main entrances to secondary dwellings. Where public access to the side or rear of properties is available these spaces must be adequately overlooked.

6.6.8 Underhill Circus redevelopment proposal provides a pedestrianised zone (boulevard) for community gatherings and associated public amenity providing safe informal play and help with community interaction.

6.7 Access to healthy food

Literature Review

6.7.1 Access to healthy food and a nutritious diet can prevent health effects and chronic diseases related to obesity. Poor diet and nutrition, together with smoking and alcohol accounted for many coronary heart disease and cancer deaths⁵⁴.

6.7.2 A report by the Department of Health in 2011⁵⁵ noted England as one of the world’s leaders in obesity and excess weight which can increase health risks such as breathing problems, back pain, infertility, angina, gall bladder disease, liver disease, ovarian cancer, osteoarthritis and stroke.

6.7.3 Furthermore the report detailed the most prevalent health risks for an obese man can include:

- five times more likely to develop type 2 diabetes;
- three times more likely to develop cancer of the colon; and

⁵⁴ Department of Health, (2004). ‘Choosing Health Summaries: Diet and Nutrition’. Public Health White Paper. Department of Health.

⁵⁵ Department of Health (2011) Healthy Lives, Healthy People: A call to action on obesity in England.

- more than two and a half times more likely to develop high blood pressure – a major risk factor for stroke and heart disease.

6.7.4 An obese woman, compared with a healthy weight woman, is:

- almost thirteen times more likely to develop type 2 diabetes;
- more than four times more likely to develop high blood pressure; and
- more than three times more likely to have a heart attack.

6.7.5 It has been noted that people on low incomes suffer disproportionately from diet-related diseases. Difficulties are wider than a lack of money, relating to worse access to transport and to shops that sell good quality affordable food, particularly fruit and vegetables.

6.7.6 Oxfordshire is one of the most affluent counties in England, and yet one in four children in the city of Oxford live below the poverty line⁵⁶. Other studies identify that food poverty exists in Oxford, but little is known about the extent and nature of the problem, or how it is experienced by those who endure it. A qualitative study was undertaken by Good Food Oxford (GFO)⁵⁷ in Barton and Rose Hill in 2015 to explore the existence nature and underlying drivers of food poverty in Oxford from the perspective of residents in two of Oxford's most deprived wards, Barton and Rose Hill. 57 residents were interviewed, as well as 12 professionals working in Oxford's regeneration neighbourhoods, and they were asked about difficulties related to food in the home, the relevance of GFO's core messages, and community activities that could help to relieve the difficulties.

6.7.7 The findings of the study found that over one half of the interviewees had experience of food poverty. For most, food poverty manifests as uncertainty and anxiety about food, poor dietary quality and limited diversity, and/or having to reduce the quantity of food eaten or skip meals. For the majority, diets are lacking in sufficient fruit and vegetables, and for some, they are high in processed foods with excess fat, salt and sugar. The most common underlying driver of food poverty is economic – low income relative to food prices.

⁵⁶ Child poverty 2011, HM Revenue and Customs in Fransham, M., 2015. Our Changing City. Social Trends in Oxford. Oxford Strategic Partnership. Oxford City Council. February 2015. Available at:

https://www.oxford.gov.uk/downloads/file/2123/social_trends_in_oxford

⁵⁷ Handsford and Friedman (2015), Food Poverty in Oxford: A qualitative study in Barton and Rose Hill with recommendations for Good Food Oxford.

Determinant baseline

- 6.7.8** The existing parade of shops at Underhill Circus accommodates a chip shop, a pharmacy, post office and a small convenience shop.
- 6.7.9** There are existing allotments to the south east corner of the Barton Park development site comprising approximately 2.49 ha of allotment land. This currently includes:
- allotment plots;
 - communal areas and pathways; and
 - This excludes uncultivated allotment land which is inaccessible.

Assessment of potential health effects

Construction phase

- 6.7.10** During the construction phase, the existing allotments will be expanded as part of Barton Park development therefore the allotments will be temporarily unavailable to the public affecting their accessibility to fresh fruit and vegetable they grow themselves. However, it is not known where the people who rent the allotments live and so it is unknown whether the residents of Barton would be directly affected.

Operational phase

- 6.7.11** The Barton Healthy New Town Programme as part of the Barton Park development is supporting development of initiatives to facilitate the supply of local food with Good Food Oxford supporting connections between allotments, farmer's markets, food stores and residents.
- 6.7.12** As part of the Underhill Circus redevelopment, there are proposals for the local convenience store to sell fresh fruit and vegetables, this would increase the resident's daily accessibility to fresh fruit and vegetables. The chip shop will likely remain in the parade of shops. Chips can be seen as a convenient cheap meal in an area where there is high proportion of households on low income. This would have negative connotations on health.

6.8 Access to work and training

Literature Review

- 6.8.1** The creation of new job opportunities during both the construction and operational phases of the proposed development would have a positive

effect on health and wellbeing for those that secure jobs. This assessment is based on the known links between employment and mental health, and the positive health effects of increased wealth on access to services, food and other health determinants.

- 6.8.2** The Marmot Review (2010)⁵⁸ looked at the differences in health and well-being between social groups. The Review identified the importance of work for health: *'being in good employment is protective of health. Conversely, unemployment contributes to poor health.'*
- 6.8.3** The documented linkages between access to work and health are often related to the negative impacts of unemployment, rather than the positive impacts of employment. However, it follows that employment is generally expected to be positive in health terms.
- 6.8.4** Employment is related to social and psychological well-being; a study commissioned by the Department of Work and Pensions⁵⁹ found that *'work meets important psychosocial needs in societies where employment is the norm'* and that *'work is central to individual identity, social roles and social status'*.
- 6.8.5** Training is a form of work involving the application of physical or mental effort to improve skills, knowledge or other personal resources which can improve chances of employment and career progression.

Determinant baseline

- 6.8.6** Most LSOAs were in the 20-30% most deprived areas for income deprivation. Oxford 006d was the least deprived, falling in the 10% least income deprived areas. Oxford 006d and 004b have the least employment deprivation, falling within the 10% least deprived areas. Oxford 005c and 006e are the most deprived of the assessed LSOAs, falling within the 20% most deprived areas for employment.
- 6.8.7** The number of working age individuals claiming a key benefit was considerably higher in Oxford 005a and 005b than the national average (15%), at 22% and 24% respectively. Oxford 006d had significantly fewer individuals claiming, at only 5% of the population.
- 6.8.8** Three industries were identified as employing a large proportion of residents:
- 'Wholesale and retail trade; repair of motor vehicles': All LSOAs had over 10% of residents working within this sector with exception to Oxford 007a, 006d and 005b. However, all

⁵⁸ Marmot M. (2010) Fair Society, Healthy Lives: A Strategic Review of Inequalities in England. London: University College London

⁵⁹ Waddell, G and Burton, A.K. (2006) Is work good for health and wellbeing?, Department for Work and Pensions

areas still had less people working in this sector than the national average (15.9%).

- ‘Human health and social work’: All LSOAs had a significantly higher proportion of residents working within health and social care than the national average (12.4%). For example, 43% of residents in Oxford 006d worked in this sector.
- ‘Education’: All LSOAs had a higher proportion of residents working in education than the national average (10%). For example, Oxford 004b had 26% of residents within this sector.

6.8.9 In Oxford 007c 10% of residents also worked in ‘Professional scientific and technical activities’, and in Oxford 005b, 10% worked in the construction sector.

6.8.10 Individuals working on a full-time basis were above the national average (39%) in all LSOAs, particularly Oxford 007c where 50% of residents were employed on a full time basis. Table 2 in Section 5.2 shows that unemployment was above the national average (4.4%) in Oxford 005a, 005b and 005c, but significantly below average in Oxford 006d and 007c.

6.8.11 Income deprivation is a measure of families being on very low incomes whether in or out of work, whereas employment deprivation is based on involuntary exclusion of people of working age from work.

6.8.12 Most LSOAs were in the 20-30% most deprived areas for income deprivation. Oxford 006d was the least deprived, falling in the 10% least income deprived areas. Oxford 006d and 004b have the least employment deprivation, falling within the 10% least deprived areas. Oxford 005c and 006e are the most deprived of the assessed LSOAs, falling within the 20% most deprived areas for employment.

6.8.13 The number of working age individuals claiming a key benefit was considerably higher in Oxford 005a and 005b than the national average (15%), at 22% and 24% respectively. Oxford 006d had significantly fewer individuals claiming, at only 5% of the population.

6.8.14 Primary schools are located to serve existing residential areas and there are no primary schools within an easy walking distance of the Barton Park development site, highlighting the importance of a new school for the development. For secondary education the site lies approximately 2.5km from the Cheney School and 3km from the Oxford Spires Academy.

6.8.15 The proportion of people age 16 and over with 5 or more GCSEs was significantly higher than the national average (15%) in Oxford 005d, with 27% of residents. Oxford 006d was significantly below the national average, with only 5% of residents.

- 6.8.16** The Education, Skills and Training Deprivation Domain of the IMD measures the lack of attainment and skills in the local population. Oxford 005a was the most deprived LSOA, falling in the 10% most deprived areas for education, skills and training. Oxford 006d and 005b fell within the 10% least deprived.

Assessment of potential health effects

Construction phase

- 6.8.17** During the construction phase for both the Barton Park development and Underhill Circus redevelopment there will be temporary job provision. During the construction period, the level of construction employment is expected to be 81 personnel with approximately 32% of site staff residing in Oxfordshire. The presence of construction employment in the local area would also have an indirect beneficial impact on the local economy, for example by helping to boost trade in local shops and cafes.
- 6.8.18** The presence of construction workers in the local area will financially benefit local service industries such as shops and cafes.

Operational phase

- 6.8.1** Barton Community Employment Plan (CEP) requires that Barton Park development should ensure for 10% of the onsite work force to have Oxfordshire post code, and 3% apprenticeship during construction.
- 6.8.2** During the operational phase of Barton Park development there would be employment opportunities due to the commercial centre with food store, primary school, community hub, sports pitches and pavilion this will help reduce unemployment levels and prevent negative health effects associated with unemployment. It is estimated that a net total of 206 new FTE (Full Time Equivalent) jobs could be generated from the Proposed Development with almost 40% of these jobs (82 FTE jobs) generated from the new food superstore.
- 6.8.3** During the Neighbourhood Centre upgrade of service provision, employment opportunities would be available due to expansion of clinical services. This will help reduce unemployment levels and prevent negative health effects associated with unemployment.
- 6.8.4** The Barton Park development includes a new 1.5FE Primary School that will also function as a community hub. The primary school will provide learning opportunities for children in nearby existing communities and the future community of Barton Park development.
- 6.8.5** The Barton Park development will include a bus service linking the proposed development to Oxford city centre increasing accessibility to employment within the city centre. The Oxford City Centre (No.8)

Bus route will be extended into the site for Barton and loop around the primary school via the secondary street. A new shuttle service to the John Radcliffe Hospital will also be provided via the new Western Junction.

6.8.6 There is potential for healthcare outreach services such as mother and baby clubs, adult learning, advice surgeries etc. to be provided as part of flexible community floorspace within the Community Hub as part of the Barton Park development. This will provide opportunities for training and guidance to residents increasing their opportunities for employment and preventing negative health effects associated with unemployment.

6.9 Social cohesion and lifetime neighbourhoods

Literature Review

6.9.1 Social cohesion is defined as the quality of social relationships and existence of trust, mutual obligations and respect in communities or the wider society⁶⁰. This is closely related to levels of inequality or exclusion within a given community.

6.9.2 Social cohesion has been linked to volunteering, the empowerment of individuals and ethnic diversity which drive social cohesion but on the contrary inequalities within a population and crime and safety can erode social cohesion within a community⁶¹.

6.9.3 The physical environment can directly influence social capital and social cohesion, as social networks rely on high quality, accessible spaces where people can meet to pursue their enthusiasms and form relationships.

6.9.4 The implementation of Social Housing Clearance programmes and their Social Impact (2003)⁶² found that *'the demolition and redevelopment process is associated with a range of negative effects, even where residents support... redevelopment'*. The review identified negative effects such as:

- 'the anticipation of disruption' causing stress; and
- 'decanting can result in extra costs for residents and... can exacerbate stress... can undermine community stability and support networks.

⁶⁰ WHO (2003) Social determinants of health: the solid facts 2nd edition.

⁶¹ Department for Communities and Local Government (2008) Predictors of community cohesion: multi-level modelling of the 2005 Citizenship Survey

⁶² Welsh Assembly Government (2003). The implementation of Social Housing Clearance programmes and their Social Impact'. Welsh Assembly, Cardiff.

- 6.9.5** Cave et al (2002)⁶³ reviewed more generally the ‘*impact of regeneration and neighbourhood renewal on health and inequalities*’, with housing being one of the three main themes of their review.
- 6.9.6** Cave et al (2002) observe that ‘*while there is potential for health gain for the people moving into improved housing, the health effects for the wider population may be mixed...those with the most severe housing needs and some marginalised groups may be further excluded or displaced*’.

Determinant baseline

- 6.9.7** There is no existing community on the Barton Park development site as it is a vacant post-industrial site. The nearest residential communities are Barton and Northway.
- 6.9.8** Northway Community Centre and Barton Neighbourhood Centre are located within short proximity of Barton Park development site. Barton Neighbourhood Centre is situated on the western boundary of the Underhill Circus redevelopment site.
- 6.9.9** Barton leisure centre is situated approximately 500m south east from Underhill Circus and Barton Community Pavilion is located approximately 620m west to Underhill Circus.
- 6.9.10** Underhill Circus has a parade of shops consisting of a post office, pharmacy, chip shop and local convenience store.
- 6.9.11** Northway Church is situated approximately 260m south of the Barton Park development site and St Andrews Church in Headington is located approximately 390m south of Barton Park site.

Assessment of potential health effects

Construction Phase

- 6.9.12** During the construction phase of the Underhill Circus redevelopment, the occupants within housing that will be redeveloped could be temporarily relocated causing possible stress and loss of social network support to the residents during relocation.

Operational phase

- 6.9.1** Both Barton Park development and Underhill Circus redevelopment proposals have incorporated design to help make people feel secure and avoid creating ‘gated communities’. The streetscape and public realm design of Barton Park seeks to facilitate community interaction

⁶³ Cave B, Coutts A (2002). *The impact of regeneration and neighbourhood renewal on health and inequalities*. Queen Mary College, University of London.

e.g. tertiary streets provide opportunities for pocket parks which provide safe informal play and help with community interaction. Underhill Circus redevelopment proposal provides a pedestrianised zone (boulevard) for community gatherings and associated public amenity providing safe informal play and help with community interaction.

6.9.2 Barton Park development is expected to have additional benefits to the local community including a community hub, parks, primary school, commercial centre which form part of the mix of uses/community facilities and access to high-quality open spaces that could be utilised by residents in the local area.

6.9.3 Both Barton Park development and Underhill Circus redevelopment provides opportunities for the voluntary and community sectors. For instance, the Barton Park development is facilitating opportunities for the voluntary and community sectors such as the community hub which will address social isolation and enhance community cohesion. The community hub will include spaces that can be utilised by a wide range of community groups. The upgrade to services provided by the Neighbourhood Centre at Barton will also facilitate opportunities for the voluntary and community sectors.

6.9.4 Barton Park development will connect with existing communities for instance linking up with Barton and Northway via bus services or cycleways/footpaths thus reducing community severance through improved commuting links and encourages community interactions.

6.9.5 There is a potential for animosity between residents in market and affordable housing, which could inhibit the creation of strong communities within the development. To avoid this, the Barton Park development will ensure that all properties are 'tenure blind' to avoid the creation of clear visual distinctions between tenure types.

6.9.6 Barton Park development will accord with lifetime neighbourhood principles, which include:

- Supporting residents to develop lifetime neighbourhoods;
- Empowerment - Resident-led activities to plan/deliver/evaluate features of lifetime neighbourhoods;
- Access - enabling residents to get out and about in the areas in which they live and connect with other people and services in the immediate neighbourhood and beyond;
- Services and amenities - neighbourhoods with a mix of residential, retail and employment uses. Affordable access to a range of services;
- Built and natural environments - Built environments that promote safe, inclusive access to key services and facilities. Outdoor spaces and buildings that promote social contact.

Locally accessible greenspace, and affordable access to natural environments;

- Social networks/well-being - Informal/formal opportunities and activities (social, learning/training, volunteering), where people feel safe and confident and which respect and reflect the needs of different ages, cultures and ethnicities; and
- Housing - A range of affordable housing choices based on inclusive design principles in order to meet the occupants' needs across the lifecourse – space/layout within homes designed to meet changing needs.

6.10 Minimising the use of resources

Literature Review

6.10.1 Reducing or minimising waste including disposal processes for construction as well as encouraging recycling at all levels can improve human health directly and indirectly by minimising environmental impact, such as air pollution⁶⁴.

6.10.2 Sending out waste from a development site to be sorted or disposed can increase vehicle movements, emissions and cause significant disruption including noise and dust which can contribute towards health problems for residents. See Section 6.4 for further details on the linkages to potential health effects from both air quality and dust, and noise impacts.

Determinant baseline

6.10.3 The existing residential flat developments at Underhill Circus have shared recycling bin stores which are emptied fortnightly. However if the wrong items are put in the recycling bin the contents will not be recycled and waste will build up in the bin store.

6.10.4 The existing flats are not constructed in line with sustainable design or sustainable materials.

Assessment of potential health effects

Construction Phase

6.10.5 Consideration of the prevention, minimisation and management of construction waste has been included in a Waste Management Strategy for the Barton Park development and the measures included will meet the general requirements of the Site Waste Management

⁶⁴ HUDU (2013). HUDU Planning for Health. Rapid Health Impact Assessment Tool. (NHS) London Healthy Urban Development Unit.

Plans Regulations. During construction of Barton Park development, waste will be separated into key waste groups. The contractor will provide a suitable area within the construction site for the separation of materials for recycling.

- 6.10.6** Generally the site construction works will seek to maintain a balance of the sub-soil excavations to avoid taking material off-site, where possible. Materials will be re-used on site during construction, sustainable materials will be used in the construction of the proposed development.

Operational phase

- 6.10.7** During operation of Barton Park development, residential units will incorporate sufficient internal waste storage containers to promote the separation of recycling and compostable materials at source.

- 6.10.8** The following water efficiency targets have been set for the Barton Park development:

- Domestic water use: 105 litres/person/day – in accordance with the Code for Sustainable Homes Level 4;
- Non-Domestic: Achieve 50% improvement over EA best practice benchmark for building type;
- Rainwater harvesting strategy implemented across the site, at either individual household or communal levels, potentially accompanied by some grey water recycling; and
- Scheme designed for water attenuation with green roofs, permeable surfacing and a fully integrated SUDs system.

6.11 Climate change

Literature Review

- 6.11.1** Climate change is the projected rise in global temperatures as a result of anthropogenic development which is likely to contribute to continued changes in weather patterns, rising sea levels and increased frequency and intensity of extreme weather events.

- 6.11.2** The UK Climate Projections (UKC09)⁶⁵ have stated that the UK should expect a shift generally towards wetter winters and a greater proportion of precipitation to fall as heavy events. There is a predicted rise in temperature and greater likelihood of drier summers has been suggested, but the various projections cover a wide range of outcomes from climate change.

- 6.11.3** There are direct impacts linking the environment and health such as heat-related effects, flooding and poor air quality and indirect impacts

⁶⁵ <http://ukclimateprojections.metoffice.gov.uk/21678>

such as fuel poverty, access to green space and disruption to services and access to items such as healthy food.

6.11.4 Many of the health impacts are therefore interrelated with the health determinants and associated health impacts previously mentioned.

6.11.5 Chalmers et al⁶⁶ concluded that certain people are expected to be the most vulnerable to climate change and this includes:

- poorly housed or non-mobile individuals;
- the population living in high risk places such as flood zones and coastal locations; and
- socially isolated or those individuals otherwise unable to adapt to change.

Determinant baseline

6.11.6 The Underhill Circus site falls within Flood Zone 1 on the Environment Agency (EA) Flood Maps. Flood Zone 1 is defined as having a low probability of flooding, land having a less than 1 in 1,000 annual probability of river or sea flooding.

6.11.7 The majority of the Barton Park development site lies within Flood Zone 1; only the northern part of the Site is shown as being at risk from fluvial flooding from the Bayswater Brook. Proposed development areas of the site closest to the Brook are within Flood Zone's 2 and 3A. Flood Zone 2 is defined as having a medium probability of flooding, land having between a 1 in 100 and 1 in 1,000 annual probability of river flooding. Flood Zone 3a is defined as having a high probability of flooding, land having a 1 in 100 or greater annual probability of river flooding.

6.11.8 According to UK Climate Projections (UKC09)⁶⁷ in 2080 in winter, the central estimates of change are projected to be between 2 and 3°C across most of the country, with slightly larger changes in the south east and slightly smaller in the north west of Britain. In summer a more pronounced south to north gradient exists with changes in some parts of southern England being just over 4°C and in parts of northern Scotland about 2.5°C.

Assessment of potential health effects

Construction Phase

6.11.9 The construction phase is not assessed to have any significant impacts on climate change.

⁶⁶ Chalmers H, Pilling A and Maiden T (2008) Adapting to the Differential Social Impacts of Climate Change in the UK

⁶⁷ <http://ukclimateprojections.metoffice.gov.uk/21678>

Operational Phase

- 6.11.10** It is proposed that the majority of Barton Park development homes will be heated by conventional standalone high efficiency gas condensing boilers. PV panels located on the roofs will then be used to meet the target of achieving a 20% regulated energy use contribution from renewable energy technologies.
- 6.11.11** The commercial areas in Phase 1 of the Barton Park development may be served by a central CHP led heating system operated under a private landlord system. Based on the development mix such a solution would allow Oxford City Council's 20% regulated renewable energy requirement to be easily met.
- 6.11.12** The primary school maybe heated by a standalone biomass boiler with high efficiency natural gas boilers for backup. As a qualifying renewable energy technology, the biomass boilers would allow the 20% regulated renewable energy requirement to be readily met. This energy strategy will ensure that Code for Sustainable Homes Level 4 and BREEAM Very Good can be met.
- 6.11.13** All Barton Park residential dwellings will be built in accordance with the 'fabric first' approach, meeting the requisite Fabric Energy Efficiency Standards (FEES) under Building Regulations part L1A. A range of options are available to meet the FEES, including high U-values for walls, windows, doors etc. through to thermal bridging and air permeability.
- 6.11.14** As rain will become more frequent with climate change, Barton Park development has a rainwater harvesting strategy implemented across the site at either individual household or communal levels, potentially accompanied by some grey water recycling. The scheme is designed for water attenuation with green roofs, permeable surfacing and a fully integrated SUDs system. The overall Surface Water strategy is to create a sustainable drainage system which as far as possible recreates the existing drainage regime within the site whilst providing the additional attenuation required to restrict runoff from the site to the Q Bar rate for storms up to the 1 in 100yr event.
- 6.11.15** The Underhill Circus redevelopment aims to improve existing fabric/materials used in the construction of flats, this will increase the energy efficiency of the building which would be a financial benefit to households on low incomes.

7 Recommendations

- 7.1.1** Where negative impacts on health have been identified in the HIA, recommendations are proposed to reduce any negative impacts and maximise any positive impacts on health outcomes from the Barton Park development and Underhill Circus redevelopment.
- 7.1.2** For the retrospective assessment of Barton Park, the recommendations aim to highlight potential improvements to the masterplan for learning purposes, and to inform future masterplans. Recommendations are also made to improve health outcomes through the detailed design, construction and ongoing management of the development.
- 7.1.3** Recommendations for the Underhill Circus redevelopment will be fed into the design process through design workshops and on-going discussions and meetings with the design team to ensure that issues related to health influence the final design.
- 7.1.4** Recommendations for the Barton Park development can be fed into future designs of healthy new towns for developers to take into account.

7.2 Housing quality and design

- 7.2.1** Informed and personalised support should be provided for the people who are temporarily relocating during the construction phase of the Underhill Circus redevelopment. Ensure people are housed as close as possible to the site and still can access schools and health and social care services.
- 7.2.1** At least 35% affordable housing should be provided in any phase of the Barton Park development to promote the establishment of a balanced community with high levels of social cohesion.
- 7.2.2** Future developments should continue to apply the ‘Principles of Inclusive Design’. (CABE, 2006) and ‘Inclusion by Design: Equality, Diversity and the Built Environment’ (CABE, 2008). For instance, buildings should avoid steps and replace them with a gentle incline between floors and see that doors are highly visible, lay non-slip mats and make automatic doors the first choice.
- 7.2.3** Future developments should continue to apply the Age Friendly Cities (UK) checklist of best practice recommendations⁶⁸. For instance, sufficient, affordable housing should be available in areas that are safe and close to services and the rest of the community.

⁶⁸ http://www.who.int/ageing/publications/Age_friendly_cities_checklist.pdf

7.3 Access to healthcare services and other social infrastructure

- 7.3.1** Future development proposals should consider the requirement for meeting spaces for all religious communities.
- 7.3.2** New developments of this scale should consider the potential requirement for additional/improved GP and hospital services to meet increased demand. In the case of the Barton Park development, consideration should be given to the capacity of Bury Knowle Satellite surgery within the Barton Neighbourhood Centre, and other surgeries nearby.
- 7.3.3** It is recommended that temporary impacts on access to services to Underhill Park residents relocated during construction are mitigated through effective community liaison. This should include timely publication of the programme of works and potential delays, a phone line and website through which people can ask for advice or lodge complaints, and a community liaison officer to respond to any complaints or queries.
- 7.3.4** The Barton Park development could integrate mental health specialists directly into the primary school. The role that schools can (and ultimately will need to) play in relation to their students' mental health should be considered as an opportunity to develop and implement new strategies and approaches around mental health sustention. The Government's Future in Mind report champions improving communications, referrals and access to support by '*integrating mental health specialists directly into schools*' they also suggest that schools should focus their attentions upon '*delivering mental health promotion and prevention activities*', which could potentially involve collaboration with mental health specialists and practitioners, GPs, and members of the community as well⁶⁹.
- 7.3.5** Both Barton Park and Underhill Circus redevelopment should ensure that a range of services to support older people in order to reduce demand for social care and emergency hospital admissions and improve older people's health and well-being. One approach could be the setting up of teleconferencing networks to develop people's social networks.
- 7.3.6** The Barton Park development should create a map of services in order to ensure that what is currently available is known and well understood by partner services, community leaders and members of the public.

⁶⁹ Oxfordshire Mind (2017), What does excellence look like in terms of considering the future mental health needs of the population of the Healthy New Town?

7.3.7 Both Barton Park and Underhill Circus redevelopment could establish a post of ‘Mental Health Coordinator’ for Barton. The coordinator would be responsible for promotion of mental health and wellbeing in Barton, potentially coordinating funding bids, supporting partnership working and running local campaigns.

7.4 Access to open space and nature

7.4.1 The food grown at the new community garden should be sold within the Commercial Square, e.g., a farmers market, which would be open to nearby communities. The new community garden should be open to existing residents in Barton to allow community cohesion.

7.4.2 In both Barton Park development and Underhill Circus redevelopment ensure that space intended for children is also designed to be high quality space for adults, a simple example of this would be to situate play areas near to spaces for adults, allowing children to play safely while their parents/carers can enjoy themselves.

7.4.3 In both Barton Park development and Underhill Circus redevelopment, explore physical ways of facilitating opportunities to exercise and play could be to build adventure areas in to streets and various routes so that children can ‘find the fun’ in walking; even having some games ‘drawn’ on to paths (such as snakes and ladders) or stepping stones built alongside the path, could contribute towards this⁷⁰.

7.4.4 For older children and young adults, making sure there are safe spaces for young people to meet and socialise productively can also be beneficial; the creation of youth groups or a youth ‘hub’ can help with this. A youth hub might facilitate more leisurely sociable pursuits (such as access to Wi-Fi, games, music, a pool table, movie nights, musical instruments, etc.), but can also facilitate more productive opportunities around tutoring, for example, or perhaps even what the Future in Mind report terms a ‘one-stop-shop’ service to ‘provide mental health support and advice to children and young people in the community, in an accessible and welcoming environment’, both of which could be used to harness the skills and knowledge of volunteers⁶⁸.

7.4.5 Barton Park development could provide outdoor gyms which would provide a free and accessible alternative to joining a regular gym and would be accessible to people of all ages and physical ability.

⁷⁰ Oxfordshire Mind (2017), What does excellence look like in terms of considering the future mental health needs of the population of the Healthy New Town?

7.5 Air quality, noise and neighbourhood amenity

- 7.5.1** Monitoring of the Construction Environmental Management Plan (CEMP) measures should be undertaken to ensure that they are effective in mitigating impacts. Effective community liaison and response measures should be in place to deal quickly with any non-compliances or adverse impacts.
- 7.5.2** Barton Park development should introduce car club parking areas to encourage car sharing to reduce the amount of traffic and air pollution.
- 7.5.3** The Underhill Circus redevelopment proposal should include safe, secure bike storage facilities to promote cycling over car use.

7.6 Accessibility and active travel

- 7.6.1** The Underhill Circus redevelopment proposal should include bike storage and cycle lanes to promote cycling over car use.
- 7.6.2** Both the Barton Park development and Underhill Circus redevelopment should include appropriate signage to nearby local and strategic cycle/walking networks.
- 7.6.3** Bike lock spaces should be provided in all communal areas to avoid theft/damage to the bikes.
- 7.6.4** Both the Barton Park development and Underhill Circus redevelopment should ensure pedestrian and cycle paths allow easy and safe access to schools, parks and services. In addition, ensure there is enough benches and rest opportunities for pedestrian/cyclists, particularly for older people.

7.7 Crime reduction and community safety

- 7.7.1** The Underhill Circus redevelopment should include traffic management and calming measures to help reduce and minimise road injuries.
- 7.7.2** The contractor should be signed up to the Considerate Contractors Scheme and their Code of Considerate Practice which establishes basic principles for securing site safety and respecting neighbours.
- 7.7.3** Construction sites should be well lit and secured with CCTV to prevent sites from attracting antisocial behaviour and activities such as graffiti and fly tipping, and to reduce concerns about personal safety and security among local residents.
- 7.7.4** The Underhill Circus redevelopment proposal should incorporate elements to help design out crime such as natural surveillance and active frontage.

7.8 Access to healthy food

- 7.8.1** Existing and future residents of Barton could sell the fresh fruit and vegetables grown in the community garden at a weekly/monthly market within the Commercial Square to promote healthy eating and awareness. A ‘City Farm’ could be considered to grow fresh fruit/vegetables and where people can have access to animals. Introducing a community garden and vegetable growing initiative e.g. ‘Incredible Edible Barton’ was suggested at a previous workshop in March 2017 on Mental and Health Wellbeing. This was a suggestion of a potential holistic wellbeing project to combine physical activity, community building, cross-generational activity and promoting healthier diet.
- 7.8.2** Proposals should avoid contributing towards an over-concentration of hot food takeaways in the local area. In particular, the location of hot food takeaways close to schools should be restricted where possible.
- 7.8.3** Both Barton Park development and Underhill Circus redevelopment should consider that food shops, particularly healthy food shops, should be located in places that are easily accessible by walking, cycling or public transport. This is particularly important for people on low incomes in Barton who may not have access to a private car to travel to more distant supermarkets.
- 7.8.4** Food shops can also be important social centres in neighbourhoods, especially for elderly or disabled people or others who may be isolated and struggle to carry heavy shopping. Indeed, in some areas, neighbourhood shops are the only viable shopping option so supporting them is particularly important for these communities⁷¹.
- 7.8.5** As Barton contains a higher than average proportion of people from ethnic minority groups, food shops need to consider food catering to different cultural backgrounds e.g. halal meat.

7.9 Access to work and training

- 7.9.1** Contractors should consider opportunities to source local employment during construction and operation through promotion of jobs in local job centres and schools/colleges and to include apprentice and volunteering schemes.
- 7.9.2** The use of local suppliers during construction and operation should be promoted during the Underhill Circus redevelopment.
- 7.9.3** The Underhill Circus redevelopment should include managed and affordable workspace for local small businesses and start-ups.

⁷¹ Sustain (2011), Good planning for good food – How the planning system in England can support healthy and sustainable food.

7.9.4 Barton Neighbourhood Centre with the new GP provisions and counselling/group rooms could provide training to the community in Mental Health First Aid, a nationally recognised training course aimed at improving first response to Mental Health issues.

7.9.5 In both Barton Park development and existing Barton, make sure training and information is available for local workers (e.g. café workers, hairdressers, shop assistants) who may be in contact with victims for domestic violence.

7.10 Social cohesion and lifetime neighbourhoods

7.10.1 Informed and personalised support should be provided for the people who are temporarily relocating during the construction phase of the Underhill Circus redevelopment. Ensure people are housed as close as possible to the site and still can access schools and health and social care services.

7.10.2 The use of public art should be considered to foster community capital and enhance the public realm.

7.10.3 Run a ‘Wellbeing Challenge’ in the community to engage everyone, including children and young people.

7.10.4 It would be beneficial for any ‘community circles’ and peer support projects to be operated from the community hub as well, impressing the role of the space as a place for mutual support and learning within the community. One-off ‘showcasing’ days – where individual members of the community can offer to spend a day showing others how to learn a new skill (or enhance an existing one) – would be a relatively simple and practical way of encouraging members of the community to share what they know and to connect with others without the stress of teaching a formal class⁷².

7.10.5 Community facilities should respect cultural diversity and be fully accessible to all sections of the community.

7.10.6 Provision of community facilities should be planned to adequately provide for the expected increase in population over time.

7.10.7 An Information Hub for everything going on in Barton, both online (e.g. community website) and in hard copy (e.g. leaflets and weekly news updates) would be beneficial. An activity Calendar in newsletter, the ‘Hands on News’ publication is ideal for sharing information on what is happening in relation to Mental Health and Wellbeing in Barton.

⁷² Oxfordshire Mind (2017), What does excellence look like in terms of considering the future mental health needs of the population of the Healthy New Town?

7.10.8 Community facilities provided as part of both Barton Park development and Underhill Circus redevelopment should strive to be affordable for local people.

7.10.9 When Barton Park development opens to the public, ensure there are fun, accessible and multigenerational ‘kick-off events’ aimed at creating opportunities for people to meet, develop friendships and contacts in the local community, particularly for the existing Barton community to attend in order to avoid community tensions.

7.11 Minimising the use of resources

7.11.1 Opportunities for a community composting scheme should be explored. This would serve the purpose of an educational and awareness-raising resource to promote sustainable resource and waste management.

7.11.2 The design of Underhill Circus redevelopment should encourage recycling including re-use of building materials.

7.11.3 The detailed design of both Underhill Circus redevelopment and Barton Park development should take account of local sourcing, embodied energy and waste minimisation in appraisal of construction materials.

7.11.4 The sourcing and transport of trees and planting should, where possible, be sourced locally to minimise travel distance. The sustainability credentials of sources should be considered.

7.12 Climate change

7.12.1 Underhill Circus redevelopment proposal should incorporate energy efficiency measures in the new residential homes and renewable energy measures such as PV panels on roofs or biomass boilers.

7.12.2 Underhill Circus redevelopment should incorporate urban drainage systems such as fully integrated SUDs as rain will become more frequent with climate change.

Appendix A

Barton Park Masterplan

A1



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Linear park

Following the southern side of the Bayswater Brook, a major new public park will be accessible to both new and existing residents throughout this part of Oxford.

New bus routes

New bus routes through the proposed development will connect the neighbourhoods to Northway, Barton, and the city centre via key facilities such as the John Radcliffe Hospital.

Shopping

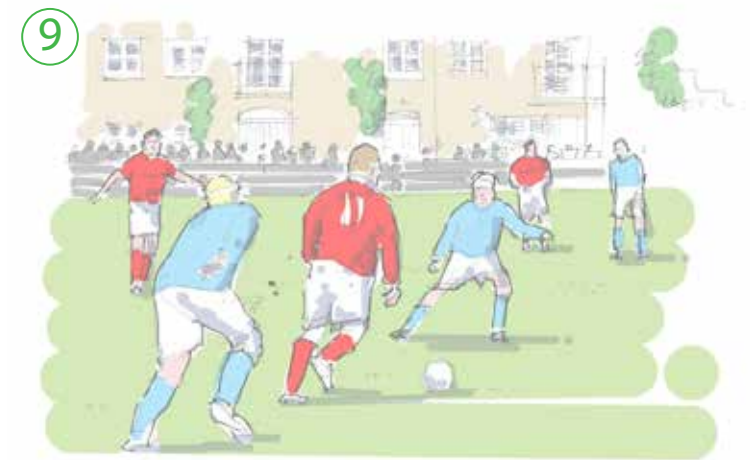
Medium size food store, hotel and cafe along the primary street, with a variety of family housing surrounding.

Primary street

Following an east / west route running through the centre of the new neighbourhoods with a variety of exciting spaces, safe pedestrian crossing points and public squares.

Community food growing

The existing allotments may be complemented with new opportunities for the community to grow food together.



Connection with Northway

A junction on the A40 will create a new bus, cycle and pedestrian link between Northway and the new neighbourhood.

Community hub & primary school

The community hub including a primary school will be located at the heart of the new neighbourhood. The school will share facilities (community rooms) and sports pitches with the community.

Green walks

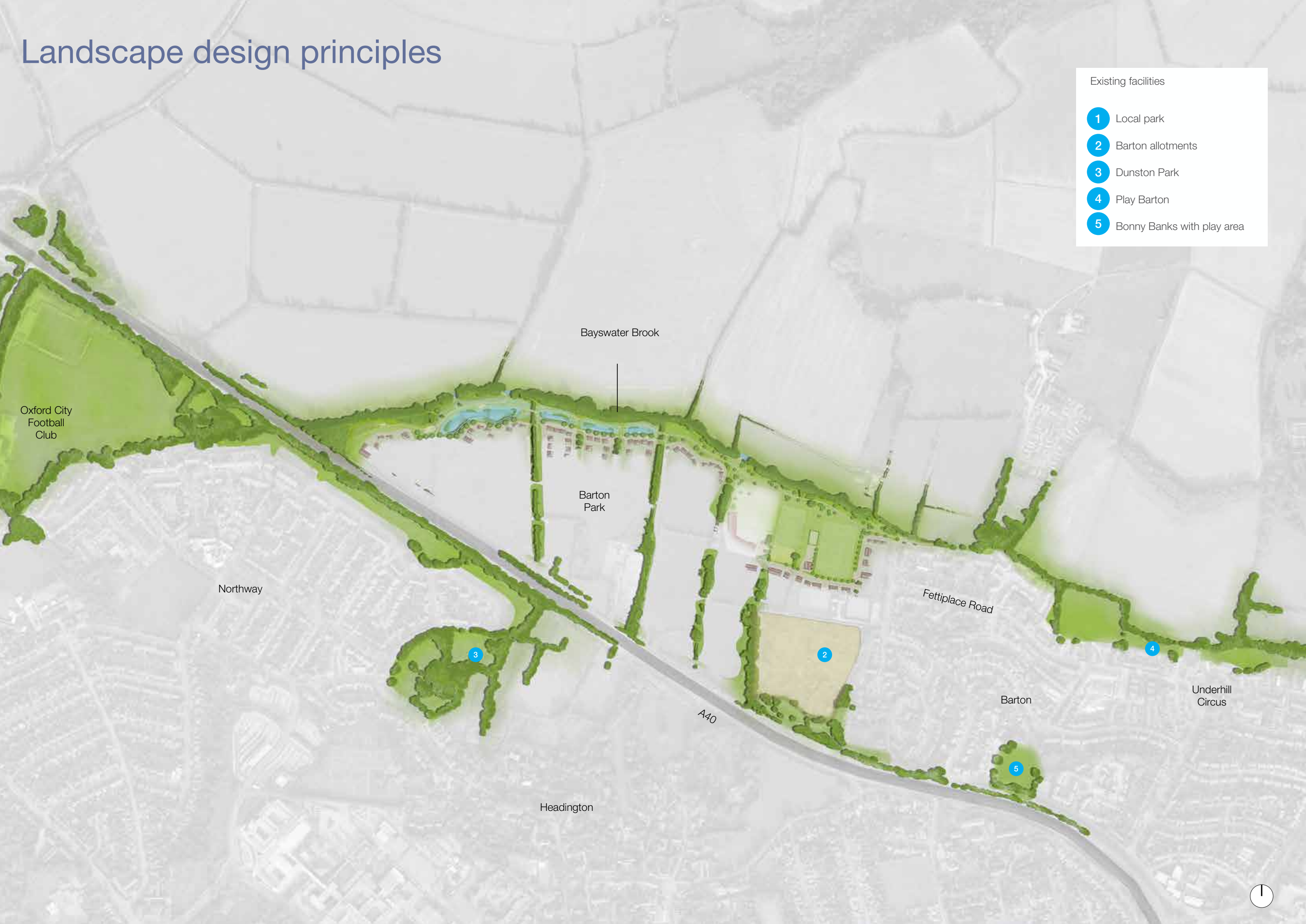
A network of parks and green spaces will thread their way through the new neighbourhood and provide the opportunity for circular walks which also link to the open countryside.

A replacement football pitch and new pavilion

A replacement football pitch will be located on the northern half of the landfill area. This pitch will be designed in a manner which will allow informal spectator facilities for clubs such as Barton United. A new pavilion will replace the existing structure.

Landscape design principles

- Existing facilities
- 1 Local park
 - 2 Barton allotments
 - 3 Dunston Park
 - 4 Play Barton
 - 5 Bonny Banks with play area



Oxford City Football Club

Bayswater Brook

Barton Park

Northway

Fettiplace Road

A40

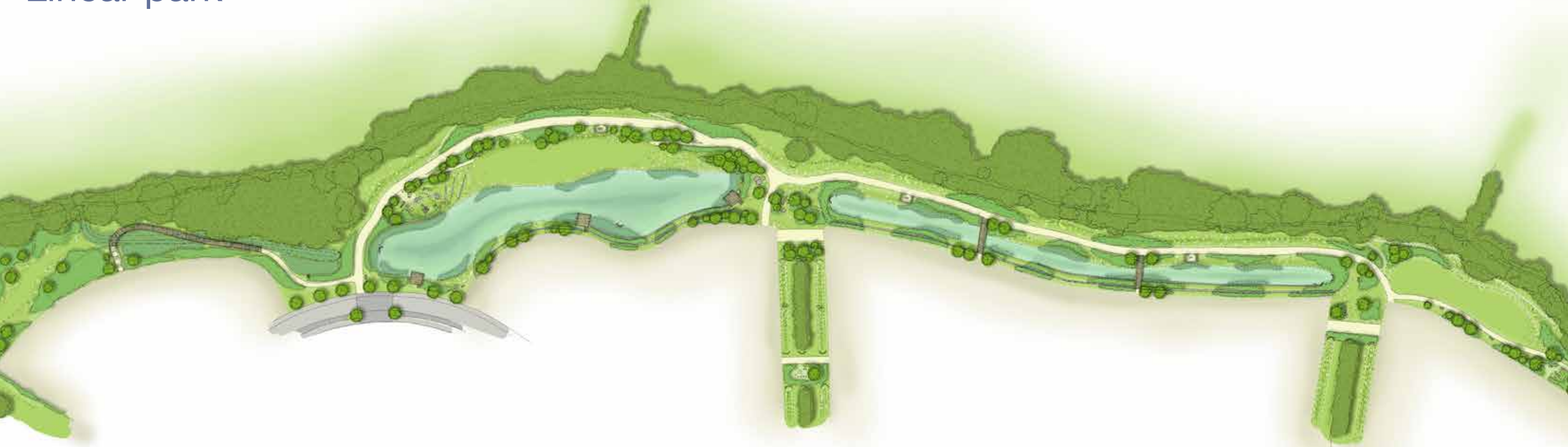
Barton

Underhill Circus

Headington



Linear park



Viewing platform

Permanent water

Informal seating on gabions Access to waterside edge

Dipping platform



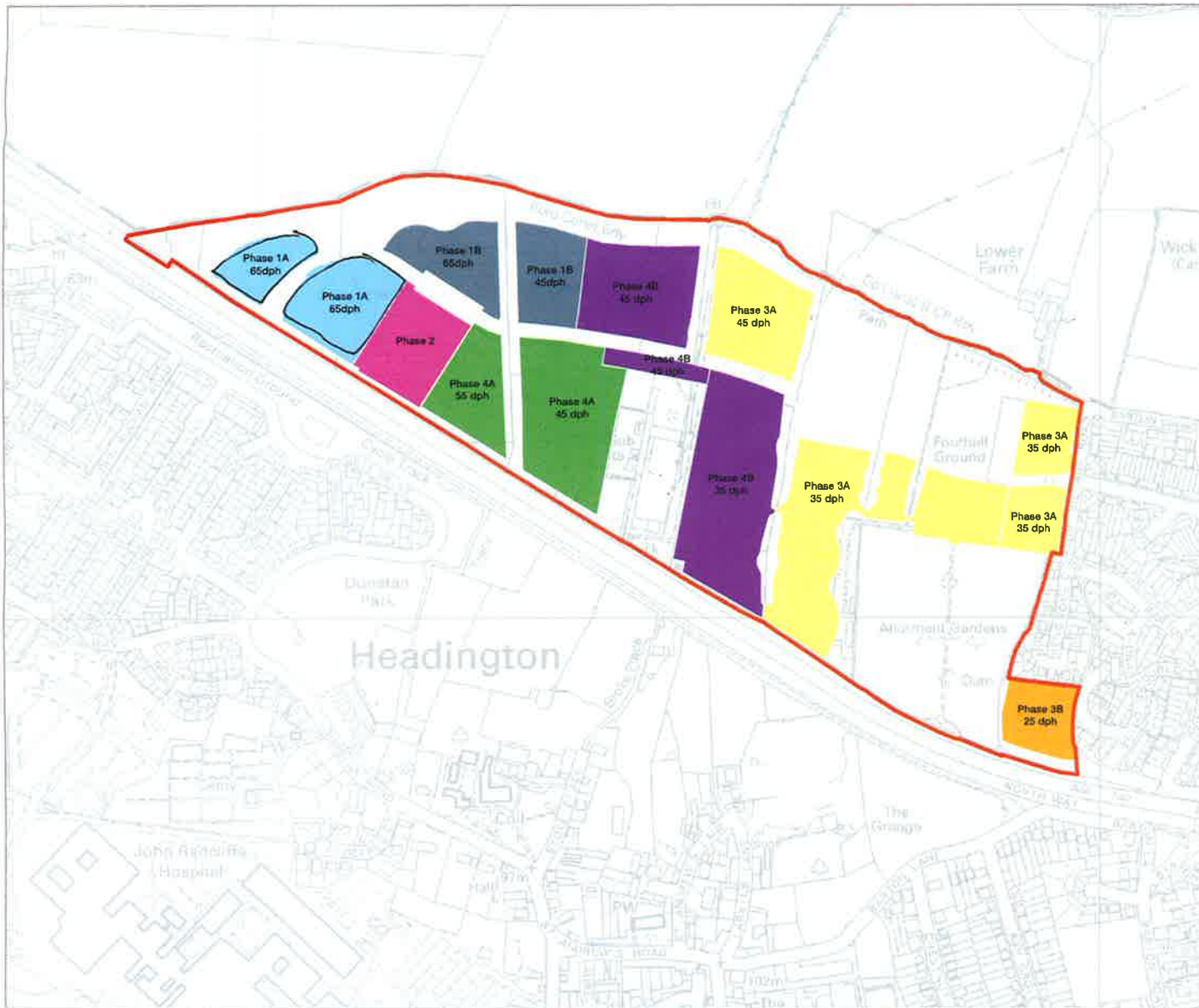


Local centre square

Appendix B

Barton Park Phasing Plan

B1



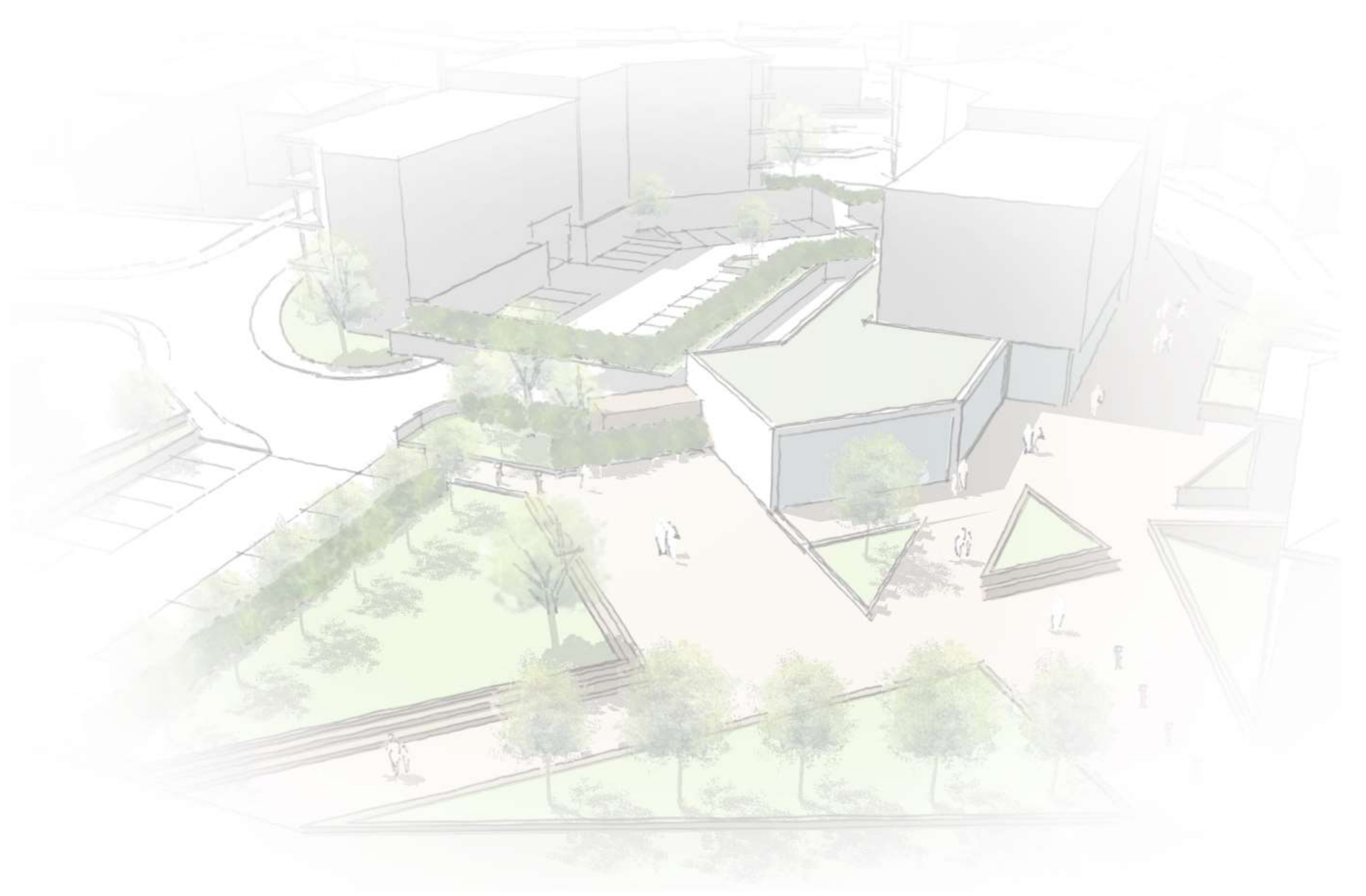
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PHASE	DENSITY RANGE	NO. UNITS	<i>on site</i>
Phase 1A - 1.721ha (4.252acre)	60-70dph	124 units	<i>Oct 16</i>
Phase 1B - 0.912ha (2.254acre)	60-70dph	66 units	<i>Apr 18</i>
Phase 1B - 0.898ha (2.218acre)	40-50dph	47 units	
Phase 2 - 1.112ha (2.747acre)	30-90dph	90 units	<i>TBC</i>
Phase 3A - 1.385ha (3.423acre)	40-50dph	62 units	<i>Nov 17</i>
Phase 3A - 4.143ha (10.238acre)	30-40dph	145 units	
Phase 3B - 0.707ha (1.748acre)	20-30dph	18 units	<i>TBC</i>
Phase 4A - 0.946ha (2.337acre)	50-60dph	54 units	<i>TBC</i>
Phase 4A - 1.967ha (4.86acre)	40-50dph	95 units	<i>TBC</i>
Phase 4B - 1.771ha (4.377acre)	40-50dph	86 units	<i>TBC</i>
Phase 4B - 2.534ha (6.263acre)	30-40dph	98 units	<i>TBC</i>
TOTAL	18.096ha (44.719acre)	TOTAL 885 units	

Appendix C

Barton Underhill Circus Feasibility Options

C1



Barton Underhill Circus – Feasibility Options

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- - - - - Public access / routes through site
- - - - - Access to undercroft parking
- - - - - A1 deliveries and Refuse collection / store
- Site Area



Concept 4.3 Proposal:

Proposal:

- Retain & re-fenestrate existing Northern flatted development, whilst improving existing thermal performance.
- Demolish and replace existing A1 and flatted residential development with associated parking and amenity.
- Improve Green Belt sight lines from the existing public routes neighbouring the site.
- Provide pedestrianised zone (boulevard) for community gatherings and associated public amenity.
- Retain existing doctors/ mini bus parking & introduce A1 parking provision.
- Improve green areas.
- Reduce visual impact of car parking.

Strengths;

- Additional residential units.
- Improved existing flat fabric.
- Improved A1 floor area.
- Connection with A1 & Community hub.
- Link provided to Green Belt.

Weaknesses;

- No parking to existing flatted scheme.
- Restricted or no views from ROADS, list of Green Belt.
- Restricted pedestrian connection with Green Belt.

Key:

- 01 – A1, Mini Bus and Dr. parking
- 02 – Retaining Existing North Road
- 03 – Private Residential parking entered from Undercroft
- 04 – Residential development 1
- 05 – Residential development 2
- 06 – A1 Shop Units
- 07 – Public space and frontage to A1 Units and Civic building
- 08 – Landscaped public amenity space.
- 09 – A1 Deliveries, back of house, Bin store.
- 10 – Path through to Green Belt & Parks



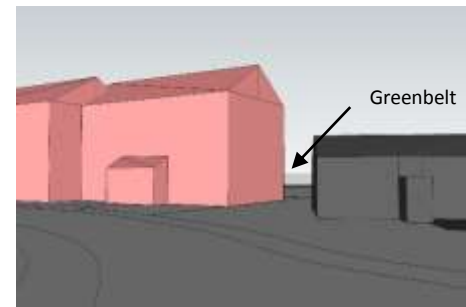


Vistas: Concept 4.3

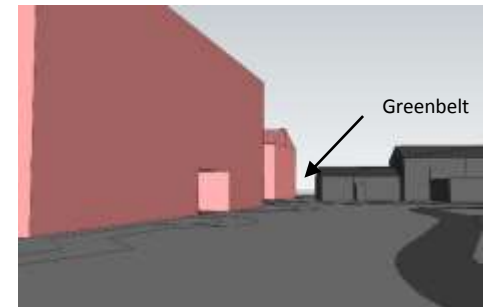
- **Vista 01** – Restricted – Stowford Road ⋯→
- **Vista 02** – Restricted – Mather Road ⋯→
- **Vista 03** – Oblique – Proposed Public Space ⋯→
- **Vista 04** – Restricted – Fettiplace Road ⋯→



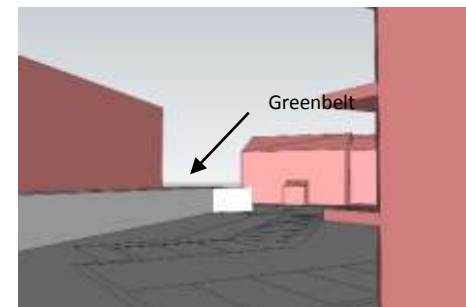
Massing views indicating real time view



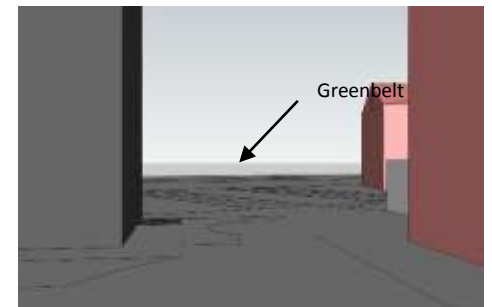
View 01



View 02



View 03



View 04

-> Public access / routes through site
-> Access to undercroft parking
-> A1 deliveries and Refuse collection / store
- Site Area



Concept 4.2 Proposal:

Proposal:

- Demolish existing Northern 12 unit flatted development, replace with relocated 12 unit flatted residential development with associated parking and current space planning requirements.
- Demolish and replace existing A1 and flatted residential development with associated parking and amenity.
- Improve Green Belt sight lines from the existing public routes neighbouring the site.
- Provide pedestrianised zone (boulevard) for community gatherings and associated public amenity.
- Retain existing doctors/ mini bus parking & introduce A1 parking provision.
- Improve green areas.
- Reduce visual impact of car parking.

Strengths;

- Additional residential units.
- Improved A1 floor area.
- Connection with A1 & Community hub.
- Link provided to Green Belt.
- Improved building stock thermal performance.
- Relocation of Northern flatted scheme provides improved relationship with neighbouring bungalow and Green Belt views.

Weaknesses;

- Introduction of current parking provision requirements to northern flatted proposal.
- No uplift of residential units to Northern flatted proposal.
- Restricted from views from ROADS, list of Green Belt.
- Restricted pedestrian connection with Green Belt.

Key:

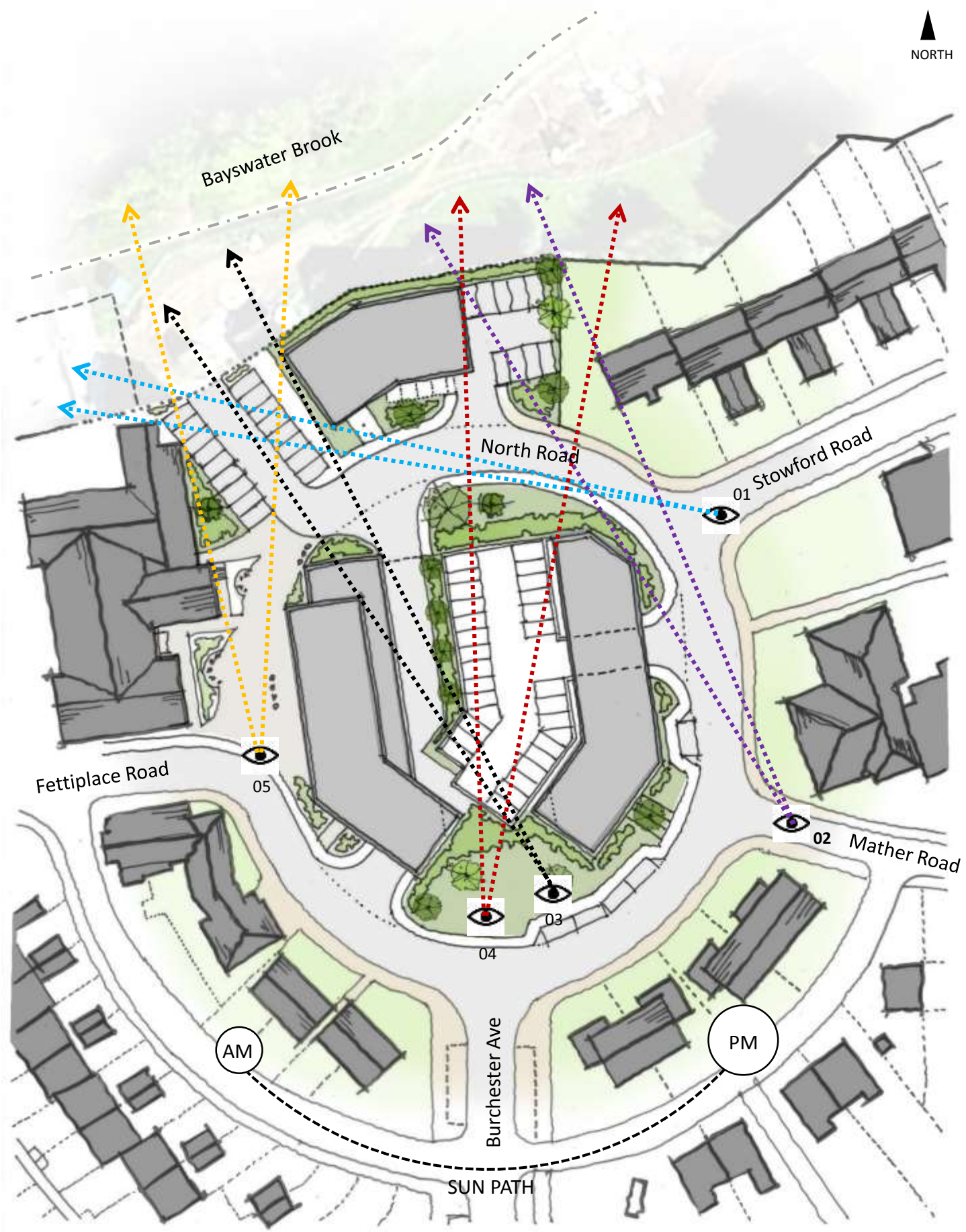
- 01 – A1, Mini Bus and Dr. parking
- 02 – Retaining Existing North Road
- 03 – Private Residential parking entered from Undercroft
- 04 – Residential development 1
- 05 – Residential development 2
- 06 – A1 Shop Units
- 07 – Public space and frontage to A1 Units and Civic building
- 08 – Landscaped public amenity space.
- 09 – A1 Deliveries, back of house, Bin store.
- 10 – New build residential development x 12 x 2 bed units
- 11 – Residential undercroft parking
- 12 – Path through to Green Belt and play ground



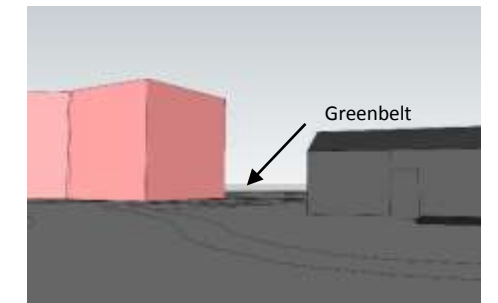


Vistas: Concept 4.2

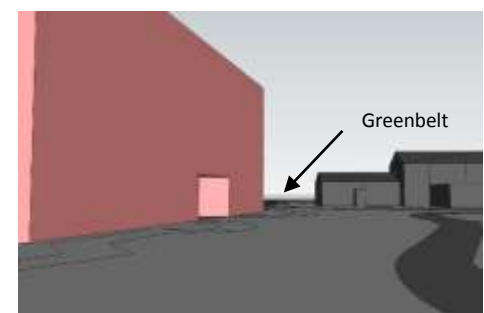
- **Vista 01** – Restricted – Stowford Road ⋯→
- **Vista 02** – Restricted – Mather Road ⋯→
- **Vista 03** - Oblique – Proposed public space ⋯→
- **Vista 04** - Restricted – Burchester Ave ⋯→
- **Vista 05** – Restricted – Fettiplace Road ⋯→



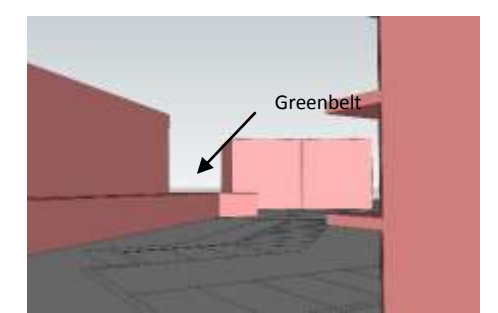
Massing views indicating real time view



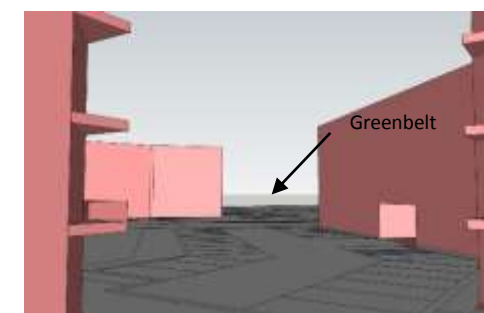
View 01



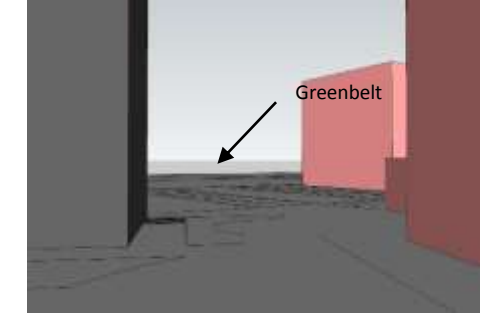
View 02



View 03



View 04



View 05

- - - - - Public access / routes through site
- - - - - Access to undercroft parking
- - - - - A1 deliveries and Refuse collection / store
- Site Area



Concept 4.1 Proposal:

Proposal:

- Demolish existing Northern 12 unit flatted development, replace with relocated larger scheme over 5 floors with associated parking and current space planning requirements.
- Demolish and replace existing A1 and flatted residential development with associated parking and amenity.
- Improve Green Belt sight lines from the existing public routes neighbouring the site.
- Provide pedestrianised zone (boulevard) for community gatherings and associated public amenity.
- Retain existing doctors/ mini bus parking & introduce A1 parking provision.
- Improve green areas.
- Reduce visual impact of car parking.

Strengths;

- Additional residential units.
- Improved A1 floor area.
- Connection with A1 & Community hub.
- Link provided to Green Belt.
- Improved building stock thermal performance.
- Relocation of Northern flatted scheme provides improved relationship with neighbouring bungalow and Green Belt views.

Weaknesses;

- Introduction of current parking provision requirements to northern flatted proposal.
- Impact with regards to height of the proposed flatted proposal and relationship with neighbouring bungalow.
- Restricted from views from ROADS, list of Green Belt.
- Restricted pedestrian connection with Green Belt.

Key:

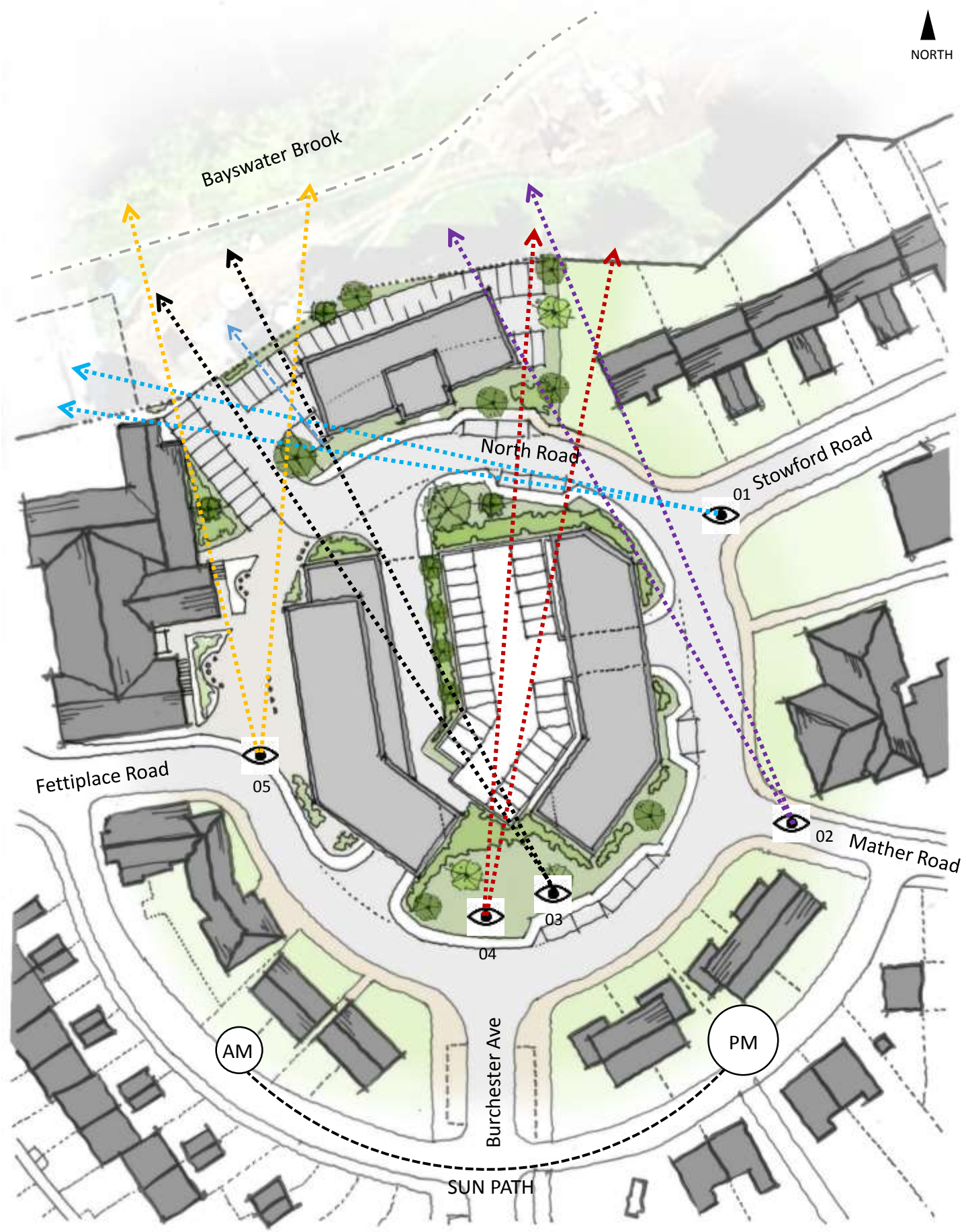
- 01 – A1, Mini Bus and Dr. parking
- 02 – Retaining Existing North Road
- 03 – Private Residential parking entered from Undercroft
- 04 – Residential development 1
- 05 – Residential development 2
- 06 – A1 Shop Units
- 07 – Public space and frontage to A1 Units and Civic building
- 08 – Landscaped public amenity space.
- 09 – A1 Deliveries, back of house, Bin store.
- 10 – New build residential development 16 x 2 bed units
- 11 – Residential undercroft parking
- 12 – Path through to Green Belt and play ground



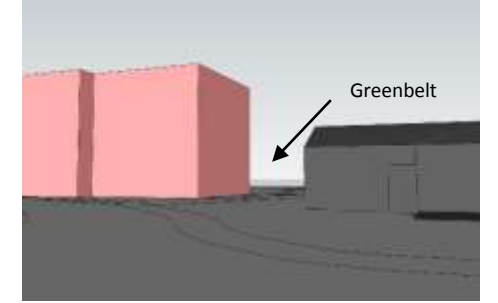


Vistas: Concept 4.1

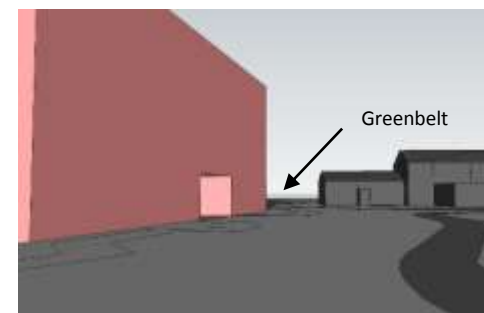
- **Vista 01** – Restricted – Stowford Road ⋯→
- **Vista 02** – Restricted – Mather Road ⋯→
- **Vista 03** – Oblique – Proposed Public Space ⋯→
- **Vista 04** – Restricted – Burchester Ave ⋯→
- **Vista 05** – Restricted – Fettiplace Road ⋯→



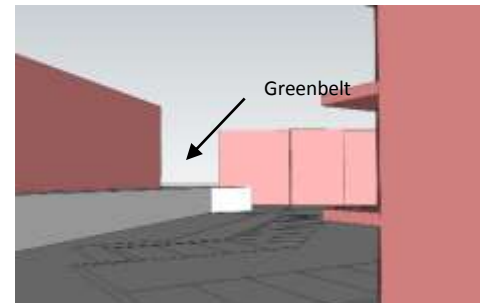
Massing views indicating real time view



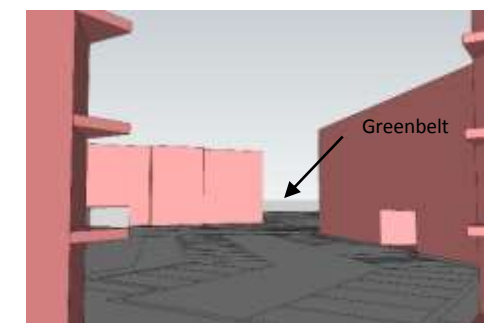
View 01



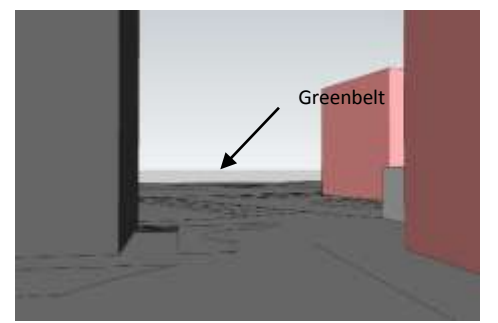
View 02



View 03



View 04



View 05

- - - - - Public access / routes through site
- - - - - Access to undercroft parking
- - - - - A1 deliveries and Refuse collection / store
- Site Area



Concept 4.0 Proposal:

Proposal:

- Demolish existing Northern 12 unit flatted development & replace with public realm space and Greening
- Demolish and replace existing A1 and flatted residential development with associated parking and amenity.
- Improve Green Belt sight lines from the existing public routes neighbouring the site.
- Provide pedestrianised zone (boulevard) for community gatherings and associated public amenity.
- Retain existing doctors/ mini bus parking & introduce A1 parking provision.
- Improve green areas.
- Reduce visual impact of car parking.

Strengths;

- Additional residential units.
- Improved A1 floor area.
- Improved Doctors and new A1 parking provisions.
- Connection with A1 & Community hub, large community external space.
- Defined links to Green Belt and the neighbouring site.
- Enhanced views to Green Belt from public zones.
- Overlooking provision to parking arrangement.
- Increased landscaping provision.

Weaknesses;

- Removal of existing Northern flatted development.

Key:

- 01 – Public Square, landscaping and amenity space.
- 02 – Retaining Existing North Road with access to Dr's and A1 parking
- 03 – Private Residential parking entered from Undercroft
- 04 – Residential development 1
- 05 – Residential development 2
- 06 – A1 Shop Units
- 07 – Public space and frontage to A1 Units and Civic building
- 08 – Landscaped public amenity space.
- 09 – A1 Deliveries, back of house, Bin store.
- 10 – Pathway leading to Green Belt and Parks
- 11 – Drs and A1 visitor parking
- 12 – Path through to Green Belt and play ground





Vistas: Concept 4.0

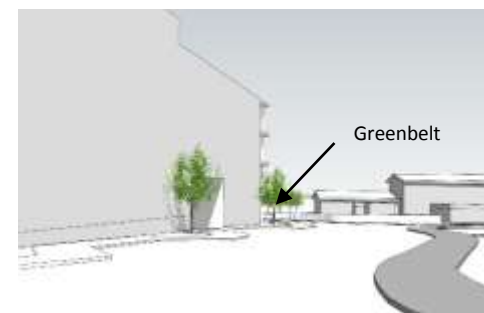
- Vista 01 – Unobstructed – Stowford Road ⋯→
- Vista 02 – Restricted – Mather Road ⋯→
- Vista 03 – Unobstructed – Burchester Ave ⋯→
- Vista 05 – Unobstructed – Fettiplace Road ⋯→



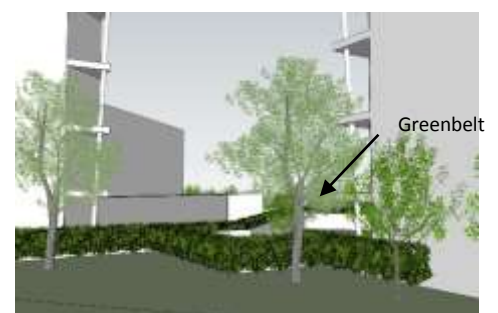
Massing views indicating real time view



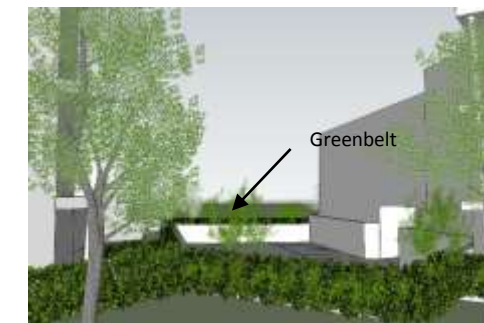
View 01



View 02



View 03

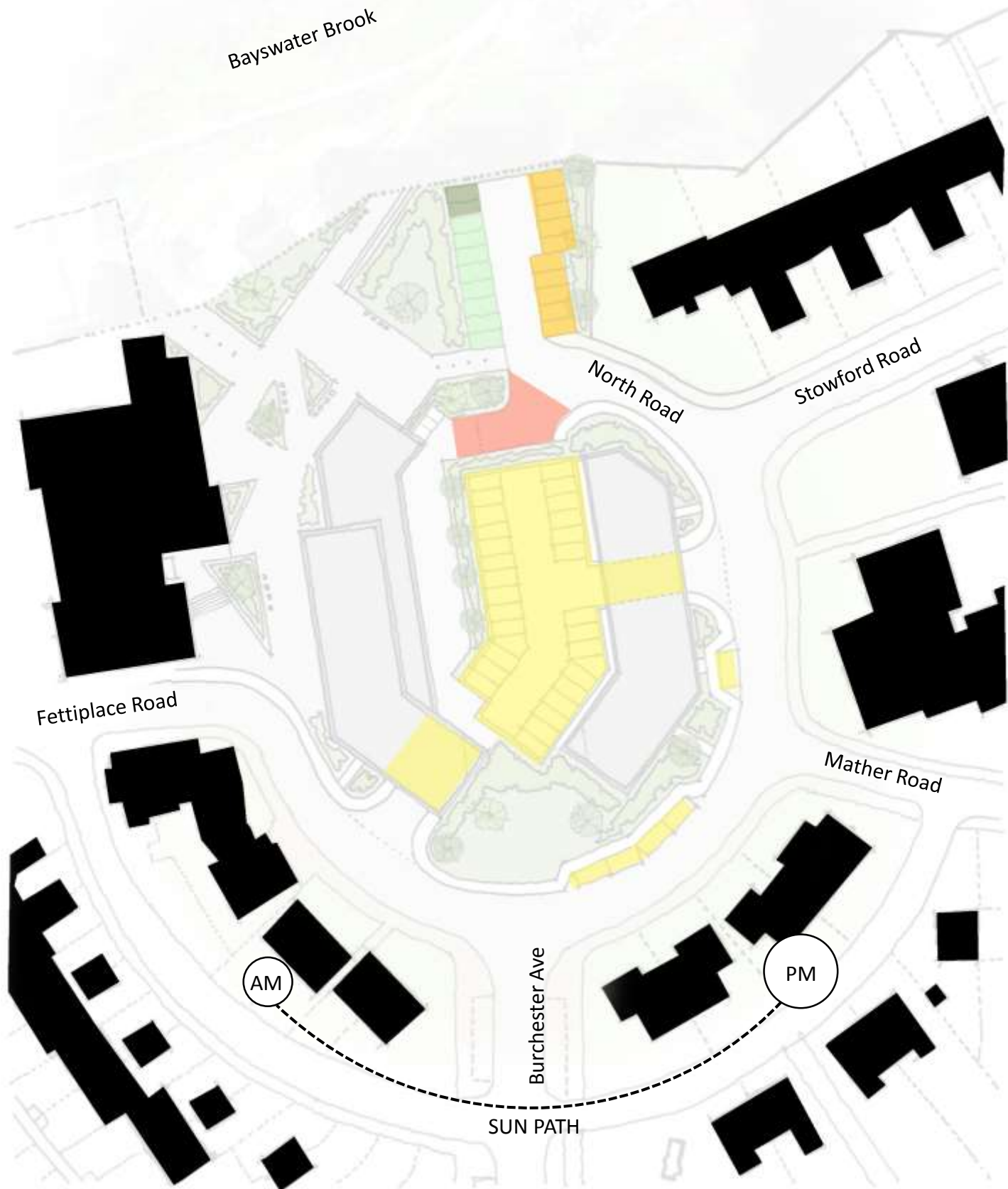


View 04



View 05

Concept 4.0 Parking typology



- Resident parking
- A1 Visitor parking
- Mini Bus parking
- Dr. parking
- A1 Deliveries



Location of existing site car parking

Precedent Images – Parking Types



Undercroft Parking and soft landscaping





Lay-by parking with flush kerb & road

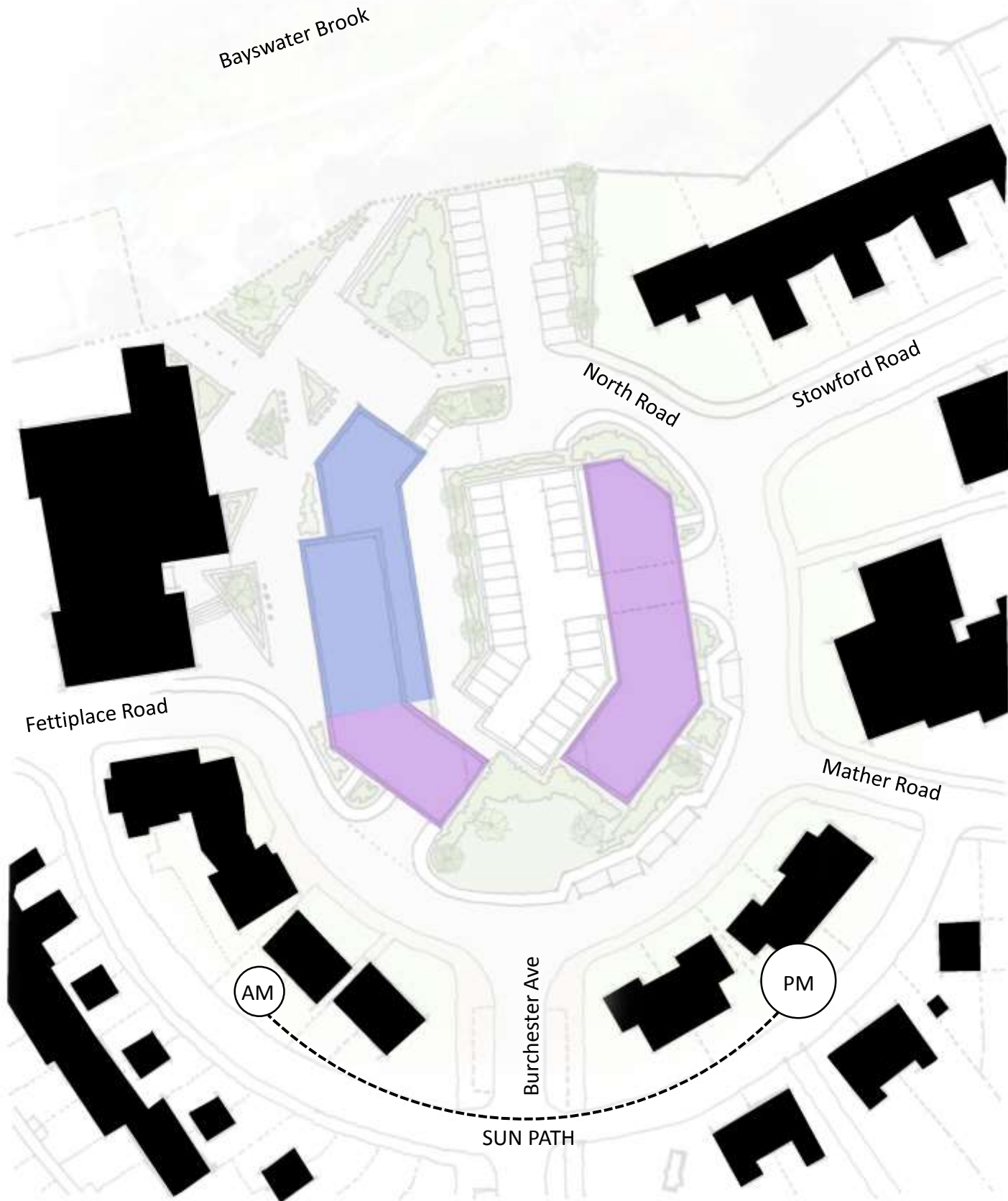


Green Terram Parking

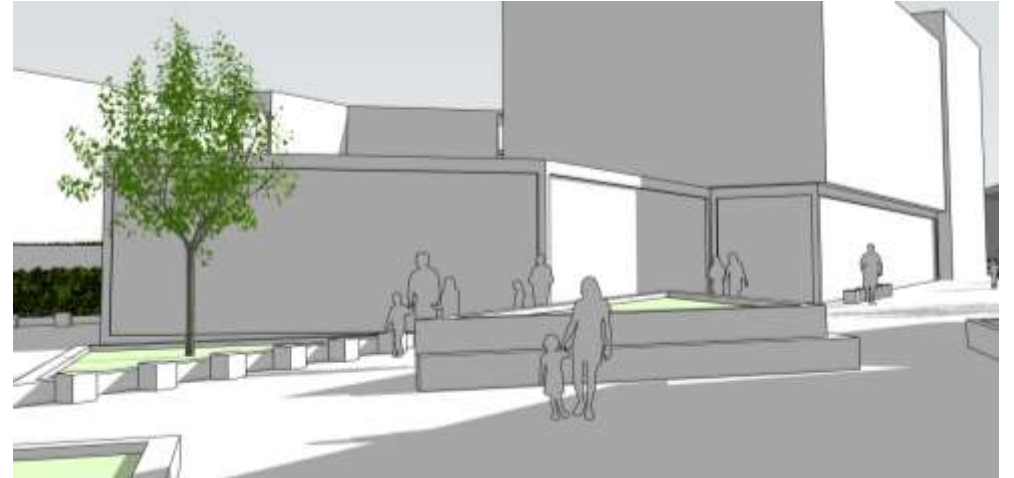
Concept 4.0 Ground Floor



-  Residential
-  A1 Shop Units



Proposed conceptual public space



Precedent Images – Mixed use Residential





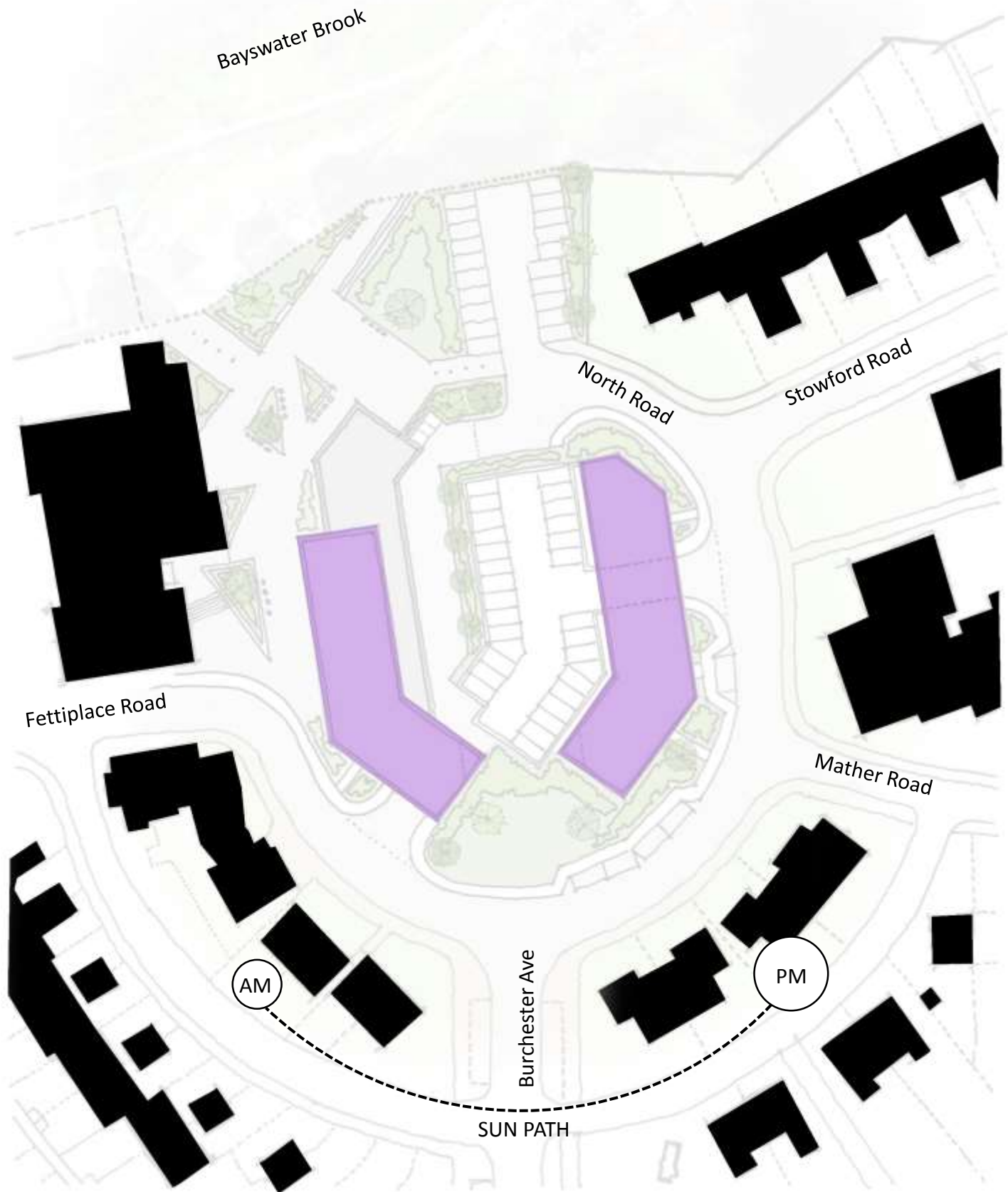
Precedent Images – Shop Units



Concept 4.0 First Floor



-  Residential
-  A1 Shop Units



Precedent Images - Residential



Precedent Images - Mixed use Residential

Concept 4.0 Green spaces and Planting



Concept 4.0 Green spaces and Planting



- Green / Amenity Civic Space
- Soft Landscaping



Precedent Images - Soft Landscaping



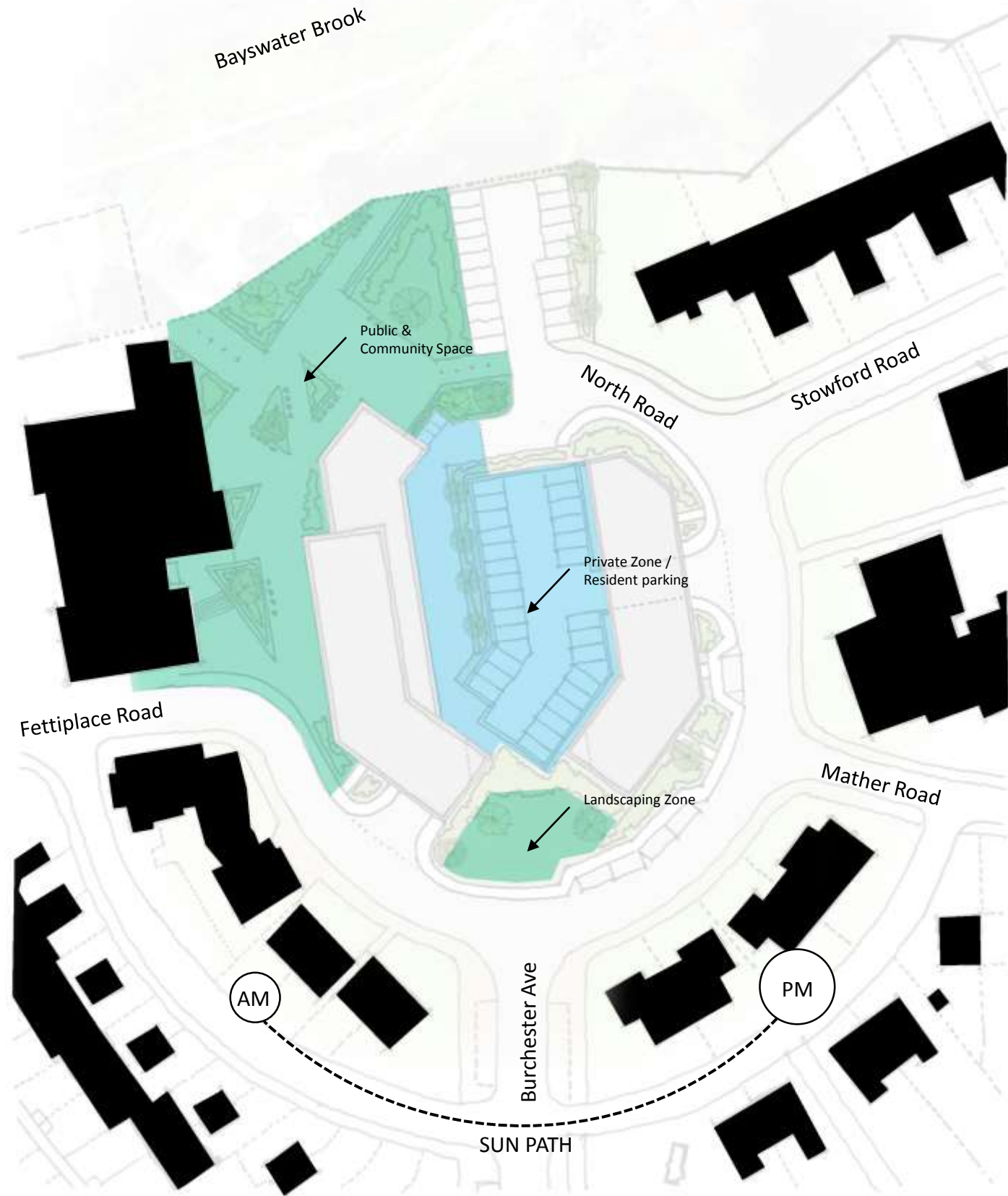
Precedent Images – Green / Amenity Civic Space



Concept 4.0 Public and Private Zones



- Public & Community Space
- Private



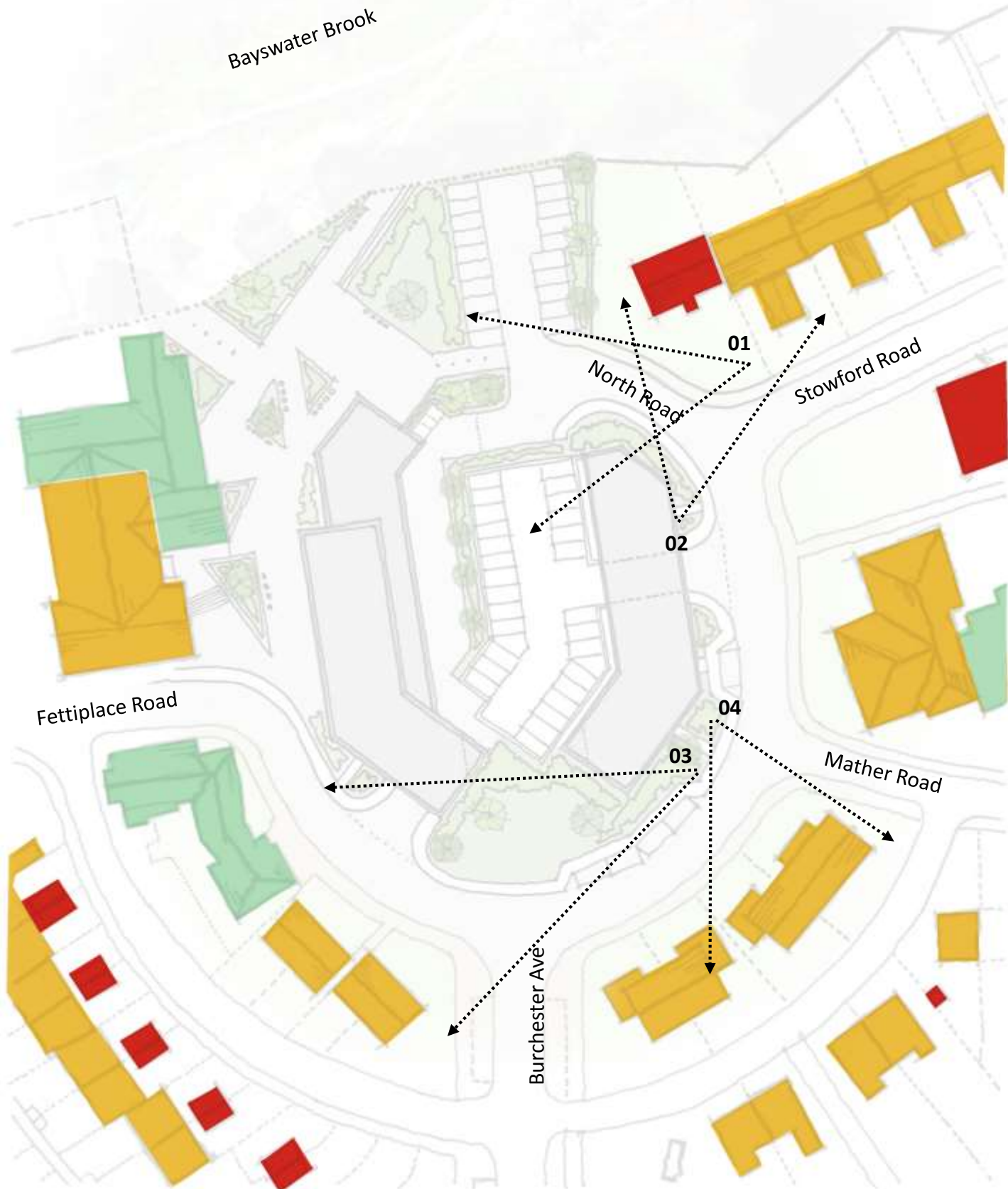
Precedent Images Private Parking



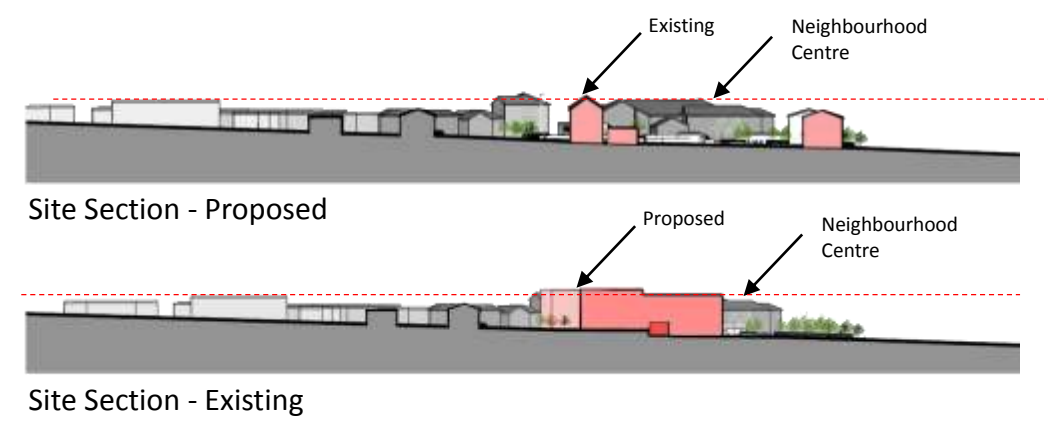
Precedent Images – Community Space



Concept 4.0 Building Heights



- < 8m to ridge
- < 4m to ridge
- < 14m to ridge



Street Images – Housing Typology



Street View 01



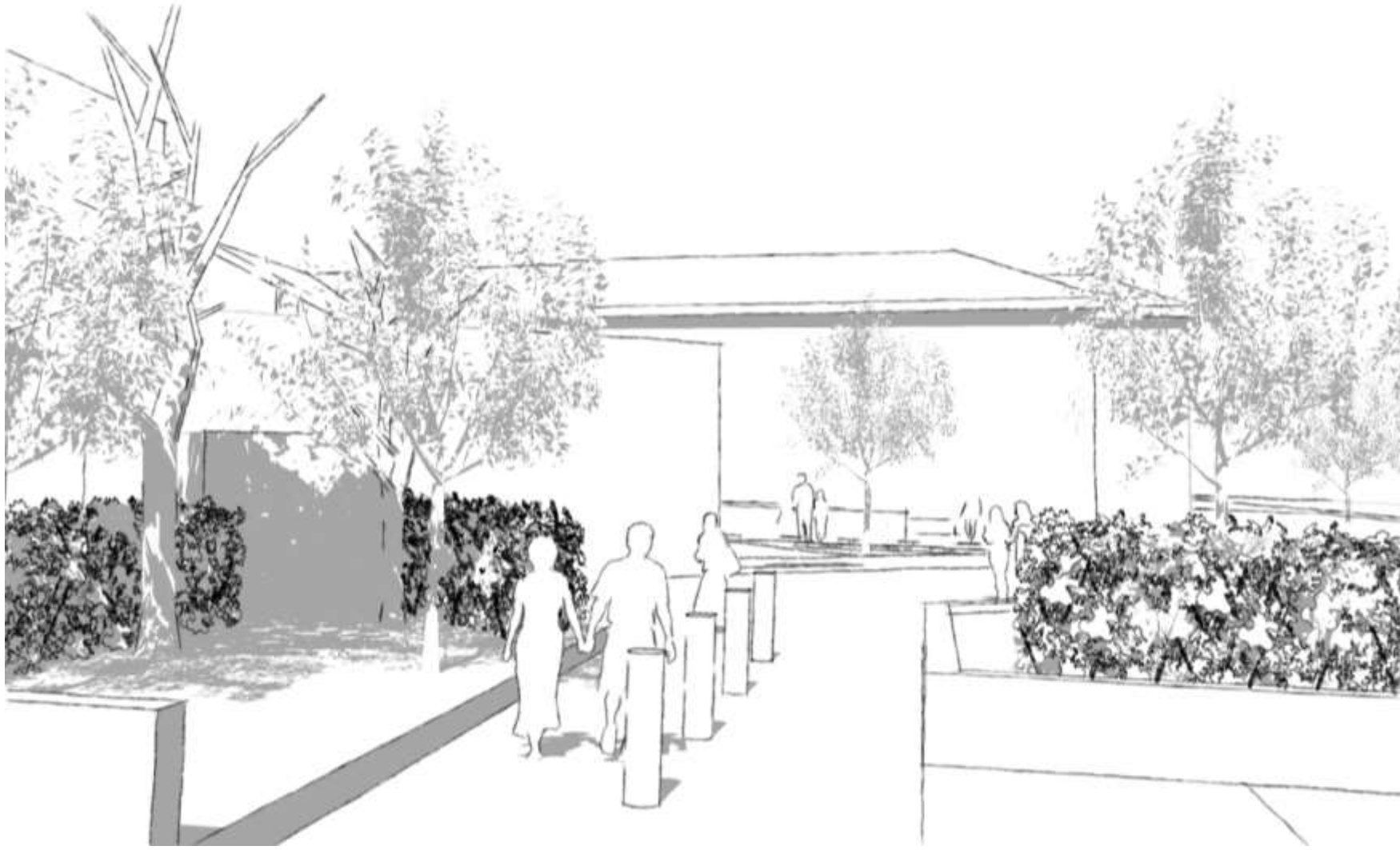
Street View 02



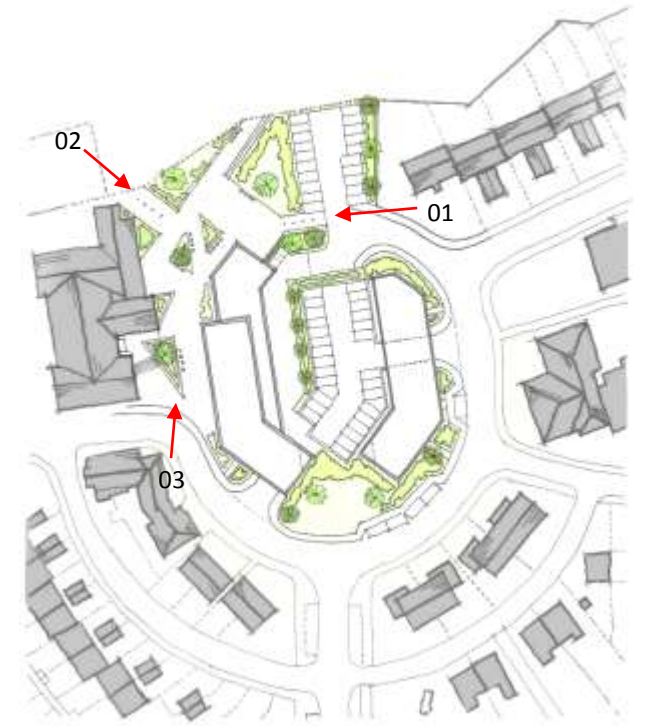
Street View 03



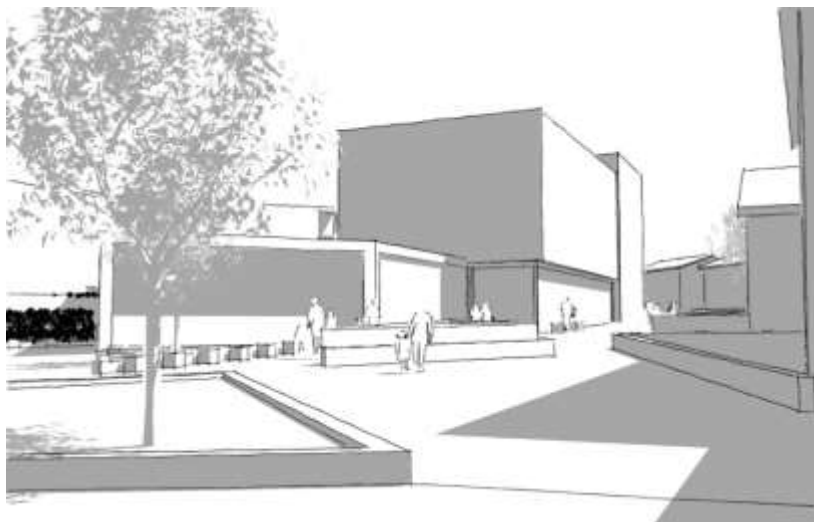
Street View 04



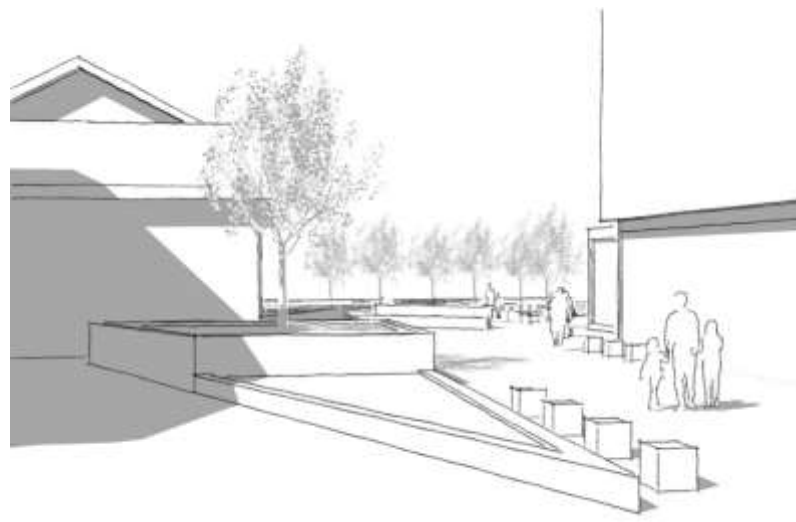
View 01 – Public Boulevard interface with existing Civic Building. Potential space for interactive walkway and greening



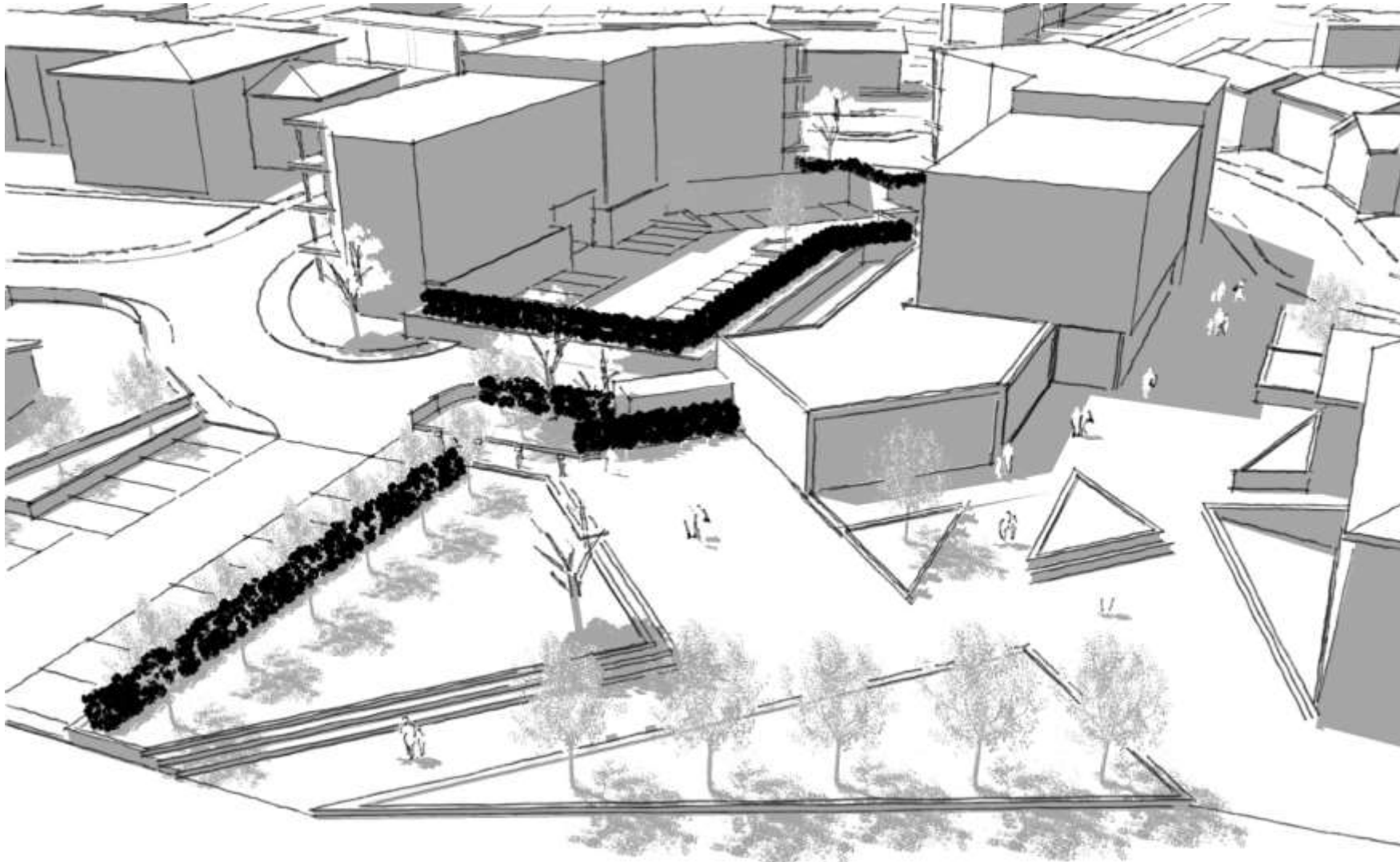
Key. Views



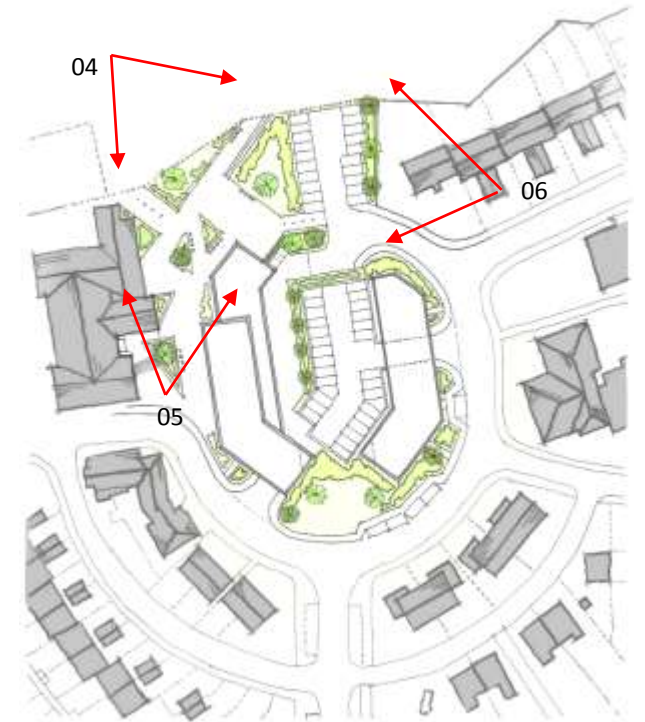
View 02 – Views up from Bayswater Brook Green Belt into proposed public square and A1 community Centre active facades



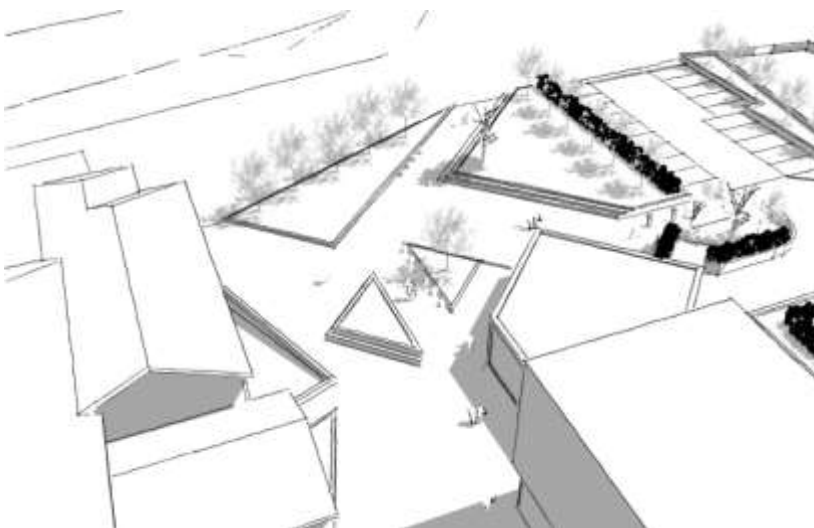
View 03 – View from Fettiplace Road through the proposed public square, A1 community Centre active facades and to open Green Belt beyond.



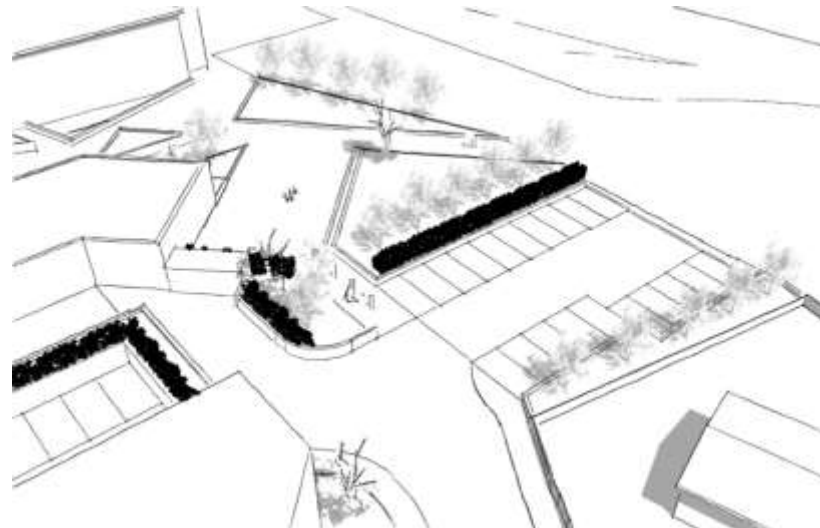
View 04 – Birds-eye view looking from Green Belt into proposed public open spaces and Civic amenity area.



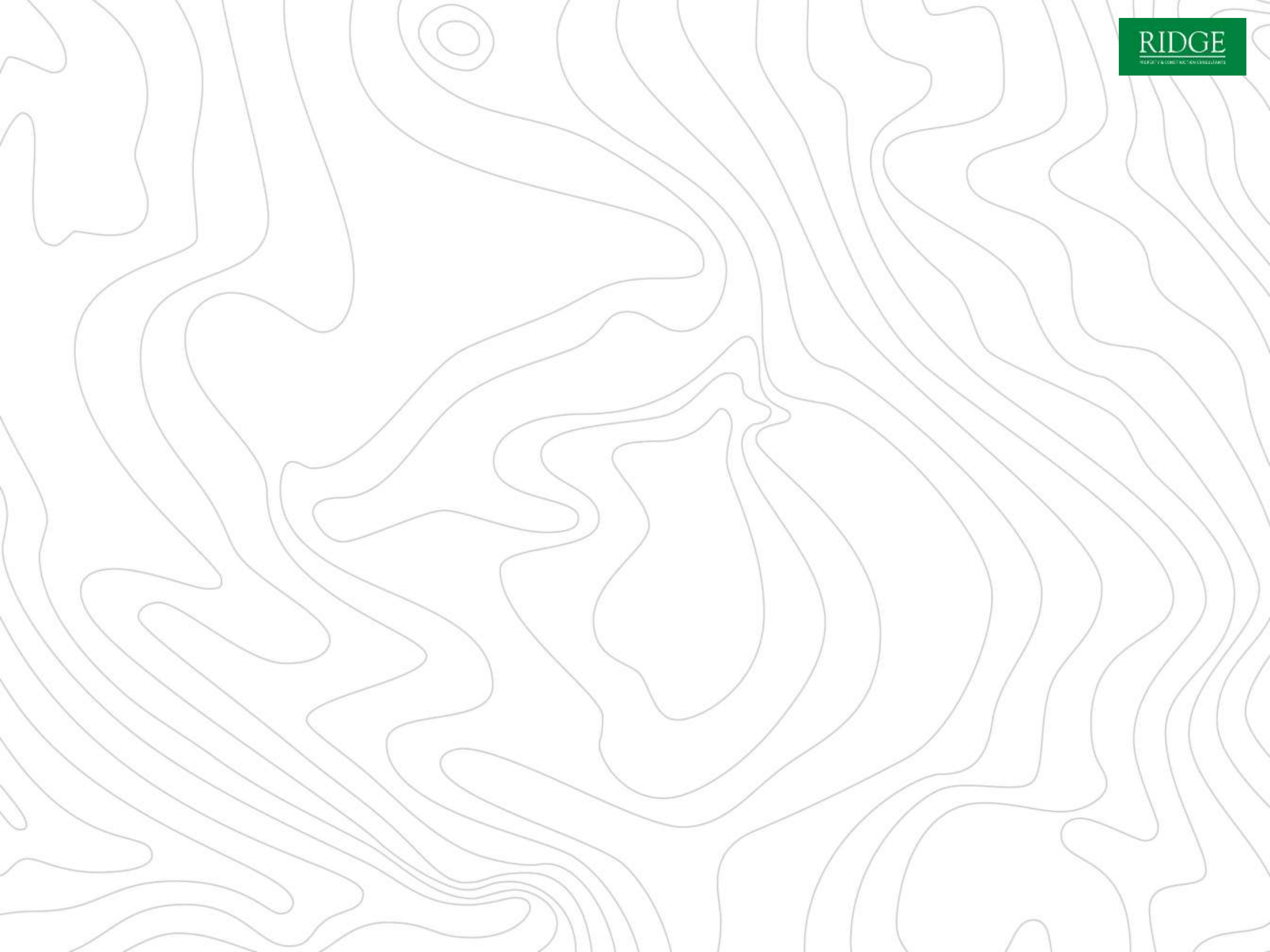
Key. Views



View 05 – Birds-eye view looking from Fettiplace Road identifying proposed hard and soft landscaping arrangements and relationship to Green Belt.



View 06 – Birds-eye view from Stowford Road identifying relationship with existing buildings, proposed public realm and potential enhanced vistas of Green Belt.



Appendix D

Wales Health Impact Assessment Support Unit (WHIASU) vulnerable groups checklist

D1

Vulnerable groups relevant to assessment

Vulnerable and disadvantaged groups	Relevance to assessment (high/low)
Age related groups:	
Children and young people; and	High
Older people.	High
Income related groups:	
People on low income;	High
Economically inactive;	High
Unemployed/workless; and	High
People who are unable to work due to ill health.	Low
Groups who suffer discrimination or other social disadvantage:	
People with physical or learning disabilities /difficulties;	High
Refugee groups;	High
People seeking asylum;	High
Travellers;	Low
Single parent families;	High
Lesbian and gay and transgender people;	Low
Black and minority ethnic groups; and	High

Vulnerable and disadvantaged groups	Relevance to assessment (high/low)
Religious groups.	High
Geographical groups:	
People living in areas known to exhibit poor economic and/or health indicators;	High
People living in isolated/over-populated areas; and	Low
People unable to access services and facilities.	High

Appendix E

HUDU HIA Matrix

E1

	Assessment criteria	Relevant?	Details/evidence	Potential health impact	Initial considerations for the design team and further recommendations
Housing quality and design					
1.1	Does the proposal seek to meet all 16 design criteria of the Lifetime Homes Standard?	Yes	<p>Barton Park development - Applies to all affordable housing (15% of open market housing). With 'wheelchair accessibility chosen as benchmark for a good space requirement, e.g. parents with small children, equipment – pushchairs, prams, people carrying shopping in and out of the house, older people who find it easier not to use stairs, people with a range of temporary or permanent mobility impairments. Good accessibility helps everyone' (Barton Design Code¹). Also ref to: www.lifetimeshomes.org.uk</p> <p>Barton Park development - Building for Life – applies to all houses that must achieve Building for Life Gold Level and will be reviewed against the 12 questions set out in the criteria Ref to: www.cabe.org.uk/building-for-life</p> <p>Underhill Circus redevelopment – 50% of housing will be 'affordable housing'</p>	Positive	Also incorporate the '10 changes we could make' 'Active By Design' principles/best practice. See: 'Active by Design: Designing Places for Healthy Lives A Short Guide', http://www.designcouncil.org.uk/resources/guide/active-design-designing-places-healthy-lives

¹ <http://www.bartonparkoxford.com/vision/design-code.aspx>

	Assessment criteria	Relevant?	Details/evidence	Potential health impact	Initial considerations for the design team and further recommendations
1.2	Does the proposal address the housing needs of older people, i.e. extra care housing, sheltered housing, lifetime homes and wheelchair accessible homes?	Yes	<p>Barton Park development - Adheres to 'Lifetime Homes Standard' and 'Building for Life' criteria, with wheelchair accessibility as a key requirement.</p> <p>Underhill Circus redevelopment – proposals to improve existing thermal performance of housing</p>	Positive	Aim to maximise the number of dwellings with ground floor access or lift access built to “Lifetime Homes” standards to be wheelchair accessible, or easily adaptable for residents that are wheelchair users – E.g. the living room should be at entrance level. There should be a space for turning a wheelchair in dining areas and living rooms and adequate circulation space for wheelchairs elsewhere.
1.3	Does the proposal include homes that can be adapted to support independent living for older and disabled people?	Yes	<p>Barton Park development - Adheres to Lifetime Homes Standard and Building for Life Criteria, with wheelchair accessibility as a key requirement.</p>	Positive	<p>Also Incorporate WHO ‘Age Friendly Cities’ features into design and BHNT Programme to help chart progress. (E.g. recommendations include - “<i>sufficient and affordable housing for frail and disabled older people, with appropriate services is provided locally.</i>” See: http://www.who.int/ageing/publications/Age_friendly_cities_checklist.pdf)</p> <p>Also apply ‘The Principles of Inclusive Design’. (CABE, 2006) and ‘Inclusion by Design: Equality, Diversity and the Built Environment’ (CABE, 2008) for instance, avoid</p>

	Assessment criteria	Relevant?	Details/evidence	Potential health impact	Initial considerations for the design team and further recommendations
					steps and replace them with a gentle incline between floors and add low window-sills for a better view. See that doors are highly visible, lay non-slip mats and make automatic doors the automatic choice.
1.4	Does the proposal promote good design through layout and orientation, meeting internal space standards?	Yes	<p>Barton Park development – Predominantly traditional building forms for houses with contemporary apartments and potential for contemporary individual buildings.</p> <p>Orientation solar gain applies to all affordable housing and all open market housing – the layout has been tested to ensure that photovoltaics can deliver 20% reduction in energy use for domestic homes.” (Barton Design Code)</p>	Positive	Continue to monitor progress via applying Age Friendly Cities (UK) Programmes best practice recommendations e.g. Interior spaces and level surfaces allow freedom of movement in all rooms and passageways.
1.5	Does the proposal include a range of housing types and sizes, including affordable housing responding to local housing needs?	Yes	<p>Barton Park development – A percentage of affordable housing is included in the range of housing types. (Ref: Barton Design Code).</p>	Positive	Monitor access to affordable housing of key equality groups, e.g. affordable housing provision and retention can assist Women who are single parents as they are statistically less economically active than men and often earn less in similar

	Assessment criteria	Relevant?	Details/evidence	Potential health impact	Initial considerations for the design team and further recommendations
			Underhill Circus redevelopment – 50% of housing will be affordable housing		occupations. (Source: ONS Online, http://www.statistics.gov.uk)
1.6	Does the proposal contain homes that are highly energy efficient (e.g. a high SAP rating)?	Yes	<p>Barton Park development – Proposals for 20% energy reduction, fabric first buildings,</p> <p>“Specific energy saving measures at Barton include all houses, civic, and commercial buildings to have real time metering.” (Barton Design Code)</p> <p>“Orientation solar gain applies to all affordable housing and all open market housing – the layout has been tested to ensure that photovoltaics can deliver 20% reduction in energy use for domestic homes.”(Barton Design Code)</p> <p>Underhill Circus redevelopment - proposals to improve existing thermal performance of housing</p>	Positive	<p>Reference best practice guidance, includes:</p> <p>A Code for Sustainable Homes or BREEAM assessment should be undertaken for all major development proposals.</p> <p>The Code for Sustainable Homes (CSH) is a national standard to guide the design and construction of sustainable homes. The Code gives a rating from 1 to 6. The higher the rating, the more sustainable the design of the home. Level 4 is roughly the equivalent of a BREEAM excellent score. The assessment includes health and wellbeing criteria with credits available for Lifetime Homes, sound insulation, daylight and private outdoor space.</p> <p>http://www.communities.gov.uk/planningandbuilding/sustainability/codesustainablehomes/</p>

	Assessment criteria	Relevant?	Details/evidence	Potential health impact	Initial considerations for the design team and further recommendations
					Building Research Establishment Environmental Assessment Method (BREEAM) assesses the environmental performance of new and refurbished
Access to healthcare services and other social infrastructure					
2.1	Does the proposal retain or re-provide existing social infrastructure?	Yes	<p>Barton Park development – New bus routes would be provided through the proposed development which will connect the neighbourhood to Northway, Barton and city centre via key facilities such as the John Radcliffe Hospital.</p> <p>The new development at Barton seeks to emphasise good connections and careful integration with existing Barton. (Barton Design Code).</p> <p>A community hub including a primary school will be located at the heart of the new neighbourhood. The school will share facilities and sports pitches with the community.</p> <p>A network of parks and green spaces will thread their way through the new neighbourhood and provide the</p>	Positive	Proposals should consider the requirement for meeting spaces for religious communities e.g. the Muslim communities may require a mosque and the Christian community a building/meeting space for church meetings.

	Assessment criteria	Relevant?	Details/evidence	Potential health impact	Initial considerations for the design team and further recommendations
			<p>opportunity for circular walks which also link to the open countryside.</p> <p>Underhill Circus redevelopment – proposals to improve existing Doctors, retain existing mini bus parking and introduce additional parking areas and provide pedestrianised boulevard for community gatherings and associated public amenity. Proposals to enhance connection with Barton Park development and existing community hub. Proposals to improve Green Belt sight lines from the existing public routes neighbouring the site and to improve access to green areas.</p>		
2.2	Does the proposal assess the demand for healthcare services?	Yes	<p>Barton Park development -</p> <p>There are currently no proposals to provide any healthcare provision however the increase in population may trigger the requirement for additional/improved off-site GP services. There is a potential for healthcare outreach services (mother and baby clubs, advice surgeries etc.) to be provided as part of the usage of the flexible community floorspace within the Community Hub.</p>	Uncertain	New developments of this scale need to consider a potential requirement for additional/improved off site GP services. In the case of Barton Park development, not only at Bury Knowle Satellite surgery within the Barton Neighbourhood Centre but elsewhere nearby.

	Assessment criteria	Relevant?	Details/evidence	Potential health impact	Initial considerations for the design team and further recommendations
			Underhill Circus redevelopment – proposals to improve Bury Knowle Satellite surgery within the Barton Neighbourhood Centre.		
2.3	Does the proposal provide for healthcare services either in the form of a financial contribution or in-kind? Does a healthy facility provided as part of the development match NHS requirements and plans?	Yes	<p>Barton Park development - There are currently no proposals to provide any healthcare provision however the increase in population may trigger the requirement for additional/improved off-site GP services. There is a potential for healthcare outreach services (mother and baby clubs, advice surgeries etc.) to be provided as part of the usage of the flexible community floorspace within the Community Hub.</p> <p>Underhill Circus redevelopment – proposals to improve Bury Knowle Satellite surgery within the Barton Neighbourhood Centre.</p>	Uncertain	Barton Park development need to consider a potential requirement for additional/improved off site GP services not only at Bury Knowle Satellite surgery within the Barton Neighbourhood Centre but elsewhere nearby.
2.4	Does the proposal assess the capacity, location and accessibility of other social infrastructure, .e.g. schools, social care and community facilities?	Yes	Barton Park development - Proposal includes assessment of social infrastructure features including primary school and community hub, serving existing and new residents of Barton (Barton Design Code).	Positive	It is considered that the proposed schemes assess the capacity, location and accessibility of other social infrastructure and therefore no further recommendations are made at this stage.

	Assessment criteria	Relevant?	Details/evidence	Potential health impact	Initial considerations for the design team and further recommendations
			Underhill Circus redevelopment – assessment on Barton Neighbourhood Centre’s upgrade of service provision.		
2.5	Does the proposal explore opportunities for shared community use and co-location of services?	Yes	<p>Barton Park development – A community hub including a primary school will be located at the heart of the new neighbourhood. The school will share facilities and sports pitches with the community.</p> <p>Underhill Circus redevelopment – proposals to improve existing Doctors, retain existing mini bus parking and introduce additional parking areas and provide pedestrianised boulevard for community gatherings and associated public amenity. Proposals to upgrade Barton Neighbourhood Centre’s service provision.</p>	Positive	It is considered that the proposed schemes explore opportunities for shared community use and co-location of services and therefore no further recommendations are made at this stage.
2.6	Does the proposal contribute to meeting primary, secondary and post 19 education needs?	Yes	Barton Park development - The new primary school is being developed to complement and contribute to surrounding and existing educational provision. (Barton Design Code). (Oxfordshire County Council, School Specification Document, New School for Barton).	Positive	It is considered that the proposed schemes contribute to meeting educational needs and therefore no further recommendations are made at this stage.

	Assessment criteria	Relevant?	Details/evidence	Potential health impact	Initial considerations for the design team and further recommendations
			Underhill Circus redevelopment – The proposed upgrade of services provided by Barton Neighbourhood Centre includes Information Training sessions as English as a Second Language (ESOL).		
Access to open space and nature					

3.1	Does the proposal retain and enhance existing open and natural spaces?	Yes	<p>Barton Park development – A network of parks and green spaces will thread their way through the new neighbourhood and provide the opportunity for circular walks which also link to the open countryside.</p> <p>Following the southern side of the Bayswater Brook, a major new public park will be accessible to both new and existing residents throughout this part of Oxford.</p> <p>The existing allotments may be complemented with new opportunities for the community to grow food together.</p> <p>Underhill Circus redevelopment – Proposals to improve Green Belt sight lines from the existing public routes neighbouring the site and to improve access to green areas.</p>	Positive	It is considered that the proposed schemes retain and enhance existing open and natural spaces and therefore no further recommendations are made at this stage.
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	Assessment criteria	Relevant?	Details/evidence	Potential health impact	Initial considerations for the design team and further recommendations
3.2	In areas of deficiency, does the proposal provide new open or natural space, or improve access to existing space?	Yes	<p>Barton Park development - A network of parks and green spaces will thread their way through the new neighbourhood and provide the opportunity for circular walks which also link to the open countryside.</p> <p>Following the southern side of the Bayswater Brook, a major new public park will be accessible to both new and existing residents throughout this part of Oxford.</p> <p>The existing allotments may be complemented with new opportunities for the community to grow food together.</p> <p>Underhill Circus redevelopment – Proposals to improve Green Belt sight lines from the existing public routes neighbouring the site and to improve access to green areas.</p>	Positive	It is considered that the proposed schemes provide new open or natural space, or improve access to existing space and therefore no further recommendations are made at this stage.

	Assessment criteria	Relevant?	Details/evidence	Potential health impact	Initial considerations for the design team and further recommendations
3.3	Does the proposal provide a range of play spaces for children and young people?	Yes	Barton Park development – Play provision for children and young people is a key component of the masterplan. Includes Multi-use games area within the community hub, local areas for play, and local equipped areas for play. Natural play is the key objective and direct links to the Country Park will provide children with a rich natural environment to explore and enjoy (Barton Design Code).	Positive	Underhill Circus redevelopment - there is space within the proposed community boulevard to provide play spaces for children and young people
3.4	Does the proposal provide links between open and natural spaces and the public realm?	Yes	Barton Park development – A network of parks and green spaces will thread their way through the new neighbourhood and provide the opportunity for circular walks which also link to the open countryside. As above the movement network opens up links between open and natural spaces and the public realm. Maximising the opportunity for residents to walk and cycle, either using the street network or	Positive	It is considered that the proposed schemes provide links between open and natural spaces and the public realm and therefore no further recommendations are made at this stage.

	Assessment criteria	Relevant?	Details/evidence	Potential health impact	Initial considerations for the design team and further recommendations
			designated footpaths and cycleway's. (Barton Design Code) Underhill Circus redevelopment - Proposals to improve Green Belt sight lines from the existing public routes neighbouring the site and to improve access to green areas.		
3.5	Are the open and natural spaces welcoming and safe and accessible for all?	Yes	Barton Park development - Routes to open and natural spaces are designed to be safe and to be an attractive environment for all (Barton Design Code). Underhill Circus redevelopment - Proposals to improve Green Belt sight lines from the existing public routes neighbouring the site and to improve access to green areas.	Positive	It is considered that the proposed schemes entails open and natural spaces that are welcoming, safe and accessible by all and therefore no further recommendations are made at this stage.
3.6	Does the proposal set out how new open space will be managed and maintained?	Yes	Barton Park development - The management of open spaces will be addressed as part of a wider estates management strategy for the development.	Positive	This should be agreed prior to the development taking place.
Air quality, noise and neighbourhood amenity					

	Assessment criteria	Relevant?	Details/evidence	Potential health impact	Initial considerations for the design team and further recommendations
4.1	Does the proposal minimise construction impacts such as dust, noise, vibration and odours?	Yes	Construction impacts will be minimised through the effective implementation of the CEMP.	Neutral	Monitor CEMP measures to ensure that they are effective in mitigating impacts. Put in place effective community liaison and response measures to deal quickly with any non-compliances or adverse impacts.
4.2	Does the proposal minimise air pollution caused by traffic and energy facilities?	Yes	Barton Park development -The proposal minimises the impacts of air pollution caused by traffic by promoting walking and cycling over car use. There will be good provision of bike storage in civic spaces and parks. The development will have electric car charging points and car clubs at the centre. In addition, ease of cycling both within the proposed development and to connections and local facilities – see design code. Buildings are to be designed as low carbon – aiming 20% energy reduction.	Positive	Underhill Circus redevelopment – the proposal should include bike storage facilities to promote cycling over car use and building design to minimise energy use.

	Assessment criteria	Relevant?	Details/evidence	Potential health impact	Initial considerations for the design team and further recommendations
4.3	Does the proposal minimise noise pollution caused by traffic and commercial uses?	Yes	<p>Barton Park development - The proposal minimises the impacts of noise pollution caused by traffic by promoting walking and cycling over car use. There will be good provision of bike storage in civic spaces and parks. The development will also have electric car charging points and car clubs at the centre.</p> <p>The proposals include conversion of B4495/B4150 junction from a double mini-roundabout to a traffic signal controlled junction, bus services to the proposed development and reduction of the speed limit on the A40 to 50mph between the Headington Roundabout and March Lane.</p> <p>Construction impacts on the noise environment should be minimised through the CEMP.</p>	Positive	Underhill Circus redevelopment – the proposal should include bike storage facilities to promote cycling over car use.
Accessibility and active travel					

	Assessment criteria	Relevant?	Details/evidence	Potential health impact	Initial considerations for the design team and further recommendations
5.1	Does the proposal prioritise and encourage walking (such as through shared spaces)?	Yes	<p>Barton Park development - A network of parks and green spaces will thread their way through the new neighbourhood and provide the opportunity for circular walks which also link to the open countryside.</p> <p>As above the movement network opens up links between open and natural spaces and the public realm. Maximising the opportunity for residents to walk and cycle, either using the street network or designated footpaths and cycleways. (Barton Design Code).</p> <p>The layout of the development has been designed to encourage residents to walk.</p> <p>Underhill Circus redevelopment – proposals include pedestrianised zones and improving green areas to encourage walking.</p>	Positive	It is considered that the proposed schemes encourage walking and therefore no further recommendations are made at this stage.

	Assessment criteria	Relevant?	Details/evidence	Potential health impact	Initial considerations for the design team and further recommendations
5.2	Does the proposal prioritise and encourage cycling (for example by providing secure cycle parking, showers and cycle lanes)?	Yes	<p>Barton Park development - The design of cycle parking facilities will be consistent and integrated with the surrounding public realm. For residents the bicycle will be the most readily accessible mode of transport. (Barton Design Code)</p> <p>Cycleways, a cycle network, and bike parking are designed to promote and encourage cycling, with the pedestrian and cyclist has priority and the car user is a guest as per the Dutch model (Barton Design Code)</p>	Positive	<p>Invite Cyclox and Broken Spoke to participate in the BHNT Programme to provide further practical advice on ways to prioritise and promote cycling inclusion for diverse communities. (e.g. ‘Festival aims to help ladies into cycling’: <i>‘The Women and Bicycles festival will be held on March 4th, 5th at the East Oxford Community Centre... and features talks, rides and bicycle maintenance workshops. Karen McCallum of Oxford’s Broken Spoke Cooperative, which runs cycle maintenance classes and is organising the festival said it was aimed at helping women overcome barriers to getting on a bicycle.’</i> (Oxford Times, 23 Feb, 2017)</p> <p>Underhill Circus redevelopment – the proposal should include bike storage/cycle lanes to promote cycling over car use.</p>

	Assessment criteria	Relevant?	Details/evidence	Potential health impact	Initial considerations for the design team and further recommendations
5.3	Does the proposal connect public realm and internal routes to local and strategic cycle and walking networks?	Yes	<p>Barton Park development - As above, a series of footpaths and cycleways will connect pedestrians and cyclists to cycle and walking networks (Barton Design Code).</p> <p>Underhill Circus redevelopment - Proposals to improve Green Belt sight lines from the existing public routes neighbouring the site and to improve access to green areas.</p>	Positive	The proposed schemes should include appropriate signage to nearby local and strategic cycle/walking networks.
5.4	Does the proposal include traffic management and calming measures to help reduce and minimise road injuries?	Yes	<p>Barton Park development - Street design includes features to keep traffic speed low and optimise safety. For Tertiary street and mews traffic speeds will be designed to 10-25mp, with the surface treatment creating a pedestrian and cycle friendly environment. (Barton Design Code).</p>	Positive	Underhill Circus redevelopment – consider the need for traffic management and calming measures
5.5	Is the proposal well connected to public	Yes	<p>Barton Park development - The Oxford City Centre (No.8) Bus route will be</p>	Positive	It is considered that the proposed schemes are well connected to public

	Assessment criteria	Relevant?	Details/evidence	Potential health impact	Initial considerations for the design team and further recommendations
	transport, local services and facilities?		<p>extended into the site for Barton and loop around the primary school via the secondary street. A new shuttle service to the John Radcliffe Hospital will also be provided via the new Western Junction.</p> <p>Underhill Circus redevelopment - The Oxford City Centre (No.8) bus route will be extended into Barton. The proposal includes the upgrade of facilities at Barton Neighbourhood Centre including GP services.</p>		transport facilities, local services and facilities.
5.6	Does the proposal seek to reduce car use by reducing car parking provision, supported by the controlled parking zones, car clubs and travel plan measures?	Yes	<p>Barton Park development - A car club will be located at the commercial centre (Barton Design Code).</p> <p>Underhill Circus redevelopment – proposals to include controlled parking zones</p>	Positive	It is considered that the proposed schemes seek to reduce car use and no further recommendations are made at this stage.

	Assessment criteria	Relevant?	Details/evidence	Potential health impact	Initial considerations for the design team and further recommendations
5.7	Does the proposal allow people with mobility problems or a disability to access buildings and places?	Yes	Barton Park development - As above, good and inclusive accessibility is incorporated into the design for people with a range of temporary or permanent mobility impairments (Barton Design Code).	Positive	<p>Underhill Circus redevelopment – proposals should consider access to buildings/places by people with mobility problems or a disability.</p> <p>Also apply good practice guidelines outlined in ‘Disability and Inclusive Access to the Built Environment’, Brian Goodall, (2010), University of Reading</p> <p>e.g. ‘Understanding the scale and diversity of disability’ –<i>Built environment professionals must raise their understanding of disability and of how impairments affect a disabled person’s ‘performance in the built environment. They must recognise there is no single packaged solution for generating inclusive environments the means to achieving independent and integrated living will be different for disabled persons with different impairments and circumstances. Disabilities such as mobility and visual impairment require more of the built environment (e.g. alert paving/directional guidance paving for the visually impaired) than other</i></p>

	Assessment criteria	Relevant?	Details/evidence	Potential health impact	Initial considerations for the design team and further recommendations
					<i>disabilities such as HIV. Issues may arise where environmental adaptations required by disabled people with a particular impairment cause problems for disabled people with a different impairment, e.g. drop kerbs are essential for wheel chair users but confuse visually impaired persons unless tactile surfaces or audio signals are incorporated.</i>
Crime reduction and community safety					

6.1	Does the proposal incorporate elements to help design out crime?	Yes	<p>Barton Park development – the layout of the development and guidance contained in the Design Code were reviewed and approved by Oxfordshire’s Crime Prevention Design Advisor as part of the outline planning application. The proposals for the A40 junction, primary street, linear park and greenways have been designed in accordance with the Design Code and approved outline application parameter plans. This has meant that key secure by design principles, such as defensible space, natural surveillance and active frontage, are already embedded in the layout and design. The detailed proposals have therefore sought to further strengthen crime prevention measures.</p>	Positive	<p>Underhill Circus redevelopment – proposal should incorporate elements to help design out crime such as natural surveillance and active frontage.</p>
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	Assessment criteria	Relevant?	Details/evidence	Potential health impact	Initial considerations for the design team and further recommendations
6.2	Does the proposal incorporate design techniques to help provide people feel secure and avoid creating 'gated communities'?	Yes	<p>Barton Park development - The streetscape and public realm design seeks to facilitate community interaction - e.g. tertiary streets provide opportunities for pocket parks which provide safe informal play and help with community interaction.</p> <p>Underhill Circus redevelopment - proposal provides a pedestrianised zone (boulevard) for community gatherings and associated public amenity providing safe informal play and help with community interaction.</p>	Positive	It is considered that the proposed schemes incorporate design techniques to help make people feel secure and avoid creating 'gated communities' and no further recommendations are made at this stage.
6.3	Does the proposal include attractive, multi-use public spaces and buildings?	Yes	<p>Barton Park development – Includes commercial centre with food store, primary school, community hub, sports pitches and pavilion.</p> <p>Underhill Circus redevelopment – includes upgrade to Community Neighbourhood Centre services provision</p>	Positive	Any buildings open to the public should be fully accessible for all such as the disabled.
6.4	Has engagement and consultation been carried out with the local community?	Yes	Engagement has been carried out with the local community as part of the Barton Health New Town Programme.	Positive	Refer to Section 9 for other engagement recommendations.

	Assessment criteria	Relevant?	Details/evidence	Potential health impact	Initial considerations for the design team and further recommendations
Access to healthy food					
7.1	Does the proposal facilitate the supply of local food, i.e. allotments, community farms and farmers' markets?	Yes	<p>Barton Park development - The Barton Healthy New Town Programme is supporting development of initiatives to facilitate the supply of local food – with Good Food Oxford supporting connections to allotments, farmers markets, food stores and residents.</p> <p>Underhill Circus redevelopment – Proposals for local convenience store to sell fresh fruit and vegetables</p>	Positive	The proposed schemes facilitate the supply of local food and no further recommendations are made at this stage.
7.2	Is there a range of retail uses, including food stores and smaller affordable shops for social enterprises?	Yes	<p>Barton Park development – The Commercial Centre features a food store.</p> <p>Underhill Circus redevelopment – Proposals for local convenience store to sell fresh fruit and vegetables whilst combining the local convenience store with the pharmacy.</p>	Positive	The proposed schemes offer a range of retail and no further recommendations are made at this stage.
7.3	Does the proposal avoid contributing towards an over-concentration of hot food takeaways in the local area?	Yes	<p>Barton Park development – The Commercial Centre features a food store. There are no plans for encouraging the presence of hot food takeaways.</p>	Positive	The proposed schemes avoid contributing towards an over-concentration of hot food takeaways in the local area and no further

	Assessment criteria	Relevant?	Details/evidence	Potential health impact	Initial considerations for the design team and further recommendations
			Underhill Circus redevelopment – Proposals for local convenience store to sell fresh fruit and vegetables whilst combining the local convenience store with the pharmacy.		recommendations are made at this stage.
Access to work and training					
8.1	Does the proposal provide access to local employment and training opportunities, including temporary construction and permanent ‘end-use’ jobs?	Yes	Barton Park development – Temporary job provision during the construction phase and during the operation phase due to commercial centre with food store, primary school, community hub, sports pitches and pavilion. The bus service will be linking the proposed development to Oxford city centre. The Oxford City Centre (No.8) Bus route will be extended into the site for Barton and loop around the primary school via the secondary street. A new shuttle service to the John Radcliffe Hospital will also be provided via the new Western Junction. Barton Underhill Circus redevelopment - Temporary job provision during the construction phase and during the operation phase due to Neighbourhood Centre upgrade services provision	Positive	Consider opportunities to source local employment during construction and operation through promotion of jobs in local job centres and schools/colleges. Include apprentice and volunteering schemes.

	Assessment criteria	Relevant?	Details/evidence	Potential health impact	Initial considerations for the design team and further recommendations
8.2	Does the proposal provide childcare facilities?	Yes	<p>Barton Park development - There is potential for healthcare outreach services (mother and baby clubs, adult learning, advice surgeries etc.) to be provided as part of flexible community floorspace within the Community Hub.</p> <p>Underhill Circus redevelopment – proposals include upgrade to services provided by the Barton Neighbourhood Centre.</p>	Positive	There are no further recommendations to make at this stage.
8.3	Does the proposal include managed and affordable workspace for local businesses?	Yes	<p>Barton Park development – proposals to include opportunities for farmers markets</p> <p>Underhill Circus redevelopment – TBC</p>	Positive	Underhill Circus redevelopment should include affordable workspace for local businesses
8.4	Does the proposal include opportunities for work for local people via local procurement arrangements?	Yes	<p>Barton Park development – During the construction period, the level of construction employment is expected to be significant (approximately 12 full-time equivalent jobs (FTE) in 2014, rising to 109 FTE jobs by 2019). These jobs would provide potential employment opportunities in the local area. The presence of construction employment in the local area would also have an indirect beneficial impact on the local economy,</p>	Positive	Underhill Circus redevelopment - Local employment and the use of local suppliers during construction and operation should be promoted.

	Assessment criteria	Relevant?	Details/evidence	Potential health impact	Initial considerations for the design team and further recommendations
			<p>for example by helping to boost trade in local shops and cafes.</p> <p>The proposed development includes retail space, a hotel and a community hub, including a primary school. It is estimated that a net total of 206 new FTE jobs could be generated from the Proposed Development with almost 40% of these jobs (82 FTE jobs) generated from the new food superstore.</p>		
Social cohesion and lifetime neighbourhoods					
9.1	Does the proposal connect with existing communities, i.e. layout and movement which avoids physical barriers and severance and land uses and spaces which encourage social interaction?	Yes	<p>Barton Park development – The building design process is aiming for connection and careful integration with existing communities. (Barton design Code)</p> <p>Reduces community severance through improved commuting links and encourages community interactions.</p> <p>The streetscape and public realm design seeks to facilitate community interaction - e.g. tertiary streets provide opportunities for pocket parks which provide safe</p>	Positive	It is considered that the proposed schemes connect existing communities and no further recommendations are made at this stage.

	Assessment criteria	Relevant?	Details/evidence	Potential health impact	Initial considerations for the design team and further recommendations
			<p>informal play and help with community interaction.</p> <p>Underhill Circus redevelopment - proposal provides a pedestrianised zone (boulevard) for community gatherings and associated public amenity providing safe informal play and help with community interaction.</p>		
9.2	Does the proposal include a mix of uses and a range of community facilities?	Yes	<p>Barton Park development – a community hub, parks, primary school, commercial centre form part of the mix of uses/community facilities.</p> <p>Underhill Circus redevelopment - Community Neighbourhood Centre services upgrade provision, additional parking, retaining existing doctors</p>	Positive	It is considered that the proposed schemes will include a mix of uses and a range of community facilities and no further recommendations are made at this stage.
9.3	Does the proposal provide opportunities for the voluntary and community sectors?	Yes	<p>Barton Park development – The Barton Healthy New Towns Programme is facilitating opportunities for the voluntary and community sectors such as the community hub. The community hub will include spaces that can be utilised by a wide range of community groups.</p>	Positive	<p>Consider using public art to foster community capital and enhance the public realm.</p> <p>Opportunities for a community composting scheme should be explored. This would serve the purpose of an educational and awareness-raising resource to</p>

	Assessment criteria	Relevant?	Details/evidence	Potential health impact	Initial considerations for the design team and further recommendations
			Underhill Circus redevelopment – The upgrade to services provided by the Neighbourhood Centre will facilitate opportunities for the voluntary and community sectors such as GP service.		promote sustainable resource and waste management. Opportunities for the scheme sponsor to be a charity or a trust.
9.4	Does the proposal address the principles of Lifetime Neighbourhoods?	Yes	Barton Park development – The proposal adheres to the Lifetimes Homes Standards Underhill Circus redevelopment – TBC	Positive	No further recommendations are made at this stage.
Minimising the use of resources					
10.1	Does the proposal make best use of existing land?	Yes	Barton Park development – materials such as soil will be reused on site where possible. The development will use the existing land, trees and hedgerows to make it into an exemplar garden suburb. Underhill Circus redevelopment – the proposals will make best use of existing land – e.g. improve Green Belt sight lines from existing public routes neighbouring the site.	Positive	It is considered that the proposed schemes makes best use of existing land and no further recommendations are made at this stage.

	Assessment criteria	Relevant?	Details/evidence	Potential health impact	Initial considerations for the design team and further recommendations
10.2	Does the proposal encourage recycling (including building materials)?	Yes	Barton Park development – during construction, waste will be separated into key waste groups – the contractor would provide a suitable area within the construction site for the separation of materials for recycling. During operation, residential units will incorporate sufficient internal waste storage containers to promote the separation of recycling and compostable materials at source.	Positive	Underhill Circus redevelopment – the design should encourage recycling including building materials
10.3	Does the proposal incorporate sustainable design and construction techniques?	Yes	Barton Park development - This will be achieved through the following aspects of the development proposals: <ul style="list-style-type: none"> • Provision of a substantial level of social rented housing; • Provision of extensive recreational space and community facilities; • Energy efficient, climate resistant design; 	Positive	Design team to include local sourcing, embodied energy and waste minimisation in appraisal of construction materials.

	Assessment criteria	Relevant?	Details/evidence	Potential health impact	Initial considerations for the design team and further recommendations
			<ul style="list-style-type: none"> • Achieving Code for Sustainable Homes Level 4 and BREEAM 'Very Good'; • A substantial number of new jobs during both the construction and operational phases; and • A mixed use development that can cater to local needs, minimising the need to travel. <p>Underhill Circus redevelopment – TBC</p>		The sourcing and transport of trees and planting should, where possible, minimise travel distance and consider sustainability credentials of source.
Climate change					

11.1	Does the proposal incorporate renewable energy?	Yes	<p>Barton Park development - It is proposed that the majority of homes will be heated by conventional standalone high efficiency gas condensing boilers.</p> <p>PV panels located on the roofs will then be used to meet the target of achieving a 20% regulated energy use contribution from renewable energy technologies.</p> <p>The commercial areas in Phase 1 of the development may be served by a central CHP led heating system operated under a private landlord system. Based on the development mix in this Such a solution would allow Oxford's 20% regulated renewable energy requirement to be easily met.</p> <p>The primary school maybe heated by a standalone biomass boiler with high efficiency natural gas boilers for backup. As a qualifying renewable energy technology, the biomass boilers would allow the 20% regulated renewable energy requirement to be readily met. This energy strategy will ensure that Code for Sustainable Homes Level 4 and BREEAM Very Good can be met.</p> <p>Underhill Circus redevelopment – TBC</p>	Positive	Underhill Circus redevelopment proposal should incorporate energy efficiency measures in the new residential homes and renewable energy measures such as PV panels on roofs or biomass boilers.
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	Assessment criteria	Relevant?	Details/evidence	Potential health impact	Initial considerations for the design team and further recommendations
11.2	Does the proposal ensure that buildings and public spaces are designed to winter and summer temperatures, i.e. ventilation, shading and landscaping?	Yes	<p>Barton Park development - All residential dwellings will be built in accordance with the ‘fabric first’ approach, meeting the requisite Fabric Energy Efficiency Standards (FEES) under Building Regulations part L1A.</p> <p>A range of options are available to meet the FEES, including high U-values for walls, windows, doors etc. through to thermal bridging and air permeability.</p> <p>Underhill Circus redevelopment – proposals to improve existing fabric/materials used in the construction of flats.</p>	Positive	<p>Underhill Circus redevelopment – all new residential buildings should be built in accordance with the ‘fabric first’ approach, meeting the requisite Fabric Energy Efficiency Standards (FEES) under Building Regulations part L1A.</p> <p>A range of options are available to meet the FEES, including high U-values for walls, windows, doors etc. through to thermal bridging and air permeability.</p>
11.3	Does the proposal maintain or enhance biodiversity?	Yes	<p>Barton Park development - Measures will also be incorporated in to the Proposed Developed to ensure that the site is enhanced for biodiversity, where possible. Such measures include:</p> <ul style="list-style-type: none"> • Habitats associated with grassland hedgerows and trees to be actively managed during the operational phase to benefit biodiversity; • Provision of additional bat roost opportunities; 	Positive	<p>Underhill Circus redevelopment - Planting choices/landscaping proposals should create an attractive spaces for communities to enjoy.</p> <p>Create natural spaces for educational purposes e.g. bat and bird boxes, or bug homes/inset boxes etc. Avoid plants with poisonous berries that</p>

	Assessment criteria	Relevant?	Details/evidence	Potential health impact	Initial considerations for the design team and further recommendations
			<ul style="list-style-type: none"> • Extending and enhancing habitat suitable for water voles (i.e. along Bayswater Brook) which would mean that should this species return to the area there will be an increased habitat resource available; • Newly created habitat will include native shrub and tree planting including fruit trees and communal areas will be managed to benefit biodiversity, providing additional suitable habitat for nesting birds; • Creation of wetland habitat within the linear park will be actively managed to benefit biodiversity and a variety species. 		may create health hazards for small children.
11.4	Does the proposal incorporate urban drainage techniques?	Yes	Barton Park development - Rainwater harvesting strategy implemented across the site at either individual household or communal levels, potentially accompanied by some grey water recycling. Scheme designed for water attenuation with green roofs, permeable	Positive	

	Assessment criteria	Relevant?	Details/evidence	Potential health impact	Initial considerations for the design team and further recommendations
			<p>surfacing and a fully integrated SUDs system.</p> <p>Underhill Circus redevelopment – TBC</p>		

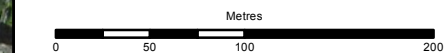
Figures



Legend

Site boundary

P0	2017-03-09	SJ	SJ	SJ
Issue	Date	By	Chkd	Appd



ARUP

Client
Oxford City Council

Job Title
Barton NHS Health New Town HIA

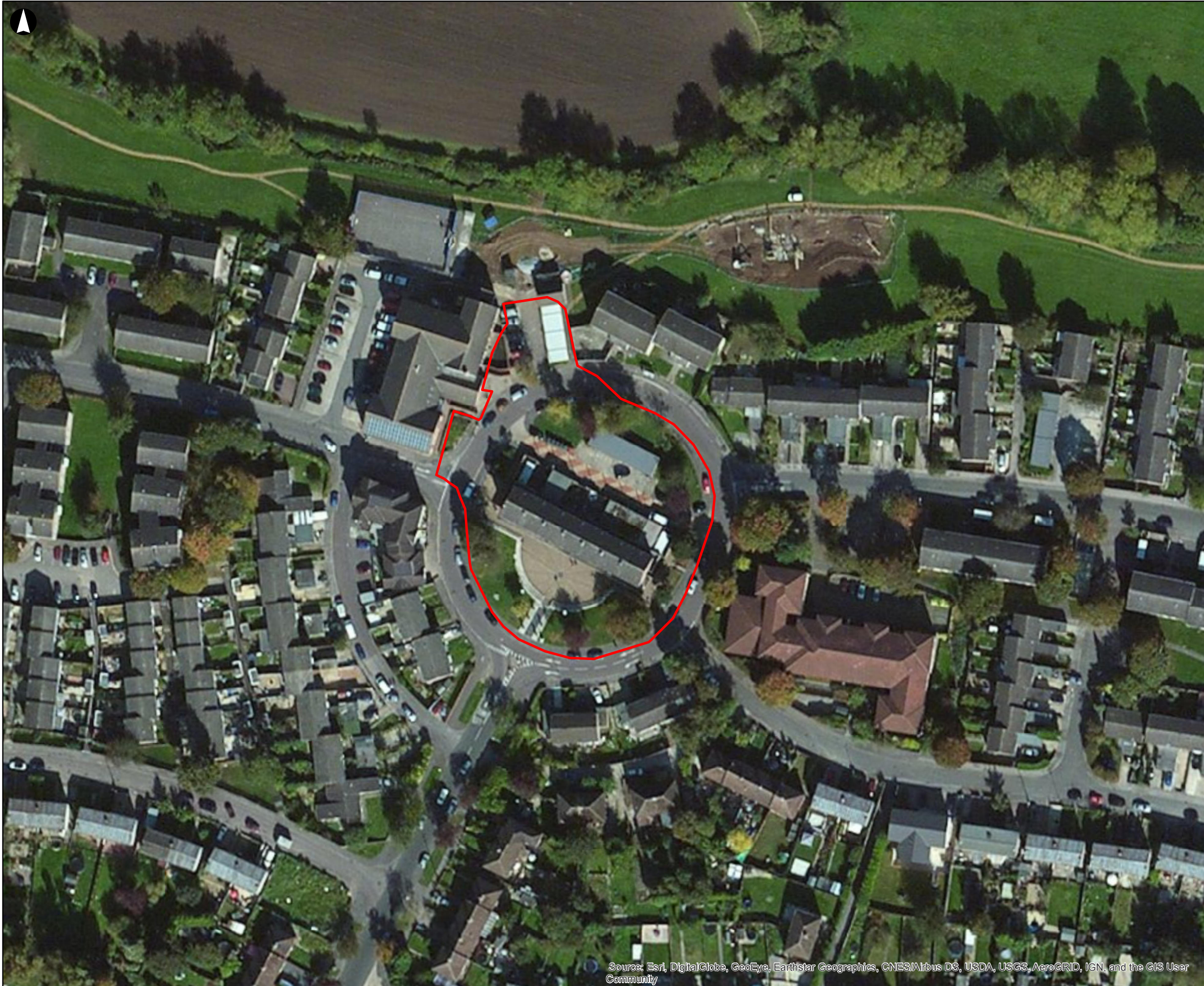
**Barton Park Development
Location Plan**

Scale at A3
1:4,000

Job No 254036-00	Drawing Status Preliminary
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Drawing No Figure 1	Issue P0
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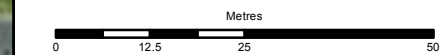
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



Legend

Site boundary

P0	2017-03-09	SJ	SJ	SJ
Issue	Date	By	Chkd	Appd



ARUP

Client
Oxford City Council

Job Title
Barton NHS Health New Town HIA

**Barton Underhill Circus
Redevelopment Location Plan**

Scale at A3
1:1,000

Job No 254036-00	Drawing Status Preliminary
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Drawing No Figure 2	Issue P0
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Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

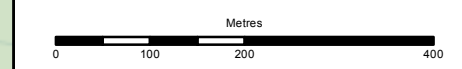


Legend

- Site boundary
- 500m buffer of site boundary
- LSOAs within 500m

P0	2017-03-08	SJ	SJ	SJ
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Issue	Date	By	Chkd	Appd



ARUP

Client
Oxford City Council

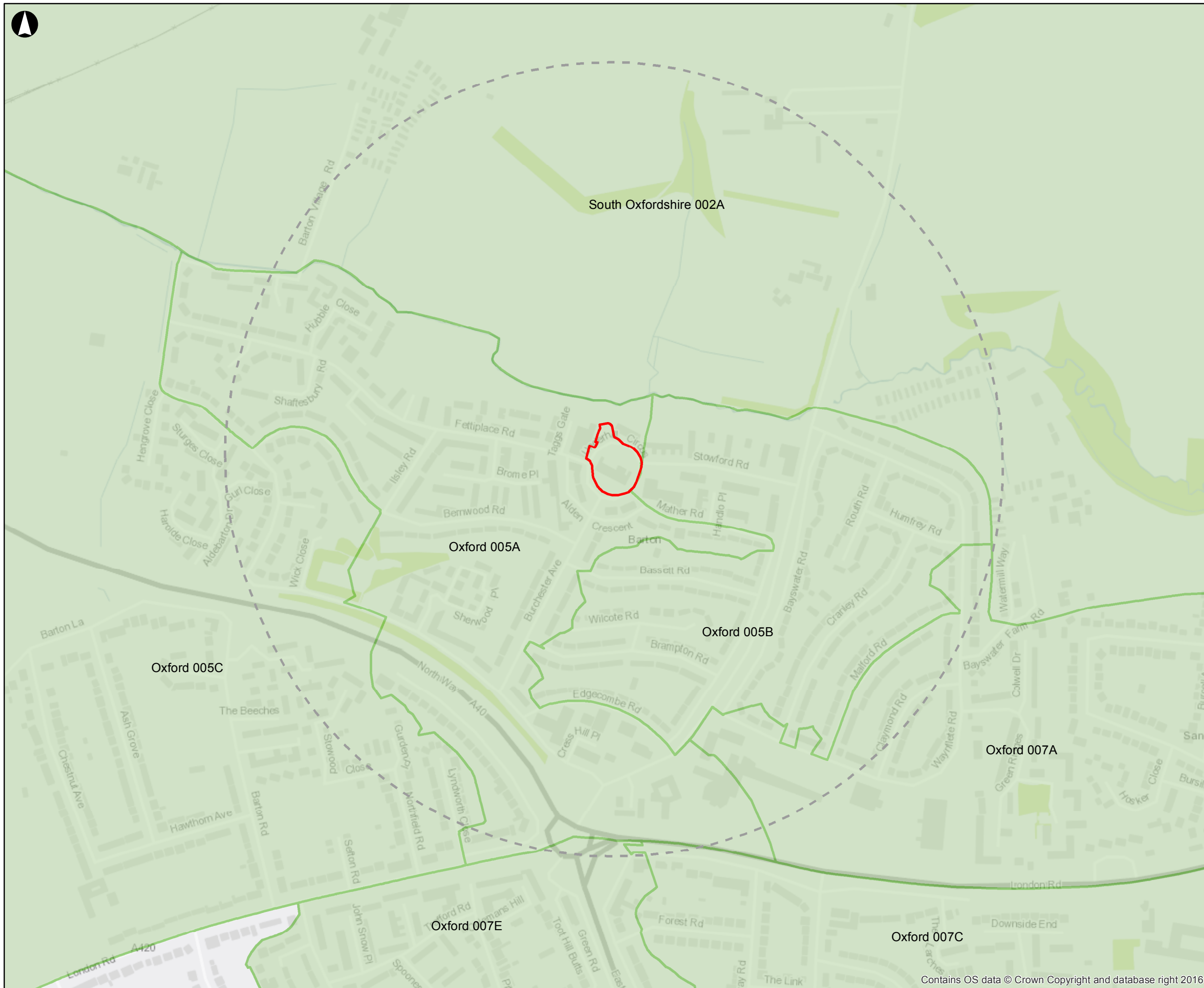
Job Title
Barton NHS Health New Town HIA

**Lower Super Output Areas (LSOAs)
within 500m of Barton Park
Development Site**

Scale at A3
1:8,000

Job No 254036-00	Drawing Status Preliminary
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Drawing No Figure 3	Issue P0
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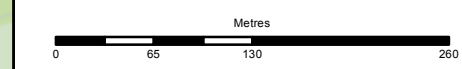


Legend

- Site boundary
- 500m buffer of site boundary
- LSOAs within 500m

P0	2017-03-08	SJ	SJ	SJ
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Issue	Date	By	Chkd	Appd



ARUP

Client
Oxford City Council

Job Title
Barton NHS Health New Town HIA

**Lower Super Output Areas (LSOAs)
within 500m of Barton Underhill
Circus Redevelopment Site**

Scale at A3
1:5,000

Job No 254036-00	Drawing Status Preliminary
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Drawing No Figure 4	Issue P0
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