

Health Impact Assessment MHE/OPA/15

Mill Hill East
Planning Application
October 2009

CONTENTS

- 1. Introduction 1
- 2. Description of Site and Proposed Development..... 3
- 3. Policy Context 5
- 4. Baseline Socio-economic and Health Conditions 11
- 5. Impact Assessment 14
- 6. Conclusions..... 27

Appendix A Socio-economic and Health Baseline Conditions

1. Introduction

- 1.1 This report considers the potential health impacts associated with the redevelopment of land at Mill Hill East for a residential led mixed use scheme. It has been prepared in direct response to the requirements of London Plan (2008) Policy 3A.23, and will be submitted to the London Borough of Barnet as part of a suite of documents supporting the planning application for Mill Hill East.
- 1.2 The World Health Organisation defines a Health Impact Assessment (HIA) as “*a combination of procedures, methods and tools by which a policy, programme or project may be judged as to its potential effects on the health of a population, and the distribution of those effects within the population*” (WHO, 1999). The key rationale behind HIA is that a community’s health is not only influenced by health services but also by a wide range of economic, environmental, social and psychological influences. It is important to note that HIA is a useful tool in promoting awareness of the wider determinants of health and reducing inequalities, but also has limitations. In particular, it is acknowledged that HIA’s involve value judgements as well as knowledge based judgements.

Aims and Objectives

- 1.3 The main objective of this report is to provide an analysis of potential health effects which may occur as a consequence of the proposed development. The HIA focuses on the potential impact of the development proposals on the determinants of health in the local area. The basis of this HIA is set on a broad socio-economic model of health which considers the wider determinants of health which are important to achieving good health and well being including income, employment, education, housing, environment, lifestyle and access to services, amenities and social networks.
- 1.4 The HIA has the following core aims:
- To identify the potential health impacts and benefits likely to arise from the development proposed at the Mill Hill East site; and
 - To identify potential means to mitigate health impacts and maximise health benefits.

Structure of the report

- 1.5 The report is structured as follows:
- **Section 3** describes the background to the scheme;

- **Section 4** provides a review of the relevant policy at a national and local level;
- **Section 5** describes the baseline conditions;
- **Section 6** outlines the impact assessment and the results; and
- **Section 7** provides recommendations and conclusions.

1.6 The report is supported by the following appendix:

- **Appendix A** – Baseline socio-economic and health conditions.

2. Description of Site and Proposed Development

Site Description

- 2.1 The site comprises approximately 33.6 ha (83.0 acres) and is located in the suburban area of Mill Hill, within the administrative area of the London Borough of Barnet. The site boundaries adjoin Frith Lane to the east, Partingdale Lane to the north and Bittacy Hill (B552) to the west. Mill Hill East Underground station (Northern Line) lies immediately to the south and Junction 2 of the M1 is approximately 2.2km (1.3 miles) to the south west. Central London is approximately 16km (10 miles) to the south and is easily accessible via the M1/A1/A41 and London Underground's Northern Line rail services.
- 2.2 The site comprises land owned by VSM Estates (Inglis Barracks), LBB (the 'Depot Site') and Annington Property Ltd. The MoD vacated Inglis Barracks as part of the MoDEL project and operations were relocated to RAF Northolt in 2008.

Proposed Development

- 2.3 Planning permission is sought for the comprehensive redevelopment of the site for residential-led mixed use development. This would involve the demolition of all the existing buildings except the Officer's Mess, which is to be retained and converted, to provide 2,174 dwellings, a primary school, GP surgery, 1,100 sq m of 'High Street' (A1/2/3/4/5) uses, 3,470 sq m of employment (B1) uses, a district energy centre, associated open space, means of access, car parking and infrastructure.

Amount and Uses

- 2.4 A schedule of the proposed development is set out in Table 2.1 below:

Table 2.1: Development Schedule

| Use | | New Buildings | Conversion of Existing Officers' Mess Building | Total |
|--|--|--------------------------|--|--------------------------|
| Residential (use Class C3) | One Bed Units | 638 | 3 | 641 |
| | Two Bed units | 959 | 7 | 966 |
| | Three Bed Units | 290 | 0 | 290 |
| | Four Bed Units | 239 | 0 | 239 |
| | Five Bed Units | 38 | 0 | 38 |
| | Total Units | 2,174 | 10 | 2,174 |
| High Street Uses (Use Classes A1/2/3/4/5) | Total Floorspace (GIA) | 1,100sqm (11,840sqft) | - | 1,100sqm (11,840sqft) |
| Primary School (Use Class D1) | Total Floorspace (GIA) | 3,430sqm (36,920sqft) | - | 3,430sqm (36,920sqft) |
| Employment (Offices and Light Industry) (Use Class B1) | Total Floorspace (GIA) | 3,470sqm (37,351sqft) | - | 3,470sqm (37,351sqft) |
| GP Surgery (Use Class D1) | Total Floorspace (GIA) | - | 530sqm (5,700qsft) | 530sqm (5,700sqft) |
| Energy Centre (Use Class Sui Generis) | Total Floorspace (GIA) | 630sqm (6,781sqft) | - | 630sqm (6,781sqft) |
| Associated Car Parking Spaces | 2,544 | | | |
| Associated Cycle Parking Spaces | 2,254 | | | |
| Associated Infrastructure | <p>Vehicle, Pedestrian and Cycle Routes</p> <p>Sustainable Urban Drainage System (comprising a network of swales, attenuation ponds and sub-surface holding tanks)</p> <p>A gas/biomass combined heat and power station and associated district heating network (serving the southern part of the site)</p> <p>Utilities (electricity, gas, potable water, telecommunications, drainage)</p> | | | |
| Associated Open Space | <p>5.95ha</p> <p>Comprising parks, public square, school/community sports pitches, and retained woodland.</p> | | | |

3. Policy Context

- 3.1 Health impact assessment is a relatively new appraisal tool and although there is no single agreed national approach or methodology, there is an increasing array of examples and informal guidance available. This document focuses on best practice in this field.
- 3.2 This policy section reviews a range of national, London wide and local policy documents which establishes the context for the Health Impact Assessment. This section identifies the key health policy drivers and priorities.

National Policy

The NHS Plan (2000)

- 3.3 This sets out the Government's strategy for investment in the NHS. The purpose and vision of the Plan is to give the people of Britain a health service fit for the 21st century; a health service designed around the patient.
- 3.4 The March 2000 budget was used to help fund the following:
- 7,000 extra beds in hospitals and intermediate care;
 - Over 100 new hospitals by 2010 and 500 new one-stop primary care centres;
 - Over 3,000 GP premises modernised and 250 new scanners; and
 - Clean wards.
- 3.5 The Plan makes a clear statement that investment has to be accompanied by reform. As part of this, there would be a new relationship between the Department of Health and the NHS, whereby the Department of Health will set national standards matched by regular inspection of all local health bodies by an independent inspectorate, the Commission for Health Improvement.

Our Health, Our Care, Our Say (2006)

- 3.6 This White Paper sets a new direction for the whole health and social care system, introducing a radical shift in the way in which services are delivered; ensuring that they are more personalised and that they fit into people's busy lives.
- 3.7 The four main aims of the White Paper are:
- Better prevention services with earlier intervention;
 - Giving people more choice and a louder voice;
 - Tackling inequalities and improving access to community services; and

- Providing more support for people with long-term needs.
- 3.8 These aims are set to be achieved with the help of the following initiatives:
- Practice based commissioning: where GP's are given more responsibility for local health budgets and individual practices are encouraged to work together;
 - Shifting resources into prevention: re-orientating health and social care services to focus together on prevention and health promotion, where more services and support are brought closer to where people need it most;
 - More care undertaken outside hospitals and in the home: aiming to provide more care in more local, convenient settings, including the home. Includes introducing a new generation of community hospitals and facilities with strong ties to social care;
 - Better joining up of services at the local level: increasing the amount of joint commissioning between PCTs and local authorities;
 - Encouraging innovation: increasing greater patient and user choice; and
 - Allowing different providers to compete for services: increasing the quantity and quality of primary care in deprived areas.
- 3.9 This paper indicates a shift in policy towards increasing provision of care at the local level bringing care closer to home. It also focuses on shifting resources towards measures aimed at preventing ill health.

Strategic Policy

The London Plan, 2008 (consolidated with alterations since 2004)

- 3.10 The adopted London Plan provides the overall strategic plan for London. It sets out an integrated economic, environmental, transport and social framework for the development of the capital over the next 20-25 years. It is an over-arching document that picks up on the 'places and spaces' aspects of all the other Mayoral strategies, and provides the strategic, London-wide context within which boroughs must set their detailed local planning policies.
- 3.11 Policy 3A.23 'Health Impacts' indicated that Boroughs should require Health Impact Assessments for major development proposals and have regard to the health impacts of the development proposals as a mechanism for ensuring that major new developments promote public health within the Borough,

Consultation Draft: The London Plan, October 2009

- 3.12 Published in October 2009, Policy 3.2 'Addressing Health Inequalities' states that new developments should be designed and constructed in ways that improve health and reduce

inequalities and health inequalities impacts of major planning applications should be considered through the use of health impact assessments.

- 3.13 The draft plan confirms that the living environment has a fundamental impact on the health of the population, whether positive or negative. Good housing, employment and a good start in life can all help to reduce health inequalities at the local level, while poor environmental quality, housing conditions or pollution can exacerbate them. Paragraph 3.10 states that the regeneration of existing areas is also important in reducing health inequalities.

[A Short Guide to Health Impact Assessment Informing Healthy Decisions, August 2000, Commissioned by NHS Executive London](#)

- 3.14 This guide introduces the key features involved in undertaking a health impact assessment. Health impact assessment offers a route to understanding the potential health risks and benefits entailed in any proposal.
- 3.15 The report recognises that it is important to tackle the root causes of illness and health inequality which means addressing many issues beyond the control of the NHS such as poverty, unemployment, poor housing, social exclusion, transport policies and environmental issues such as air pollution.
- 3.16 A prospective HIA offers the opportunity to consider potential health impacts before a policy is implemented, and thus makes adjustments that will maximise the beneficial effects and minimise any harmful effects on health.
- 3.17 The key activities in the actual appraisal include analysing the policy, programme or project; profiling the affected population; identifying and characterising the potential health impacts; reporting on the impacts and making recommendations for management of those impacts. It is then important that the results inform decision making and are monitoring and evaluated.

[Healthcare for London 2007](#)

- 3.18 Healthcare in London is a 10-year programme to transform healthcare and standards of health in the capital. It is run on behalf of, and will be funded by, the 31 Primary Care Trusts in London.
- 3.19 The need to improve London's healthcare system was highlighted in Lord Darzi's 2007 report "*A Framework for Action*". In the report, Lord Darzi set a 10-year vision to transform health and healthcare in London, to make it among the best in the world.
- 3.20 The report looks at extending localised service delivery for healthcare within London, with a wider variety of services being provided by polyclinics, which would carry out up to 50% of

services that are normally delivered by hospitals. This would allow pressure to be taken off existing hospitals, so they would be able to focus on more traditional services, such as accident and emergency.

- 3.21 The vision is a health service in London that, by 2017:
- Prevents ill health and improves Londoners' health as much as possible;
 - Provides care that is comprehensive, accessible and of excellent quality for everyone;
 - Focuses healthcare on individual needs and choices to ensure a better patient experience; and
 - Resources, implements and plans improvements by integrating high quality evidence with clinical and patient leadership.

Health issues in Planning – Best Practice, June 2007, Greater London Authority

- 3.22 This guide is intended to help London boroughs tackle health inequalities and promote healthy developments, mainly through the production of their development plan documents. The report sets out the wider detriments of health and how planning policies can have a long-term impact on health and well-being. Determinants include good quality and affordable housing; transport issues; employment and skills training; and education and early life amongst others.

Health Inequalities and Equality Impact Assessment of 'Healthcare for London: Consulting the Capital' March 2008, London Health Commission

- 3.23 This report presents the results of the health inequalities and equality impact assessment on the proposals contained in the '*Healthcare for London: Consulting the Capital*' proposals dated November 2007. The proposals involve fundamental changes in the way healthcare is delivered in London. The mechanisms implemented to undertake the assessment provide useful lessons for health impact assessments.
- 3.24 The report recognises that health inequalities and equality impact assessments are powerful planning tools that support decision makers in all sectors to ensure policies, strategies and / or plans are designed in ways to maximise the beneficial effects and minimise adverse effects on health and inequalities.

Local Policy

Barnet Unitary Development Plan Adopted 2006

- 3.25 The adopted UDP includes policies to guide the location of new health and social care facilities. Policy CS10 advises that development proposals for medical and dental surgeries

and other primary health care facilities, including changes of use of existing buildings, will be permitted where they are easily accessible and would not demonstrably harmful impact on the character of the surrounding area or amenities of nearby residential properties.

Mill Hill East Area Action Plan, 2009

- 3.26 The Action Plan proposes a residential led mixed use scheme for the site, It encourages a mix of other uses to support housing and jobs including health.

Choosing Health (Strategic Services Delivery Plan 2005 – 2008)

- 3.27 The Strategic Services Delivery Plan is concerned with *“Improving health, not just health care”* as it recognises that if sufficient emphasis was given to reducing the risk of getting ill in the first place, then people are more likely to live longer and healthier lives.
- 3.28 The plan states that Barnet PCT’s top health improvement study is helping people to quit smoking, as this can have the most rapid beneficial effect on a person’s health. The PCT will also strive to help people eat more healthily, avoid being overweight or obese, not drink alcohol to excess and take adequate physical exercise.

A Sustainable Community Strategy for Barnet 2006-2016

- 3.29 This Strategy is produced by Barnet’s Local Strategic Partnership and sets out how they will work to build on Barnet’s success as a first class suburb of London.
- 3.30 One of the main themes of the Strategy is achieving a ‘Healthier Barnet’, which includes a vision that by 2016, the life expectancy of all residents, particularly those living in what are currently Barnet’s deprived wards, will have increased. This is set to be achieved by encouraging healthier behaviour, providing access to good quality health services and targeting health and social care at those who need it most.

Children and Young People Plan 2008/9 – 2010/11, Barnet Children and Young People’s Strategic Partnership Board

- 3.31 This plan aims to ensure that children and young people have access to excellent health, education and leisure facilities.
- 3.32 The plan recognises that Barnet will experience significant changes over the next 10 years, including a growth in population, largely as a result of major regeneration and development.

- 3.33 The report states that new developments should be planned with safety and accessibility in mind. Working with developers to ensure that the education and health needs of new communities are met is key to achieving these aims.

Delivering Health in Barnet – The Patient Commissioning Prospectus 2008/9

- 3.34 The Prospectus highlights the main ways in which Barnet PCT work to improve health and health care. These include:
- Looking at ways to improve the long term health of children, adults and older people;
 - Ensuring that changes make a real difference to the community's health and social well-being; and
 - Creating a long-lasting legacy of good health for future generations.
- 3.35 The Prospectus also provides details on the Five-Year Plan for Barnet Health Services, which is being drawn up by the PCT and focuses on five important aims:
- Commissioning services to meet core standards of safety, quality, dignity, respect, privacy, cleanliness and evidence-based practice;
 - Working to improve health and offer long-term preventative support;
 - Continue to bring services closer to peoples homes;
 - Commissioning specialist care from recognised centres of excellence; and
 - Supporting people to live independently in their homes and to manage healthcare needs.

4. Baseline Socio-economic and Health Conditions

- 4.1 A review of baseline socio-economic and health conditions is provided at Appendix A, however an overview is provided below:

Population/Demographic Profile

- Barnet currently has the second largest resident population of the 33 London boroughs, with mid-2007 estimates suggesting a borough-wide population of 329,700. Taking into account projected housing growth, this figure is expected to grow to 373,200 by 2021 (LBB Annual Monitoring Report, 2007).
- The Mill Hill ward has a higher proportion of children (0-15) and 30-44 year olds than the borough-wide profile, and conversely there are a lower proportion of young adults and retired persons than average trends. At 2007 the working age population in Mill Hill was 10,981 people, which constitutes 62.2% of the ward population.
- 2001 Census data indicates that 26% of the resident population of Barnet is comprised from ethnic groups other than white, and the most common religions of residents in Mill Hill are Christianity and Judaism.
- The socio-economic composition of Mill Hill's resident population is relatively higher in grade when considered against the borough, London-wide and national trends with 70.3% of the ward in either AB Grade or C1 Grade occupations (ONS, 2001 – see Appendix A for definitions). Furthermore 31.7% of Barnet residents are classed as 'symbols of success', and 22% of residents being classified within the 'urban intelligence' grouping (Mosaic UK, 2009).

Human Health

- Relative to the rest of the nation, Barnet's life expectancy is almost two years higher for both male and females at birth, at 79.5 and 83.6 years respectively (Health Statistics Quarterly, No 40, Winter 2008). The overall mortality rates are significantly lower than the national average (28 per 100,000 compared to 39 per 100,000 nationally) and 14.6% of the total population are living with limiting long-term illness, compared with 15.4% across London and 17.9% nationally.
- Whilst the number of teenage conceptions within Barnet had increased 1998 to 2004, this figure fell 2004-05 to 28.7 per 1,000 women between the ages of 15 and 17, and is markedly down on the London and national averages, standing at 40.1 and 41.1 respectively ('A Health Profile of Barnet' - April 2008).

Economic Conditions

- At July 2009, the claimant count¹ for the UK stood at 4.1%, in London this figure was marginally higher at 4.2% and the borough stood at 3.3%. The proportion of those within the borough featuring in the claimant count was somewhat lower at 3.3% and the figure for Mill Hill lower still at 2.95% (324 of 10,981 of working age population). Average earnings in Barnet of £33,935 are also relatively strong compared to the England and Wales average of £26,456, but lower than the London average of £37,508 (ONS, July 2009).
- During 2006/7 Barnet experienced an overall crime rate of 52.3 crimes per 1,000 people, which is lower than the national average at 61.1 crimes per 1,000 (CLG, Local Authority Profiles, 2007).
- According to 2001 census data the resident population of Mill Hill has a lower proportion of people with no qualifications in comparison to the wider borough, London and England and Wales. In addition, there are also a higher proportion of residents achieving Level 2, 3, 4 and 4/5 qualifications in comparison to regional and national figures. As mentioned above a relatively high proportion of Mill Hill's resident population is employed in higher grade occupations compared to the rest of London; according to 2001 ONS statistics the predominant occupation for Mill Hill's occupation is 'Managers and Senior Officials' (21.8%) and 'Professionals' (21.7%), whilst the same statistics for London were just 14% and 10% respectively.

Housing Conditions

- Within Mill Hill ward the majority of the housing stock is owner-occupied (74% in 2001), which is higher than the same statistic for the borough (66.6%) and London (69.7%). The proportion of Council-owned households at just 6.1% is lower than borough (10.5%) and London (17.1%) figures (2001 Census data). The total level of overcrowding (as defined in the 2001 Census) in Barnet stands at 13%; this figure is lower than that for London (17%), but higher than the national level (7%). Across the borough and London, overcrowding in private housing stands at a similar level at 9%. The level of overcrowding in social housing in Barnet stands at 4%, which is lower than that in London (7.6%). (Source ONS, 2001).

Index of Deprivation

- The Index of Multiple Deprivation (IMD) was conducted in 2007 and covers a range of social and economic issues, including health, crime and unemployment. Generally, Barnet

¹ Claimant count is defined as the % of the resident working age population unemployed and claiming Jobseekers Allowance.

scores well ranked at 128 out of 354 districts. However, since 2004 Barnet's position in these rankings has fallen, showing that elements of deprivation have increased. Barnet has increased 65 places since 2004, representing the highest increase of any local authority on record, and can be attributed to several of the IMD measures.

- Pockets of unemployment deprivation (involuntary exclusions of the working age population from the world of work) are visible all over Barnet, but with a particular concentration in the west of the borough. The Borough has comparatively fewer areas with large proportions of people suffering from health deprivation, but there are a number of areas classed as being within the most deprived brackets of living environment deprivation.
- The income IMD represents the average percentage of the population by ward in Barnet living in income deprivation, which is measured by 'recipients of means tested benefits'. The wards with the highest percentage of residents receiving means tested benefits are generally located to the west of the borough. The crime IMD identifies pockets of crime and disorder across the borough, but mostly concentrated in the west of the borough. Again, the IMD relating to educational attainment identifies pockets of deprivation across the borough, but the focus for this deprivation is in the west of the borough.

Existing Healthcare Services

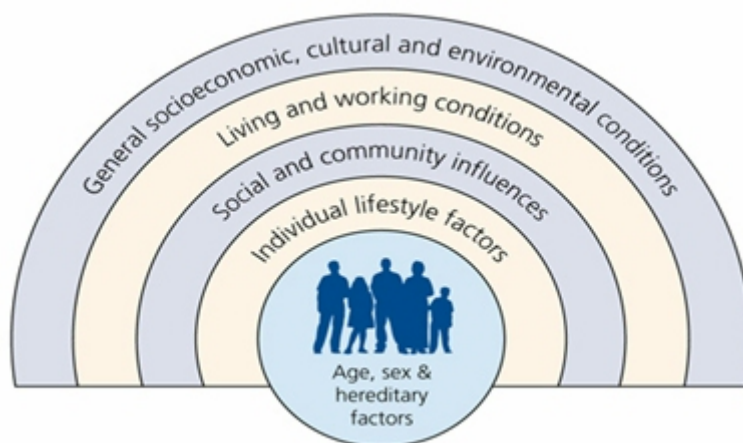
- The site falls within NHS London and the local mental health provider is Barnet, Enfield and Haringey Mental Health NHS Trust. The local acute healthcare provider is Barnet and Chase Farm Hospitals NHS Trust who operate Barnet and Chase Farm Hospitals and under the Healthcare Commission's Annual Healthcheck ratings, the Trust was rated as 'good' for 'quality of service' and 'fair' for 'use of resources' in 2007/8. Local primary healthcare is provided by Barnet Primary Care Trust (PCT), which achieved a 'fair' score for both use of resources, and quality of services.
- The primary care centre for the area is Finchley Memorial Hospital located on Granville Road approximately 1.7km from the site, which provides outpatient and inpatient services (76 beds). It is understood that an expansion of the hospital is planned, and supported by an adopted planning brief for the site.
- The closest GP surgery to the site is the Bittacy Hill Surgery located on Langstone Way 0.5km from the site, with a further 13 surgeries within a 2km radius from the site. The Portner Pittack Dental Practice is located 0.5km from the site on Thornfield Parade, with a further nine dental practices located within a 2km radius.

5. Impact Assessment

Approach

- 5.1 The purpose of this section is to consider the potential impact of the proposed development on the determinants of human health and to identify mitigation measures where appropriate.
- 5.2 The wider determinants of health comprise a number of factors which influence the health of the population. Dahlgren and Whitehead’s diagram (see Figure 6.1, below) identifies the key factors influencing health. The biological factors (shown in the centre of the diagram) represent hereditary factors which are unique to each person and cannot be changed, however all other factors can be changed by human activity.

Figure 6.1 Dahlgren and Whitehead Diagram



Source: Dahlgren G and Whitehead M (1991) "Policies and Strategies to Promote Social Equity in Health". Stockholm, Institute for Future Studies.

- 5.3 The Barnet PCT 'Improving Health and Well Being in Barnet Update' sets out a more detailed summary of the main health determinants (see table 5.1):

Table 5.1 Key determinants of Health

| Fixed | Social and economic | Environment | Lifestyle | Access to services |
|--------|---------------------|--------------------|-------------------|--------------------|
| Genes | Poverty | Air Quality | Diet | Education |
| Gender | Employment | Housing | Physical activity | NHS |
| Ageing | Social Exclusion | Water Quality | Smoking | Social Services |
| | | Social environment | Sexual behaviour | Transport |
| | | | Alcohol | Leisure |
| | | | Drugs | |

Source: Improving health and well being in Barnet update, Barnet PCT.

- 5.4 The proposed redevelopment of the Mill Hill East site will create a new residential-led mixed use community, which is likely to influence some of the key determinants of health identified in Figure 6.1 and Table 5.1, above, as follows:
- Social and Economic;
 - Environment; and
 - Access to Services.
- 5.5 Accordingly, the impact assessment set out in this section focuses on the above determinants (the proposed development is not likely to influence lifestyle choices of existing or future residents, and therefore does not consider this matter).

Social and Economic

Population and Housing

- 5.6 It is estimated that the proposed development would have a resident population of 4,310 persons (a net increase of 3,966) (based on an assumed mix of 76% flats and 24% houses) (based on the Borough average flat household size of 1.74 and average house household size of 2.76 (source: ONS, 2001)). This would represent a 22.4% increase in the ward population and a 1.2 % increase in the borough population (based on mid-2007 population estimates).
- 5.7 The target market of the housing proposed (a higher amount of flats as opposed to houses) typically focuses on adults, with fewer children. The majority of the proposed dwellings are smaller units (74% are to be one/two bedroom). Accordingly, it is predicted that a large proportion of these dwellings will be occupied by a single person (including elderly persons).
- 5.8 The proposed development will increase the supply of housing in the study area by 1,901 (net) dwellings (including a substantial increase in the proportion of flats) which will have a beneficial effect on improving access to housing at both a local and borough level (and contribute to meeting wider sub-regional housing need). The proposed development will provide new dwellings which will benefit the new residents in providing high quality accommodation improving quality of life. High quality housing can contribute positively to the health of the population.
- 5.9 The proposed development will incorporate a mix of housing tenures, including a significant number of affordable dwellings. This will increase the availability of affordable housing to local people and will have a material effect on the tenure composition of the study area. This will make a substantial contribution towards meeting local housing needs and enhance accessibility to affordable new accommodation. Poor quality housing is often linked to poor health and consequently the development of a significant number new affordable dwellings will benefit lower income groups, provide decent housing and potentially improve health. Energy

efficient measures will be implemented as part of the proposals which will, in turn, reduce household fuel bills and fuel poverty.

Employment

- 5.10 The proposed development provides 'high street' (retail) uses, B1 employment space, a school and a GP surgery which all generate jobs (plus the homeworking opportunities associated with 2,174 new homes). It is estimated that this development has the potential to accommodate up to 486 permanent direct jobs (including home workers) plus 41 indirect and induced jobs which would be expected to bring significant benefits to the wider local economy. The scale of the permanent direct (and indirect) job creation is substantial and will bring borough wide benefits in terms of access to employment (and associated reductions in unemployment) and will contribute to wider economic development objectives for the North London sub-region. It is understood that all existing military personnel on the site have been relocated to RAF Northolt, consequently the proposed development will not result in the direct loss of any military jobs.
- 5.11 The health benefits associated with employment, a decent wage and improved economic conditions, include better access to leisure activities, healthier food and access to quality housing.

Crime

- 5.12 The proposed development will have full regard to the principles of designing out crime and will benefit from modern security technologies which are predicted to be less attractive to criminal activity and anti-social behaviour than the current position, as although the former Inglis Barracks site is surrounded by a secure wire fence, the remainder of the study area is lacking in security features.
- 5.13 The scheme will increase the permanent population, number of employees, and number of visitors to Mill Hill East, which would increase the number of people using the area during both peak (during the day) and off-peak (including overnight) times. It is predicted that this increased critical mass and diversification of users (which will include permanent residents) would act as a deterrent to anti-social behaviour in the area (through increased natural surveillance and informal social policing). This will help ensure residents have a good quality of life and feeling of wellbeing/security.

Environmental

- 5.14 The Environmental Impact Assessment has been prepared in accordance with European and national guidance and holistically considers the potential environmental effects of the

proposals at Mill Hill East. It is noted that that a number of the factors assessed have potential health implications. This section draws out the key health implications of the proposals as assessed in the Environmental Impact Assessment.

Air Quality and Dust

- 5.15 Air quality and dust emissions influence the quality of the environment, which in turn impact upon human health. Emissions from construction process and traffic are the most significant source of pollutants in this category. The assessment looks at emissions of NO₂ (nitrogen oxide) and PM₁₀ (dust). Acceptable levels are established in national and European legislation. This subsection considers the potential impact of the proposed development on air quality and its potential impact on the local population during the various phases of development.

Construction

- 5.16 Dust is unlikely to cause a statutory nuisance beyond 150m of the boundary of a construction site. There are a number of sensitive receptors within 150m of the Mill Hill East application site including the bus stops, residential properties, equestrian centre, golf course and superstore. The construction of the Mill Hill East development is expected to occur over a period of around five years – without the appropriate mitigation, this is likely to result in complaints (and therefore a significant impact) from residents / occupiers of sensitive receptors within 150m of the construction site. Dust impacts could therefore be significant. The prevailing wind direction is from the south-west; construction dust impacts are therefore most likely to occur at the receptors identified to the north east of the application site.

Operation

- 5.17 Once operational, air quality impacts are likely to occur due to vehicular emissions from traffic associated with the development, and due to emissions from the proposed energy centre. The individual and cumulative impact of the energy centre and traffic associated with the development on sensitive receptors has been assessed as part of the EIA. The maximum cumulative air quality impact of the energy centre and traffic associated with the development is assessed as being of slight adverse significance.
- 5.18 The energy centre will achieve a minimum 20% reduction in baseline carbon emissions. Low carbon heat will be generated from a combination of gas-fired, CHP and biomass boilers and then distributed to dwellings via a district heating network. Low carbon electricity generated by the CHP plant will be exported to the grid. The remainder of the development can reduce its energy demands through the use of solar thermal collectors and air source heat pumps.

- 5.19 Energy demands of the development will be further reduced through the energy efficient design of dwellings. Non residential dwellings will achieve a Building Research Establishment Environmental Assessment Method (BREEAM) excellent rating.

Mitigation Measures

- 5.20 In order to mitigate against the potential for emissions and nuisance from construction dust on the local population, Best Practicable Means (BPM) should be adopted. Measures need to be effective and proportionate to the risk of dust nuisance and will therefore be more stringent where construction activities are closer to sensitive receptors. These measures are likely to include the following measures:

Techniques such as:

- All plant and equipment to be maintained in accordance with appropriate legislation or manufacturers recommendations to ensure emissions to atmosphere are minimised;
- Engines of plant and machinery and lorries to be turned off at all times when not in use;
- No burning of material to take place on site;
- Ensure adequate water supply on site;
- Ensure run-off water from dust suppression activities is disposed of in accordance with appropriate legal requirement;
- Wheel washing at the exits from construction areas where there is a potential for dust and mud to be carried on to the highway;
- Regular visual monitoring of construction activities to identify any significant dust sources;
- Location of potentially significant dust sources away from construction site boundaries wherever possible;
- Water suppression in dry conditions to reduce dust emissions (use mobile bowsers or fixed sprayers as appropriate);
- A speed limit applied to all construction vehicles working on the construction site;
- Minimising heights for any stockpiles and tipping operations;
- Avoid double handling of excavated material wherever practicable;
- Seal or re-vegetate completed earthworks as soon as reasonably practicable after completion;
- Use of solid hoardings around the site boundary and dust generating activities;
- Sheeting of loads during transport of dusty/friable material;
- Ensure deliveries of bulk cement and other similar powder materials are in enclosed tankers and stored in suitable silos with emission control systems to prevent escape of material and overfilling during delivery; and
- In close proximity to potentially sensitive receptors, additional dust control procedures should be adopted as appropriate. These may include: Avoiding earthworks during dry weather or provision of additional suppression equipment to control dust; Ensure mixing of cement, grout and other similar materials takes place in locations remote from sensitive receptors or is totally enclosed; and Use increased hording heights around sensitive receptors.

- 5.21 The combined emissions from the energy centre and the change in vehicular emissions associated with the development are not predicted to lead to a significant deterioration in local air quality. Air quality objectives are expected to be met for both NO₂ and PM₁₀. No mitigation measures are therefore recommended for these air pollutants.

- 5.22 The proposed development contains measures such as the energy efficient design of buildings and on site renewable energy production which will minimise the greenhouse gas emissions associated with the scheme.
- 5.23 Overall, with the implementation of mitigation measures recommended through the Environmental Impact Assessment process the residual impact of construction dust and emissions is considered acceptable and not expected to adversely affect the local population and their health.

Contaminated Land and Water

- 5.24 Contaminated land can have a range of impacts on health as a result of chemicals contained within soil and the release of hazardous gases, as well as through infiltrating into water sources.

Construction

- 5.25 Workers on the site will be the most sensitive receptors during the construction phase. Therefore, a number of mitigation measures will be implemented to protect them, such as provision of Personal Protective Equipment and segregation of material to minimise contact with contamination or hazardous substances.

Mitigation Measures

- 5.26 The site is proposed for a mixed use development scheme all of which have different requirements from a remedial perspective. The primary school (and associated playing fields), is proposed to be located on the former British Forces Post Office site which is considered to have a high probability of containing contaminants. It is anticipated that the site would be remediated to agreed levels prior to the development commencing which would ensure the risks were not significant, particularly to the playing fields. Given the high sensitivity of this receptor there would still be a low risk.
- 5.27 The housing will also present the potential for exposure to contaminants in garden areas via skin contact, inhalation of dusts or exposure to gasses which may be generated by 'made ground'. The site will be remediated to agreed levels prior to development taking place. The remediation will reduce the magnitude of impacts to low.
- 5.28 With residential and commercial developments forming the majority of the development the proposed uses of the site in general will lower the probability of further ground contamination taking place at a future date. Remediation is likely to be required reducing the risks posed to water resources from contaminants within the 'made ground'.

- 5.29 It is proposed that a detailed ground investigation to identify areas of ground contamination and assess the risks to the proposed development will be undertaken. Where an unacceptable level of risk is expected, remedial measures would be proposed. This may include some, all or none of the following:
- Bio-remediation (in-situ / ex-situ on or off site);
 - Removal of material to landfill;
 - Creation of a capping layer (hardstanding on roads / car parks or clean cover in gardens or public open spaces);
 - Provision of gas protection measures in buildings (gas proof membranes, passive or active extraction methods etc);
 - Binding contaminants within the ground (e.g. mixing with concretes or lime stabilisation methods).
- 5.30 In conclusion, with the implementation of remediation measure to agreed levels (implemented as part of the EIA process), this will ensure that the residual impact will be considered acceptable and not adversely affect the health of the local population.

Noise and Vibration

- 5.31 Increased noise and vibration can have an affect on the health and wellbeing of local people. A development of this scale will create noise and vibration and the impact of this on sensitive receptors who live or work in close proximity is considered below.
- 5.32 The impacts from noise and vibration as a result of the development will come from three main sources, including:-
1. Construction (involving demolition, site preparation, piling, concreting and lifting);
 2. Increases in road traffic noise;
 3. Industrial plant noise (arising from IBSA House located to the north west of the site boundary and from the proposed energy centre).
- 5.33 The latter two sources of noise will come into play once the scheme is complete.

Construction

- 5.34 During the course of construction, various plant and machinery will move around within the site as the works progress. The noise level at each receptor will therefore vary depending on the position of the various plant. A variation of up to 23dB LAeq,T could be expected at receptors between activities occurring at the site boundary compared to the centre of the site (300m), depending on the phase and the location of work.
- 5.35 The closest noise sensitive receptors are occupiers of existing residential dwellings located adjacent to the western and eastern boundary of the site. The residential receptors on all

boundaries are a distance of 20-30m from the site boundary, and the BS5228 threshold value is predicted to be exceeded at this distance during each phase of activity.

- 5.36 Frith Manor School is 140m to the north-east of the site and total noise levels will vary between 58-70dB. The threshold value of 65dB would be exceeded while activities are undertaken at the site boundary.
- 5.37 Typically, it is considered likely that local residential receptors will be particularly sensitive to short term construction noise impacts given their proximity to the development site. However, the extent to which construction noise is audible or considered significant by an individual receiver will be dependent on the position of the construction activity on the site, which will move close to and further away from each receptor as the development progresses. Existing local noise sources will also be a significant factor in whether construction noise is audible at local sensitive receptors. With respect to the receptors close to the B552 Bittacy Hill an influential factor will be the level and composition of the traffic at the time when the construction works are being undertaken.

Road Traffic Noise

- 5.38 There is the potential for any change in traffic flows as a result of the development to increase levels of road traffic noise at existing receptors around the site. The highest levels of road traffic noise in the scheme opening year of 2017 are predicted to occur on Bittacy Hill and Frith Lane which are the main routes past the site. Levels of road traffic noise are predicted to be less on the site of the Scout Camp, which is a result of the increased distance from Frith Lane, and lower still on Bray Road and the Strategic through route, due to lower traffic flows.
- 5.39 The largest predicted change will be on Bray Road, where traffic noise levels are predicted to increase by more than 5dB. When considering the absolute levels of traffic noise on this road they are relatively low compared to traffic noise levels on Bittacy Hill and Frith Road, and close to the World Health Organisation guideline of 55dB $L_{Aeq,T}$ for external spaces.
- 5.40 There are predicted to be moderate adverse changes in road traffic noise levels within the development on Engel Park, and a minor change on Bittacy Hill. These are a result of the predicted increase in traffic flows of approximately 103% and 28% respectively on these roads with the development. A change of 1dB(A) is the minimum change that is considered to be perceptible by the typical person.
- 5.41 There is no predicted change in road traffic noise at Frith Manor School, and the remaining areas around the site are predicted to experience negligible changes of less than 1 dB(A) with the introduction of the development.

Industrial Noise Sources

- 5.42 An assessment of the noise impacts of the existing print-works in IBSA House (to the north-west of the site), the proposed energy centre (at the south of the site) and also any proposed fixed building services and plant items has been carried out with reference to British Standard 4142.
- 5.43 The assessment indicates that complaints would be likely due to noise from the print works at IBSA House with the introduction of new residential dwellings nearby. The impact would be limited to those residences facing the print works, as the three storey buildings would act as a noise barrier to the remaining areas of the site.
- 5.44 Although the location of the energy centre is known, its likely noise emission is not presently known. As a precautionary principle, it is recommended that where practicable, both the energy centre and any other operational plant should be designed to achieve 10dB below the existing background noise levels (LA90) thereby ensuring that disturbance and complaints are unlikely.

Mitigation Measures

- 5.45 During the construction phase, impacts of moderate adverse significance might be anticipated at the local receptors when assessed without mitigation measures in place, although this is highly dependant upon the type and location of the construction works that will be undertaken.
- 5.46 The EIA includes recommendations that 'Best Practicable Means' be employed to minimise construction impacts, including, for example the following:

- Careful selection of working methods and programme;
- Selection of quietest working equipment available e.g. electric/battery powered equipment, which is generally quieter than petrol/diesel powered;
- Use of regularly maintained and appropriately silenced equipment;
- Seeking to avoid the use of pneumatic breakers and drills when breaking pavements. Alternative methods include chemical slitters or falling weight breakers;
- Shutting down of equipment when not in use, i.e. maintain a 'no idling policy';
- Positioning of equipment behind physical barriers, i.e. existing features, hoarding or purpose built acoustic barriers;
- Directing noise emissions from plant, including exhausts or engines, away from sensitive positions;
- Handling of all materials in a manner which minimises noise, including minimising drop heights into hoppers and lorries;
- Switching all audible warning systems to the minimum setting required by the Health and Safety Executive, and using banksmen as an alternative to audible alarms wherever practicable;
- Planning the routes and times of deliveries to minimise nuisance to local communities;
- Reminding all site employees of their obligation to minimise noise on site by the use of signs and site inductions; and,
- Engaging in community liaison to explore ways of minimising noise impacts and increasing local tolerance to noise.

- Preparation of a 'Construction Environmental Management Plan' (CEMP) for reference throughout the construction phase would also assist in identifying potential impacts and provide specific mitigation measures where considered necessary.
- Following detailed identification and implementation of appropriate mitigation measures during the works, a reduced noise impact at local sensitive properties may be anticipated during worst-case construction activities.

- 5.47 An impact magnitude of 'negligible' has been identified at the majority of receptors surrounding the site, with a minor adverse change of +1.1dB on a section of Bittacy Hill. The largest impact magnitude is a major adverse increase in noise levels of +5.4dB for existing residents bordering Bray Road. However, the absolute noise levels adjacent to Bray Road are at least 10dB lower than at other locations. There is also a moderate adverse increase in noise levels of +3.0dB for existing residential receptors on Engle Park.
- 5.48 It is considered impractical to construct noise barriers along existing residential streets, and low noise surfacing is not very effective at traffic speeds of below 75kph. It is therefore suggested that a reduction in the traffic speed limit could be considered to reduce traffic noise levels on Engle Park. If not feasible, then the impact on Engle Park would remain as 'moderate adverse significant'.
- 5.49 It is considered that for new properties and the school the design goals can be met with appropriate mitigation in the form of suitably oriented properties and noise barriers such as boundary fencing, suitably specified glazing and ventilation, or a combination of the two.

Access to Services

- 5.50 This sub-section outlines the services and facilities the new population of Mill Hill East and surrounding residents will have access to, and considers the impact of the new population on local health services and the requirements for new provision.

Transport

- 5.51 The sustainable transport strategy for the new development aims to encourage the use of alternative modes of transport to the car including walking, cycling and public transport. This will be achieved through the integration of a cohesive network of safe and comfortable prioritised linkages for pedestrians and cyclists, including direct connection between key destinations such as Mill Hill East Tube Station. Existing bus services will be redirected through the development and will connect the scheme with neighbouring urban centres and public amenities. The network of linkages for pedestrians and cyclists will encourage walking and cycling which in turn will encourage physical activity which has health benefits.
- 5.52 The redevelopment proposals incorporate the following linkages:

- A direct pedestrian / cycle link running north-south through the middle of the site;
- A shared surface pedestrian / cycle link parallel to the east-west link;
- Footways flanking all other roads in the development;
- A series of traffic free 'green lane' connections;
- A controlled crossing linking the above to the Mill Hill East underground station;
- A controlled crossing on Bittacy Hill linking the site to the Sanders Lane pedestrian / cycle connection;
- A controlled crossing on Frith Lane linking the site to the Lovers Lane pedestrian / cycle connection;
- Footway improvements under the Bittacy Hill rail bridge to provide a pedestrian / cycle connection to the Gas Works development and Abercorn Street cycle route;
- Controlled pedestrian crossing at the junction between Bittacy Rise and Sanders Lane;
- Dropped kerb crossing featuring tactile paving and pedestrian refuge island on Engle Park;
- Dropped kerb crossing featuring tactile paving and pedestrian refuge island on the East West Link (aka Bray Road).

5.53 To mitigate against severance, pedestrian delay and improve pedestrian amenity on Engle Park / Bittacy Rise and Bray Road a number of measures have been proposed. These consist of a controlled crossing at the junction with Bittacy Rise/ Sanders Lane junction, and pedestrian refuge islands on Bray Road and Engle Park. Refuge islands have the particular advantage of allowing pedestrians the opportunity to cross just one lane of traffic at a time. All these measures take into account pedestrian safety and strive to ensure a pleasant experience. Increased physical activity through walking and cycling has associated health benefits. The proposals seek to ensure that these options are encouraged by prioritising pedestrians and cyclists and providing appropriate infrastructure.

Healthcare

5.54 The net increase in population of the proposed development is estimated to be 3,966 people, which will create additional demand for health care services. The NHS's Healthy Urban Development Unit Model has been applied to the proposals in order to quantify the net additional demand likely to be generated and the associated requirements, as follows:

- Acute healthcare: 4.83 beds;
- Mental healthcare: 0.9 beds;
- Intermediate and primary healthcare: 0.84 beds/spaces and 1.06 GP's

5.55 The proposed development includes a GP surgery (suitable for 2-3 GPs) which will provide significant surplus capacity in primary care provision in the local area, and provide new high quality primary care facilities to existing and future residents in the local area.

5.56 The planning application proposals incorporate a planning obligation to fund improvements to acute, mental and intermediate healthcare in the local area to meet the estimated additional demand set out above, ensuring that future residents have access to high quality healthcare facilities at all tiers of care.

Education

- 5.57 Information taken from GVA Grimley's Community Facilities / Social Infrastructure Strategy paper which accompanies the planning application estimates a net requirement of 54 pre-school/nursery places (full time equivalent (FTE)) and 168 primary school places. Bearing in mind the Local Education Authority's obligation to make provisions for parental choice (and having regard to the projected demographic profile of the proposed development) it is assumed that around 70% of demand could be for non-faith schools and 30% for faith schools (mix of Jewish, Roman Catholic and Church of England).
- 5.58 The development proposals include provision for a 2-form entry primary school (420 primary plus 39 nursery (FTE) places) which exceeds demand and will allow children from outside of the development to enrol. Benefits of a new primary school will be wide-ranging for the whole community (facilities will be made available to the wider community outside of core school hours) again enabling opportunities for social interaction and providing a community focal point. Improved education facilities encourages education attainment and therefore the provision of a new school on site will maximise opportunities for education attainment for the new residents.
- 5.59 The aforementioned strategy estimates that the proposed development will generate a need for a net additional 123 secondary school places. The planning application proposals incorporate a planning obligation to fund the expansion of existing schools to ensure that future residents have access to secondary education places.

Retail

- 5.60 The proposed development will increase the retail offer in the study area, through the development of a 'local centre' comprising A1/A2/A3/A4/A5 uses. Whereas the services and facilities previously provided by Inglis Barracks were only available to military personnel, the services introduced through the redevelopment of Mill Hill East will be publicly accessible, meaning there will be an increase in the range of community facilities available to local residents. This will help create a focal point for the community and a place for social interaction which can be locally accessible by walking and cycling. This will have health benefits in terms of improving quality of life for the new and existing residents in terms of convenience in accessing local retail facilities and through increased opportunities for social interaction.

Leisure

- 5.61 Access to open space has an important implication on health. Benefits include better physical and mental health and increased social interaction (Greater London Authority, 2007).

Improvements in landscape can ultimately create better environments for people to reside in, and can provide opportunities for sport and recreation, which can have a beneficial impact on health.

- 5.62 The proposed development will increase the study area population by approximately 3,966 people which will lead to an increase in demand for leisure and recreation facilities (including open space and sports facilities). The scheme is proposing to provide a total of 5.95ha of open space, including community / school sports pitches. This is a substantial proportion of open space and will provide extensive opportunities for leisure and recreation both for new residents and existing residents. On site opportunities for leisure will contribute positively to the psychological and physical health of the new population.
- 5.63 The proposals will embody the principle of good quality design in the quality of the streetscape and public realm and such an environment is conducive to encouraging walking and exercise which has associated health benefits.

6. Conclusions

- 6.1 The mixed use development proposal at Mill Hill East could potentially have a range of impacts on the health and general wellbeing of the existing and incoming population. This report has sought to look at a number of the key determinants of health which could be affected by new development to ascertain whether there will be any impacts upon human health of the existing and future population.
- 6.2 In socio-economic terms the proposal is likely to have health benefits through the provision of new housing, including a substantial proportion of affordable housing, and creation of new employment opportunities. The redevelopment will provide high quality new housing providing accommodation for new residents in a sustainable community and the mixed use element ensures that there are job opportunities available for local people.
- 6.3 With the implementation of mitigation measures recommended through the Environmental Impact Assessment process, the proposed development is not expected to have an adverse impact on environmental determinants of human health, and could potentially lead to improvements through the reduction in health risks.
- 6.4 In terms of access to services, the proposals include comprehensive transport proposals (with a focus on providing attractive alternatives to the car) which ensures inclusive (and more healthy modes) of access to existing and future services/facilities. The proposals make provision for new facilities (either directly on site or via planning obligations) to ensure that future residents will have access to high quality healthcare, education, and other community facilities without adversely affecting accessibility for the existing population. Such enhancements to accessibility are likely to have a beneficial impact on human health.
- 6.5 Overall, the assessment set out in this report indicates that the proposed development is likely to have a positive effect on human health.

Appendix A Socio-economic and Health Baseline Conditions

- i This Appendix sets out the baseline socio-economic and health conditions, having regard to the following indicators:
 - Population;
 - Human Health;
 - Economic Conditions;
 - Housing Conditions;
 - Index of Deprivation; and
 - Existing Healthcare Services.
- ii Comparative baseline data is provided for Mill Hill ward, London Borough of Barnet, London, and England and Wales as far as possible.

Population

Resident Population

- iii Barnet currently has the second largest population of the 33 London boroughs which is expected to increase due to incremental growth forecasts and from large scale regeneration. Revised Office for National Statistics population projections suggest the population will reach 367,400 by 2021, however these figures do not take into account housing growth, therefore a population figure of 373,200 (by 2021) is considered more realistic (LBB Annual Monitoring Report, 2007).
- iv Mid-2007 resident population estimates were 17,649 in Mill Hill ward (an increase of 14.8% since 2001) and 329,700 in Barnet (an increase of 4.8% since 2001) (Office for National Statistics (ONS), 2007). The mid-2007 population estimates suggest a population of density of 18.8 persons per hectare in Mill Hill ward (note that a large proportion of the ward comprises open countryside) and an average 38.0 persons per hectare across the Borough as a whole.
- v The existing site population (in 2009) is estimated to be 344 persons (based on the Borough average flat household size of 1.74 and average house household size of 2.76 (source: ONS, 2001). No further socio-economic data relating to on-site residents is available.

Age Structure

- vi Table A.1 below demonstrates the population age structure of Mill Hill in comparison to LBB, London, and England and Wales (using mid-2007 population estimates, source: ONS, 2007). This data indicates that Mill Hill ward has a higher proportion of children (aged 0-15) and 30-44 year olds than the Borough-wide profile, and conversely has a lower proportion of young adults and retired persons than average trends. The 2007 working age population in Mill Hill is 10,981 persons (62.2% of the total ward population) compared to a Borough-wide average rate of 63.3% and London figure of 66.9%.

Table A.1 Age Structure

| Age Group | Mill Hill | Barnet | London | England and Wales |
|-------------------------------|-----------|---------|-----------|-------------------|
| 0-15 | 22.3% | 20.4% | 19.3% | 18.9% |
| 16-29 | 16.2% | 18.7% | 21.6% | 18.6% |
| 30-44 | 24.9% | 24.5% | 26.7% | 21.7% |
| 45-64 (males)/45-59 (females) | 21.1% | 20.1% | 18.6% | 21.9% |
| 65+ | 15.5% | 16.3% | 13.8% | 18.9% |
| Total Resident Population | 17,649 | 329,700 | 7,556,900 | 51,092,000 |

Source - Office for National Statistics, mid-2007 population estimates

Ethnicity

- vii Census (2001) (ONS) data indicates that the resident population of Barnet comprises a high proportion (26%) of ethnic groups other than white (classed as 'White, White Irish, White Other') (23% in Mill Hill ward). The most common non-white ethnic group are Indian people (9% of the Borough's resident population and 7% of the Mill Hill ward resident population).

Religion

- viii Census data (2001), as set out in Table A.2, indicates that the most common religions of residents in Mill Hill are Christianity and Judaism (with significant proportions of non-religious persons).
- ix There is an Eruv covering much of the Borough, the northern extent of which abuts the site's southern boundary (an Eruv is an area within which observant Jews are allowed to carry out certain tasks otherwise forbidden on the Sabbath).

Table A.2 Religion

| Religion | Proportion of Residents (2001) | | | |
|--------------------------|--------------------------------|--------|--------|---------|
| | Mill Hill | Barnet | London | England |
| Christian | 49.7% | 47.3% | 58.2% | 71.7% |
| Buddhist | 0.9% | 1.1% | 0.8% | 0.3% |
| Hindu | 5.1% | 6.7% | 4.1% | 1.1% |
| Jewish | 16.9% | 14.8% | 2.1% | 0.5% |
| Muslim | 6.2% | 6.2% | 8.5% | 3.1% |
| Sikh | 0.5% | 0.4% | 1.5% | 0.7% |
| Other | 0.7% | 1.0% | 0.5% | 0.3% |
| No religion / not stated | 20.1% | 22.5% | 24.4% | 22.3% |

Source – Office for National Statistics, Census Data, 2001 Census (UV15)

Social Grade

- x Census data (2001), as set out in Table A.3 below, suggests that the resident population of Mill Hill ward contains an above average proportion of ABC1 social grades when compared to borough, regional and national trends (source: ONS, 2001).

Table A.3 Approximate Social Grade

| Social Grade | Proportion of Residents (2001) | | | |
|--------------|--------------------------------|--------|--------|---------|
| | Mill Hill | Barnet | London | England |
| AB | 33.7% | 31.0% | 26.5% | 22.2% |
| C1 | 36.6% | 36.3% | 33.0% | 29.7% |
| C2 | 8.5% | 9.0% | 11.0% | 15.1% |
| D | 9.5% | 11.2% | 14.3% | 17.0% |
| E | 11.8% | 12.5% | 15.2% | 16.0% |

Source – Office for National Statistics, Census Data, 2001 Census (UV50)

Grade AB= Higher and intermediate managerial / administrative / professional

Grade C1= Supervisory, clerical, junior managerial / administrative / professional

Grade C2= Skilled manual workers

Grade D= Semi-skilled and unskilled manual workers

Grade E= On state benefit, unemployed, lowest grade workers

Socio-Economic Classification

- xi The socio-economic profile for Barnet (classified by Mosaic UK and sourced from FOCUS) reveals that as of April 2009, 31.7% of Barnet residents are classed as ‘symbols of success’ (defined as people with rewarding careers who live in sought after locations). This is considerably higher than the average for Great Britain (9.7%). 22.0% of residents were classed within the ‘urban intelligence’ grouping (defined as young, single and mostly well-

educated people), compared to a rate of 7.4% in Great Britain. This data points towards a generally more affluent population, when compared to national averages.

Human Health

Life Expectancy

- xii Life expectancy at birth in Barnet is 79.5 years for males and 83.6 years for females. When compared to national levels, this is almost 2 years higher for both sexes. (Source: Health Statistics Quarterly, No 40, Winter 2008).

Mortality

- xiii Overall mortality rates in the borough are lower than the England average (28 per 100,000 locally, compared to 39 per 100,000 nationally). Lung cancer is still the most common cause of premature deaths from cancer in Barnet. Chronic obstructive pulmonary disease is the main cause of disability and death in both men and women aged 65 years and over and is responsible for 40% of all respiratory deaths. (Source: Barnet PCT "A Health Profile of Barnet: Executive Summary" April 2008).

Limiting Long Term Illness

- xiv 14.6% of Barnet's population lives with a limiting long term illness. This is lower than the levels experienced in London (15.4%) and nationally (17.9%). (Source: ONS, 2001).

Teenage Conceptions

- xv In 2005, Barnet had an overall teenage conception rate of 28.7 per 1,000 women aged 15 to 17. This was lower in comparison to the London (40.1) and England (41.1) averages. Throughout 1998 to 2004, there was a downward trend in teenage conception rates in London and England, but an upward trend in Barnet. However, this is changing and Barnet is starting to show a downward trend in figures with a reduction in conception rates from 34.9 per 1,000 in 2004 to 28.7 per 1,000 in 2005. (Source: Barnet PCT "A Health Profile of Barnet" April 2008).

Economic Conditions

Economic Activity

- xvi Mid-2007 population estimates suggest that the working age population in Mill Hill in 2007 was 10,981 persons, equating to 62.2% of the total resident population (which compares to a Borough-wide average rate of 63.3% and London figure of 66.9%). At the Borough level, 74.6% of the working age population was economically active in 2007 – a lower activity rate than for London (75.7%) and Great Britain (78.8) (data is not available at ward level) (ONS, 2007).
- xvii The UK headline unemployment rate estimate for the 3 months up to May 2009 was 7.6% (an increase of 1.9 percentage points on the previous year), while in London the rate was 8.6% (a year-on-year increase of 2 percentage points). The claimant count rate in June 2009 (the percentage of the resident working age population who are unemployed and claiming Jobseekers' Allowance) in Mill Hill ward was 324 persons (2.95% of the working age population). The claimant count rate in Barnet was 3.3% (a year on year increase of 1.5 percentage points), 4.2% in London (a 1.7 percentage point increase on the previous year) and 4.1% in the UK (1.9 percentage points higher than the previous year) (source: ONS, Labour Market Statistics, July 2009).

Income

- xviii Average (mean) annual pay for employees resident in Barnet in 2008 was £33,935, compared to £37,508 for London and £26,456 for England and Wales (2008 Annual Survey of Hours and Earnings, ONS, 2008).

Crime

- xix During 2006/7, Barnet experienced an overall crime rate of 52.3 crimes per 1,000 people. This is lower than the national level (61.1 crimes per 1,000 population) (Source: Communities and Local Government - Local Authority Profiles, August 2007).

Available Skills

- xx Census (2001) data suggests that the resident population of Mill Hill has a lower proportion of people with no qualifications in comparison to LBB, London, and England and Wales. Mill Hill also has a higher number of residents achieving Level 2, 3 and 4/5 qualifications in comparison to regional and national figures.

Table A.4 Qualifications

| | | Mill Hill | Barnet | London | England and Wales |
|---------------------------------------|---|-----------|--------|--------|-------------------|
| Percentage of people aged 16-74 with: | No qualifications | 18.0% | 19.6% | 23.7% | 28.9% |
| | Highest qualification attained Level 1* | 11.6% | 11.2% | 13.0% | 16.6% |
| | Highest qualification attained Level 2* | 20.7% | 18.0% | 17.1% | 19.4% |
| | Highest qualification attained Level 3* | 10.8% | 10.8% | 9.8% | 8.3% |
| | Highest qualification attained Level 4/5* | 33.8% | 35.5% | 31.0% | 19.9% |
| | Other qualifications/Level unknown | 5.0% | 4.8% | 5.4% | 6.9% |

Source - Office for National Statistics, Census Data, 2001 Census (KS13)

Level 1= 1+ 0 level passes, 1+ CSE/GCSE any grades, NVQ level 1, Foundation GNVQ.

Level 2= 5+ 0 level passes, 5+ CSE's (Grade 1s), 5+ GCSE's (Grade A-C), School Certificate, 1+ A levels/AS levels, NVQ level 2, Intermediate GNVQ.

Level 3= 2+ A Levels, 4+ AS levels, Higher School Certificate, NVQ Level 3, Advanced GNVQ

Level 4/5 = First degree, higher degree, NVQ levels 4 and 5, HNC, HND Qualified Teacher Status, Qualified Medical Doctor, Qualified dentist, Qualified Nurse, Midwife, Health Visitor.

Employment – Occupational Sectors

xxi Table A.5 below uses Census (2001) data to set out a profile of the occupational sector of the resident population. Mill Hill's resident employed population most commonly work within 'Managers and Senior Officials' (21.8%), 'Professionals' (21.7%) and 'Associate Professionals and Technical' (16.3%). This differs significantly from London where more residents are employed in 'Elementary Occupations' (17.8%), 'Process Plant and Machine Operatives' (16.5%) and 'Skilled Traders' (12.3%).

Table A.5 Occupation of Employment

| | | Mill Hill | Barnet | London | England and Wales |
|---|---------------------------------------|-----------|--------|--------|-------------------|
| Percentage of people aged 16 - 74 in employment working as: | Managers and senior officials | 21.8% | 8.1% | 14.0% | 15.3% |
| | Professionals | 21.7% | 7.9% | 10.0% | 11.2% |
| | Associate professionals and technical | 16.3% | 10.7% | 12.0% | 13.8% |
| | Administrative and secretarial | 14.4% | 12.0% | 12.7% | 13.4% |
| | Skilled traders | 5.6% | 12.3% | 13.3% | 11.5% |
| | Personal service | 5.9% | 7.0% | 6.7% | 6.9% |
| | Sales and customer service | 5.5% | 7.7% | 7.4% | 7.6% |
| | Process Plant and machine operatives | 3.5% | 16.5% | 10.9% | 8.4% |
| | Elementary occupations | 5.2% | 17.8% | 13.0% | 11.8% |

Source - Office for National Statistics, Census Data, 2001

Housing Conditions

Household Tenure

xxii Table A.6 below illustrates the breakdown of household tenure within Mill Hill, LBB, London, and England and Wales (using Census 2001 data). Within Mill Hill ward, the majority of the housing stock is owner occupied (74.0% in 2001) – a higher rate than the borough and London-wide averages (66.6% and 69.7% respectively). Conversely Mill Hill ward has a below average (11.3%) of social rented homes.

Table A.6 Household Tenure

| | | | Mill Hill | Barnet | London | England and Wales |
|--------------------------|-----------------|--|-----------|--------|--------|-------------------|
| Percentage of households | Owner occupied: | Own outright | 33.3% | 30.0% | 22.5% | 29.2% |
| | | Own with a mortgage | 40.0% | 35.6% | 33.5% | 38.9% |
| | | Shared ownership | 0.6% | 0.9% | 1.0% | 0.6% |
| | Rented from: | Council | 6.1% | 10.5% | 17.1% | 13.2% |
| | | Housing association/ registered social landlord | 5.2% | 4.5% | 9.1% | 6.1% |
| | | Private landlord or letting agency | 10.6% | 15.3% | 14.3% | 8.8% |
| | | Other | 4.1% | 3.2% | 2.9% | 3.2% |

Source – Office for National Statistics, Census Data, 2001

Overcrowding

- xxiii The total level of overcrowding (as defined in the 2001 Census) in Barnet stands at 13%; this is lower than that of London (17%) but considerably higher than the national level (7%). In terms of overcrowding in private housing, both Barnet and London suffer from similar levels (approximately 9%). The level of overcrowding in social housing in Barnet stands at 4%, which is lower than that in London (7.6%). (Source: ONS, 2001).

Index of Multiple Deprivation

- xxiv The Index of Multiple Deprivation (IMD) was conducted in 2007 and ranks all Lower Super Output Areas in the country with a deprivation score, which allows each area to be ranked relative to one another according to their level of deprivation. The Index covers a range of social and economic issues, including health, employment and crime.
- xxv Whilst the Index shows Barnet to be relatively prosperous, there are pockets of deprivation in existence. The borough is ranked 128 out of 354 districts. Despite this, Barnet's rank on most domains has risen since 2004, showing that its deprivation has increased. The exception is the "Education, Skills and Training" domain in which Barnet's rank has fallen, showing it now to be less relatively deprived in this area (Source: London Borough of Barnet website, 2008).
- xxvi Since the last Index of Multiple Deprivation which was published in 2004, Barnet's ranking has moved up the scale by 65 places; the greatest increase of any local authority on the scale (Source: Government Office for London, 2007).

Employment Deprivation

- xxvii Unemployment is considered to have a substantial effect on the health of adults, as unemployed people are often found to have lower levels of psychological well-being.
- xxviii The employment IMD measures employment 'deprivation' as involuntary exclusions of the working age population from the world of work. Pockets of the most deprived Lower Super Output Areas are visible all over Barnet, but are mostly concentrated in the west of the borough.

Health Deprivation

- xxix This index represents areas with higher rates of people who are disabled; whose life has been impaired by poor health; and who die prematurely. The IMD for Barnet shows that overall, the

borough has comparatively few areas with large proportions of people suffering from health deprivation.

Living Environment Deprivation

- xxx The Living Environment IMD measures both the 'indoors' living environment (quality of housing) and the 'outdoors' environment (air quality and road traffic accidents). The Barnet index shows that there are a number of areas classed as being within the most deprived brackets, representing little change from the 2004 indices.

Income Deprivation

- xxxi The Income IMD represents the average percentage of the population by ward in Barnet living in income deprivation, which is measured by "recipients of means tested benefits". The wards with the highest percentage of residents receiving means tested benefits are generally located to the west of the borough.

Crime and Disorder Deprivation

- xxxii The Crime and Disorder IMD measures the rate of recorded crime in Barnet and takes into account 33 different types of recorded offences, ranging from burglary to violence. Pockets of the most deprived Lower Super Output Areas in relation to crime and disorder are found all over the borough, but tend to be mostly concentrated in the west of Barnet.

Attainment Deprivation

- xxxiii The deprivation and attainment IMD for Barnet highlights data on educational performance, school absence, staying on rates at school and numbers entering higher education combined. The IMD shows that there are pockets of deprivation all over Barnet, including central Mill Hill, but the worst areas are generally found in the west of the borough.

Healthcare Provision

- xxxiv The site falls within the administrative area of NHS London – the Strategic Health Authority responsible for the provision of healthcare across London.
- xxxv The local mental healthcare provider is Barnet, Enfield and Haringey Mental Health NHS Trust.
- xxxvi The local acute healthcare provider is Barnet and Chase Farm Hospitals NHS Trust who operate Barnet and Chase Farm Hospitals. Under the Healthcare Commission's Annual Healthcheck ratings, the Trust was rated as 'good' for 'quality of service' and 'fair' for 'use of resources' in 2007/8.

xxxvii The local primary healthcare provider is Barnet Primary Care Trust (referred to as the PCT), which operates a ‘hub and spoke’ network of Community Hospitals, Primary Care Centres and GP surgeries. The PCT has a ‘fair’ score for both use of resources, and quality of services, under the annual Healthcare Commissions Ratings 2007/08. Finchley Memorial Hospital is the primary care centre for the area which provides outpatient and inpatient services (76 beds). Located on Granville Road, it is around 1.7km from the site. A planning brief was adopted by LBB in June 2007 which provides policy guidance for the expansion and enhancement of health care provision at the Finchley Memorial Hospital (which is currently at the planning stage) which could involve the development of a new community hospital to replace the existing facility (Barnet PCT/LBB, 2009). GP practices located within the vicinity of the Mill Hill site are set out below in Table A.7 (note that distances are measured from the centre of the application site).

Table A.7 GP Practices in the Vicinity of the Mill Hill East Site

| Surgery | Address | Distance |
|----------------------------|--|-------------------|
| Bittacy Hill Surgery | 28 Langstone Way NW7 1GR | 0.5km (0.3 miles) |
| K Dodds | 50 Church Crescent, London, N3 1BJ | 1.4km (0.9 miles) |
| Wentworth Medical Practice | 38 Wentworth Avenue, London, N3 1YL | 1.4km (0.9 miles) |
| A Patel | 19 The Grove, London, N3 1QN | 1.4km (0.9 miles) |
| P Backhouse | Cornwall House, Cornwall Avenue, London, N3 1LD | 1.4km (0.9 miles) |
| C Bangham | Cornwall House, Cornwall Avenue, London, N3 1LD | 1.4km (0.9 miles) |
| Leader Dr G L | 3 Hillcourt Avenue, London, N12 8EY | 1.6km (1 mile) |
| Ballards Surgery | 209 Ballards Lane, London, N3 1LY | 1.6km (1 mile) |
| Pace Health Systems Ltd | 1 Avondale Avenue, London, N12 8EP | 1.6km (1 mile) |
| J Cavendish | Block C Supreme House, 300 Regents Park Road, London, N3 2JX | 1.6km (1 mile) |
| R Fernandez | 300 Regents Park Road, London, N3 2JX | 1.6km (1 mile) |
| Durden Dr and Partners | 64 Lichfield Grove, London, N3 2JP | 1.8km (1.1 miles) |
| NC Faith | 25 Greencares, Hendon Lane, London, N3 3SF | 1.9km (1.2 miles) |
| Chase Lodge | Page Street, Mill Hill, London, NW7 2ED | 1.9km (1.2 miles) |

Source – Up My Street Website, 2008

Dental Surgeries

xxxviii There are a number of dental practices within the vicinity of the Mill Hill site as listed below in Table A.8 (note that distances are measured from the centre of the application site).

Table A.8 Dental Surgeries in the Vicinity of the Mill Hill site

| Surgery | Address | Distance |
|---------------------------------|---|-------------------|
| Portner Pittack Dental Practice | 8-9 Thornfield Parade, Holders Hill Road, London, NW7 1LN | 0.5km (0.3 miles) |
| Hillside Dental Practice | 120 Bittacy Rise, London, NW7 2HL | 1.1km (0.7 miles) |
| John Wolffe Dental Practice | 1 Holders Hill Parade, Holders Hill, London, NW7 1LZ | 1.3km (0.8 miles) |
| Grove Dental Studio | 17 The Grove, London, N3 1QN | 1.3km (0.8 miles) |
| Karen Woo | 393 Nether Street, London, N3 1QG | 1.4km (0.9 miles) |
| Anu Ki Fang | 113a Ballards Lane, London, N3 1XY | 1.4km (0.9 miles) |
| Cosmo Dental Practice | 138 Ballards Lane, London, N3 2PA | 1.6km (1 mile) |
| David Sher & Paul Keltz | 68 Southover, London, N12 7HB | 1.6km (1 mile) |
| G Cooper | 80 Southover, London, N12 7HB | 1.6km (1 mile) |
| R Babbar | 200 Ballards Lane, London, N3 2NA | 1.8km (1.1 miles) |

Source – *Up My Street Website, 2008*