



Quod

Health Impact Assessment

Huyton

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Q230634

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1 Introduction

This Health Impact Assessment ('HIA') considers the potential impacts on human health in relation to the planning application for the re-development of the former Halewood International Ltd premises at Sovereign Industrial Estate, Wilson Road, Huyton, L36 6AD ('the Site').

This document compiles an analysis of technical and design considerations of the development. Quod has prepared this HIA on behalf of DAVOS Property Developments Limited ('Davos') ('the Applicant') to be submitted as part of a full planning application for the redevelopment of the Site.

The Site and the Surrounding Area

- 1.1 The Site forms part of the Sovereign Business Park, within Huyton Business Park. The Site is bounded by Wilson Road to the north and Cronton Road to the east. This is the second phase of the proposed wider redevelopment of the Sovereign Distillery.
- 1.2 The existing site comprises warehouse uses which are vacant. These uses have been vacant since September 2022.

Proposed Development

- 1.3 The description of the development being applied for is ('the Proposed Development'):

"Partial demolition, reconfiguration and refurbishment of existing employment floorspace to create 2no. industrial warehouse buildings with ancillary offices (Classes E(g)(iii), B2 and B8) with dedicated servicing and car parking arrangements; erection of 1no. retail unit (Class E) with external display area and dedicated car parking and servicing arrangements; retention and amendment of existing site accesses along with internal estate roads; 2no. substations; landscaping; and associated works."

Health and Planning

- 1.4 Health is influenced by a combination of biological and environmental factors. However, environmental factors can be influenced through design and management of buildings and spaces which may be able to impact on health outcomes. These are recognised as the 'wider determinants of health' and include:
 - General socio-economic, cultural and environmental conditions;
 - Living and working conditions;
 - Social and community influences; and
 - Individual lifestyle factors.
- 1.5 Planning and development can play a key role within these wider determinants of health.

- 1.6 This HIA sets out an overarching perspective on the health issues surrounding the Site and seeks to demonstrate how the Proposed Development can respond to these issues to help create a healthier place through design and management.
- 1.7 The Proposed Development is assessed against the key wider determinants of health to identify its potential health impacts. Where impacts are identified, measures are proposed to help mitigate potential negative health effects and enhance positive health effects.

2 Methodology & Scope of HIA

- 2.1 The HIA will assess the Proposed Development during construction and occupation following completion against the wider determinants of health to establish potential health impacts.

Establishing the Baseline Conditions

- 2.2 To identify local health priorities for consideration within this assessment, a health focused baseline analysis is set out. The baseline conditions have been informed by publicly available data including Office for Health Improvement and Disparities (OHID)¹ Profiles and the Knowsley Council evidence base.
- 2.3 The underlying data from these datasets is compiled from a variety of sources including the Office of National Statistics (NHS), NHS and the Annual Population Survey. These datasets are supplemented with data from the 2021 Census².

Assessment

- 2.4 Knowsley Council has limited guidance on how to approach an HIA. The Validation Checklist outlines that the document objective is to provide details of the development's potential effects on a healthy community including supporting active healthy lifestyles and supporting the creation of healthy living environments.
- 2.5 This HIA sets out how the design of the Proposed Development, and mitigation measures required (if any), would address potential negative effects on health and promote beneficial health outcomes where relevant.
- 2.6 The assessment is set in the context of the local demographic and health baseline. This baseline analysis helps to inform how the health pathways and likely outcomes from the Proposed Development would have a potential effect.
- 2.7 The assessment will identify health pathways for relevant wider determinants of health in line with best practice, as follows:
- Supporting active healthy lifestyles
 - Access to employment
 - Access to open/ green space
 - Sustainable transport options
 - Supporting the creating of healthy living environments
 - Neighbourhood amenity during construction and operation (air quality, noise)
 - Healthy working environment.

¹ OHID (2021) Public Health Profiles. Available at: <https://fingertips.phe.org.uk/> [Accessed 05/10/2023]

² Office for National Statistics, 2021. Census.

- 2.8 Other key health pathways include access to healthy homes, however, given the commercial nature of the proposals this has been scoped out of this assessment.
- 2.9 The potential health pathways are then established for each of the identified wider determinants of health, informed by an extensive literature review (the most significant document being the Marmot Review into Health Inequalities³).
- 2.10 To assess the potential health impacts, the Proposed Development's response to identified local health priorities through the health pathways is set out (Section 4). Quod has used the assessment matrix as set out in the validation checklist to identify whether there will likely be a negative (-), neutral (0) or positive (+) impacts on health.
- 2.11 Where this assessment identifies likely negative effects, it also includes potential mitigation measures and recommendations that could reasonably be undertaken to minimise negative effects or maximise positive effects.
- 2.12 The HIA is a multidisciplinary process, therefore the assessment of the Proposed Development's potential health impacts has been informed through analysis of technical assessments submitted as part of the planning application. This includes relevant technical assessments that are submitted in support of the planning application:
- Design and Access Statement;
 - Planning Statement
 - Construction Management Plan;
 - Air Quality Assessment;
 - Noise Assessment;
 - Transport Assessment (and Travel Plan);
 - Sustainability and Energy Statement; and,
 - Drainage Strategy and Flood Risk Assessment.
- 2.13 These documents should be referred to where more technical detail on methodology or assessment assumptions are required.

³ The Marmot Review (2010) Fair Society, Healthy Lives. Strategic Review of Health Inequalities in England Post-2010.

3 Health Baseline

- 3.1 This section sets out the current demographic and health profile of the Local Area (where available), defined as St Gabriels Ward, in comparison to Knowsley (the local borough authority), the North West region and the national average (England). This baseline informs the health priorities for consideration with this HIA.

Demographic Context

- 3.2 There are 9,500 living in the Local Area. Most people are of working age, aged between the ages of 16 and 74.
- 3.3 The Local Area, Knowsley and the North West region have a lower economic activity rate at 59% than England (61%). The unemployment rate is higher in the Local Area than across all spatial levels, as summarised in Table 3.1.

Table 3.1: Economic Activity (Source: 2021 Census)

Health Indicator	Local Area	Knowsley	North West	England
Health outcomes (life expectancy, ill health and cause of death)				
Economic Activity	59%	59%	59%	61%
Unemployment	6.1%	5.9%	5.8%	5.7%

Health Profile

- 3.4 **Table 3.2** and **Table 3.3** provide a health summary to identify local health priorities. Most data is drawn from OHID Public Health Profiles, supported by ONS and 2021 Census data.

Table 3.2: Health Profile Summary

Health Indicator		Local Area	Knowsley	North West	England
Health Outcomes					
Life Expectancy at Birth (in years) (2016/20)	Male	78.6	76.4	79.4 (2018/20)	79.5
	Female	80.7	80.1	83.1 (2018/20)	83.2
Under 75 mortality rate: all causes considered preventable (per 100,000) (2021)		-	285.4	222.2	183.2
Under 75 mortality rate: cardiovascular disease (per 100,000) (2021)		-	110.8	92.8	76.0
Under 75 mortality rate: cancer (per 100,000) (2021)		-	160.6	136.0	121.5

Health Indicator	Local Area	Knowsley	North West	England
Under 75 mortality rate: respiratory disease (per 100,000) (2021)	-	55.5	35.3	26.5
Suicide Rate (per 100,000 population) (2019/21)	-	10.0	11.4	10.4
Risk Factors				
Excess weight in children (Year 6: age 10-11 years) (2019/20-2021/22)	42.6%	42.8%	-	35.8%
Adults (aged 18+) classified as overweight or obese (2021/22)	-	74.6%	66.7%	63.8%
Physically inactive adults (<30 mins of moderate intensity activity per week) (2021/22)	-	25.2%	24.2%	22.3%
Depression: Prevalence in adults aged 18+ (2021/22)	-	19.2%	-	12.7%
Wider Determinants				
Children under 16 in relative low income families (2021/22)	-	24.1%	23.7%	19.9%
Proportion living in fuel poverty (2021)	-	12.9%	14.6%	13.1%
Older people in deprivation (prevalence, age 60+ years) (2019)	-	29.4%	-	14.2%
Homelessness: households in temporary accommodation (per 1,000) (2021/2022)	-	0.7	1.8	4.0
Violent Crime: violence offences per 1,000 population (2021/22)	-	46.7	43.9	34.9
Killed and seriously injured on roads (per 100,000 resident population) (2021)	-	43.9	97.0	95.6
Air pollution: fine particulate matter µg/m3 (2021)	-	8.0	7.1	7.4
Fraction of mortality attributable to particulate air pollution (2014) ⁴	-	5.5%	5.1%	5.6%
Rate of complaints about noise (per 1,000) (2020/21)	-	9.7	6.0	12.0
The percentage of the population exposed to road, rail and air transport noise of 65dB(A) or more during daytime (2016)	-	3.2%	5.5%	5.5%
The percentage of the population exposed to road, rail and air transport noise of 55dB(A) or more during the night-time (2016)	-	9.3%	9.4%	8.5%

Note: Some data was not available at Local Area level.

⁴ PHE (2014) 'Estimating Local Mortality Burdens associated with Particulate Air Pollution' Report.

Table 3.3: Self-Reported Health (Source: 2021 Census)

Health Indicator		Local Area	Knowsley	North West	England
Health outcomes (life expectancy, ill health and cause of death)					
Self-Reported Health	'Very Good' and 'Good'	77%	77%	80%	82%
	'Fair'	14%	14%	13%	13%
	'Bad' and 'Very Bad'	9%	9%	6%	5%
Long Term Health Problem/ Disability – day-to-day activities limited		23%	23%	19%	17%

Health Outcomes

- 3.5 **Table 3.2** and **Table 3.3** demonstrate that residents of Local Area and Knowsley on the whole experience worse levels of health and health outcomes than residents in the North West and England.
- 3.6 Life expectancy is lower in the Local Area and Knowsley than in the region and England. Across all spatial levels, life expectancy is higher for females than males.
- 3.7 Under 75 mortality rates from all causes considered preventable, cancer and cardiovascular disease are higher in Knowsley than in the region and national averages. The under 75 mortality rate from respiratory disease in Knowsley is third highest in England. Respiratory disease risks factors include smoking, air pollution, allergens and occupational risks. Mortality rates provide an indication of premature deaths from conditions where effective and timely health care could potentially have reduced the chances of death.
- 3.8 Table 3.3 shows self-assessed health data from the 2021 Census across all geographical scales, including the Local Area. Most residents across the Local Area reported they were in 'very good' or 'good' health (77%) – this is in line with the reported health of the population in Knowsley, however, lower than the regional and national average.
- 3.9 The 2021 Census also asked residents to self-assess the extent to which day-to-day activities are limited by health and/or disability under the Equality Act (2010). The proportion of disabled residents in the Local Area is in line to rate in Knowsley overall, both higher than the regional and national averages.

Risk Factors

- 3.10 The proportion of children aged 10 to 11 years who are overweight or obese is significantly higher in the Local Area and Knowsley than the other spatial levels. Excess weight can cause significant health problems and negatively impact the quality of life from an early age.
- 3.11 Knowsley has the highest rate of overweight adults in the North West region. The rate of adults undertaking less than 30 minutes of moderate intensity physical activity per week is also higher in Knowsley than across the region and at national level. Physical activity improves wellbeing and quality of life, beyond the overall health benefits.

Mental health

- 3.12 Mental health and physical health are inextricably linked: poor physical health can cause mental health problems and vice versa. Those that suffer from obesity, substance misuse, smoking, cancer and cardiovascular disease are particularly likely to experience mental health problems.
- 3.13 Poor mental health is also strongly linked with poverty and socio-economic disadvantage. Individuals in homelessness and institutional settings (such as care homes and prisons) are more vulnerable to poor mental health.
- 3.14 Depression was recorded in 1 in 5 adults in Knowsley – the 4th highest rate in England. Depression can lead to further physical and mental health issues for those who suffer for a longer period of time. Across all spatial levels, suicide rates are higher in the male population.
- 3.15 Suicide is a significant cause of death in young adults and is an indicator of underlying rates of mental ill-health. The suicide rate in Knowsley is slightly higher than the national average but lower than the regional rate.

Wider Determinants

- 3.16 Knowsley performs comparatively poorly across the wider determinants of health. Almost a fifth of children live in poverty, which is higher than the regional and national rates⁷. The borough ranks as the third highest borough in England for deprivation affecting children.
- 3.17 Within Knowsley, a third of the residents aged over 60 are living in deprivation, which is twice the national rate.
- 3.18 The rate of violent crime in Knowsley was reported as 46.7 per 1,000 people, which is higher than the regional rate of 43.9 per 1,000 people and the national rate of 34.9 per 1,000 people.
- 3.19 The rate of people killed or seriously injured on roads is lower in Knowsley than the regional and national rates. Rates of homelessness are also lower in Knowsley than at regional and national levels.
- 3.20 As set out in the introduction, the existing site currently comprises warehouse uses, however these have remained vacant since September 2022. Therefore, no employment is currently accommodated on-site.

Health Deprivation

- 3.21 The Government's Indices of Multiple Deprivation (IMD) (2019) measures deprivation by combining indicators including a range of social, economic and housing factors, to establish a single deprivation score for each small area (Lower-layer Super Output Area, LSOA⁵) across England. All LSOAs are ranked relative to one another according to their level of deprivation. Knowsley is the second most deprived borough in England⁶.

⁵ LSOAs are statistical geographic areas based on population size. The minimum population for a LSOA is 1,000 residents, or 400 households.

⁶ Knowsley Council (2022) Joint Strategic Needs Assessment (JSNA), Start Well. Available at: <https://knowsleyknowledge.org.uk/2022-jsna/>

3.22 These factors are divided among seven domains of deprivation, outlined as follows:

- Income deprivation;
- Employment deprivation;
- Education, skills, and training deprivation;
- Health deprivation and disability;
- Crime;
- Barriers to housing services; and
- Living environment deprivation.

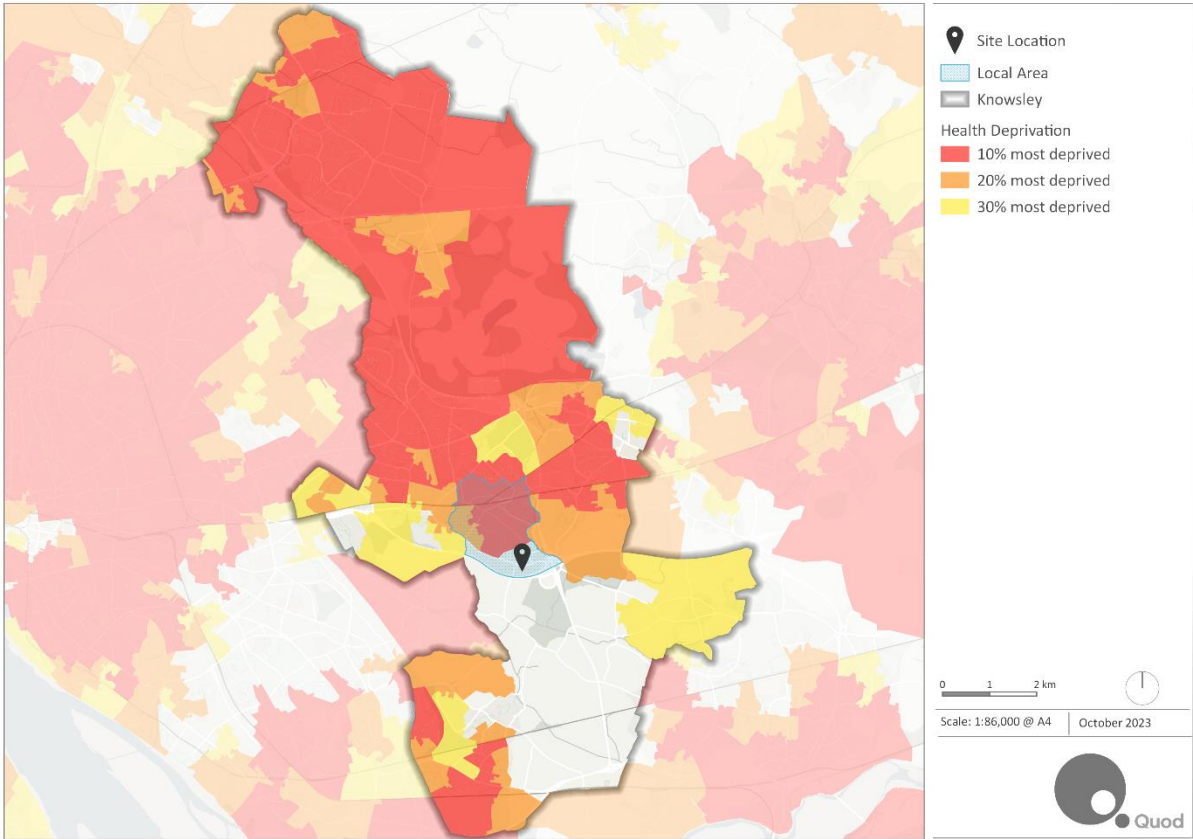
3.23 Health deprivation and disability measures *“the risk of premature death and the impairment of quality of life through poor physical or mental health”*⁷. Measures of health include morbidity, disability and premature mortality.

3.24 Figure 3.1 shows health deprivation in Knowsley. Areas in red are among 10% most health deprived neighbourhoods in England. Areas in orange are among 20% most deprived and areas in yellow are among 30% most deprived.

3.25 A large part of the Local Area has LSOAs that are with top 10% most deprived neighbourhoods in England, as seen in Figure 3.1.

⁷ Ministry of Housing, Communities and Local Government (2019) The English Indices of Deprivation 2019: Statistical Release.

Figure 3.1 – Health Deprivation (Source: IMD, 2019)



4 Identification & Assessment of Health Impacts

Supporting active healthy lifestyles

Access to employment

- 4.1 Access to employment can be a significant contributing factor to increased health. Being in work can make it easier to pursue a healthy lifestyle, with income being one of the most significant influences on health and the prevalence of disease in public health research.
- 4.2 Unemployment is often related to an increased risk of poor physical and mental health, and premature death. There are three core ways in which unemployment affects levels of morbidity and mortality:
 - Financial problems due to unemployment can result in lower living standards, which may in turn reduce social integration and lower self-esteem;
 - Unemployment can trigger distress, anxiety and depression; and
 - Unemployment can affect health behaviours via increased smoking and alcohol consumption, and reduced levels of physical exercise.

Access to open/ green space

- 4.3 Numerous studies point to the direct benefits of green space to both physical and mental health. Green space has been associated with a decrease in health complaints, improved mental health, reduced stress levels and the perception of better general health. The provision of open space also has indirect benefits by encouraging social interaction and providing space for physical activities, improving air quality etc.
- 4.4 Accessible amenity space has been linked with environments that are more walkable, with aesthetics and street connectivity influencing patterns of use. Physical activity, which is more likely to be undertaken if open space or improved linkages are provided, plays a key role in the prevention of specific diseases / health issues that include cardio-vascular disease, depression, and obesity.
- 4.5 Access to open space and nature is closely linked to the health priority of 'healthy lifestyles', due to its multiple functions in providing, space for recreation, tranquillity, relaxation etc. which can impact upon people's ability to adopt healthier habits, including exercise.
- 4.6 Long-standing research suggests that green and other natural spaces offer increased mental and physical health benefits. The World Health Organisation (WHO) encourages green interventions in future urban developments to improve the quality of life in cities⁸.

⁸ World Health Organisation – Regional Office for Europe (2017) Urban green spaces: a brief for action.

Sustainable transport options

- 4.7 Traffic or transport impacts may have positive or negative effects on health. Planning and development may result in effects that improve or reduce access to services, including health services, and to employment through transport impacts. It may provide or remove access to public transport, walking and cycling routes that support active lifestyles.
- 4.8 Increased traffic from large vehicles associated with demolition and construction may also pose indirect health effects through fear and intimidation to pedestrians and cyclists. Fear would impact on health by increasing stress, while intimidation may dissuade individuals from walking or cycling and thus making less healthy lifestyle choices.
- 4.9 Accidents and road safety directly impact health, where traffic volumes could potentially have a detrimental effect on highway safety through increased opportunities for conflict.
- 4.10 Promoting active travel is important to deliver a 'modal shift', with less reliance on cars, and cycling, walking and other forms of active travel can be considered to have the ability to tackle multiple health considerations – including pollution, obesity, congestion and road accidents – all at once.
- 4.11 The **Transport Statement** includes a baseline analysis of the existing site's current accessibility. The nearest bus stop, "Coppice Lane", is approximately 230m south of the Site with access on Cronton Road. The bus stop services seven bus routes, with destinations including Liverpool Centre, Stockbridge Village, Huyton, and Gillmoss. A further bus stop, "Wilson Road", lies approximately 280m from the application site access on Cronton Road.

Health Impact Assessment

- 4.12 As outlined in the **Planning Statement**, the existing site is currently vacant and does not accommodate any jobs.
- 4.13 The Proposed Development will create employment opportunities in the construction and operational phases. The construction of Proposed Development will create a total of 120 full-time equivalent (FTE) jobs during the eight-month construction period estimated. The proposed retail and warehouse uses on-site are estimated to accommodate 389 FTE gross jobs which would benefit the local labour market.
- 4.14 Employment and financial stability are contributing factors to an individual's health. By providing new employment opportunities in an area of high unemployment and economic activity, as the Local Area, as shown in the Health Baseline Section of this assessment, will be highly beneficial for population health.
- 4.15 The Proposed Development will incorporate elements of both hard and soft landscaping. Soft landscaping elements will include grass, shrubs and trees on the approach to the Site along the north-eastern boundary. Where possible, trees will be retained.
- 4.16 The **Transport Statement** notes that the Site is in a sustainable location with accessibility to a wide range of local services and amenities to promote linked trips supported by local public transport services. Employees, visitors and customers have a range of sustainable travel choices to access the Proposed Development.

- 4.17 The **Transport Statement** notes that the Proposed Development will not have a material impact upon the safety or operation of the surrounding local highway network as the net traffic impact identified suggests an immaterial increase in vehicle movements during both the weekday AM and PM peak periods, and during Saturday peak period (as outlined in Section 5 of the Transport Statement).
- 4.18 The Proposed Development will provide parking spaces, including accessible spaces, motorcycle spaces and EV Charging spaces. A total of 195 parking spaces (of which 14 spaces will be accessible bays) will be provided for the warehouse units and 140 (of which nine will be accessible bays) will be provided. A total of 15 motorcycle parking spaces will be provided.
- 4.19 To support active lifestyle, 40 cycle parking spaces will be provided.
- 4.20 A **Transport Plan** is submitted alongside the **Transport Statement**, which includes proposed measures to be undertaken during the operation phase that promote car sharing and a potential staff bus service to manage car parking supply and promote sustainable travel choices irrespective of the number of car parking spaces provided.

Table 4.1: Summary of Health Impacts

	Potential Effect	Mitigation / Enhancement Measures
Access to Employment	Positive	None required
Access to open/ green space	Neutral	None required.
Sustainable transport options	Positive	Adoption of measures in line with the Transport Plan.

Supporting the creating of healthy living environments

Neighbourhood amenity during construction and operation

- 4.21 Air quality is a key influence in the quality of the environment in which a population lives, with implications for long-term health. Dust and emissions from transport and construction processes are the main potential source of pollutants. Poor air quality is associated with negative health outcomes, such as chronic lung disease, heart conditions and asthma, particularly among children.
- 4.22 Planning and development influence land use and, therefore, may influence the quantity and types of emissions produced – either reducing or increasing them. Mitigation measures, including the design of open spaces to act as green lungs for a community and the use of technology to reduce and capture emissions, may be used where appropriate.
- 4.23 The **Air Quality Assessment** identifies traffic movements as the likely most significant local source of pollutants affecting the Site and surrounding area.

- 4.24 Noise and vibration have links to the health of a population, particularly in places where people live or work in close proximity to sources of noise and vibrations. Very high noise levels can have direct impacts on health (hearing loss or tinnitus) but there “should be no risk” of these levels of noise from environmental factors⁹. Lower levels (nuisance or annoyance levels) have indirect effects including through stress-related illness and disturbances in sleep. These nuisance levels do not affect people equally.
- 4.25 Nuisance and annoyance can have higher or lower relative importance assigned by those affected by them. Such importance varies within and across populations; and this importance or variability can be uncertain¹⁰. Some groups are particularly vulnerable to noise effects, including younger and older groups who may be more affected by sleep disturbance or annoyance, those with pre-existing health conditions (both physical and mental), and who spend more time at home during daytime hours when construction and operational activities will occur. Thus, it is challenging to predict with any certainty the degree to which nuisance and annoyance from noise will affect people at an individual level.
- 4.26 The **Noise Assessment** notes that the predominant noise source in the area include aircraft noise and road traffic noise from B1112, A134 and The Avenue.

Healthy working environment

- 4.27 Providing a healthy workplace for employees is mostly the responsibility of the occupier through active commitment and practices which encourage and support health and wellbeing of individuals. However, the location, design and amenity space of a building can contribute to supporting businesses in enhancing workplace health.
- 4.28 A poor working environment can have a negative impact on the health of workers, and consequently their productivity. It is therefore important that buildings are designed to promote the health and wellbeing of everyone.

Health Impact Assessment

Demolition and Construction Phase

- 4.29 The **Air Quality Assessment** identifies nearby existing sensitive receptors. A total of 13 residential receptors have been identified and presented in Table 4.3 in the **Air Quality Assessment**.
- 4.30 The dust risk categories have been determined for each of the four construction activities. The assessment has determined that the potential impact of dust emissions and health effects of PM₁₀ associated with the construction phase of the Proposed Development is ‘medium risk’ at the worst affected receptors (as set out in Section 5 of the **Air Quality Assessment**).

⁹ Noise exposure level beyond 80 dB during 40 years of working a 40 hour work week can give rise to permanent hearing impairment. Given that environmental exposure to noise is much lower than these levels and that noise-related hearing impairments are not reversible, the GDG considered that there should be no risk of hearing impairment due to environmental noise and considered any increased risk of hearing impairment relevant. WHO, 2018, Environmental Noise Guidelines for the European Region p. 23

¹⁰ WHO, 2018, Environmental Noise Guidelines for the European Region p. 24

- 4.31 The **Air Quality Assessment** proposes site-specific mitigation measures associated with the determined risk level (in line with Institute of Air Quality Management Guidance Document 'Guidance on the Assessment of Dust from Demolition and Construction'). This includes (as detailed in Table 7.1 of the **Air Quality Assessment**):
- Good communication of construction work undertaken on-site, such as implementing a stakeholder communications plan that includes community engagement before work commences on Site.
 - Dust management measures, such as developing and implementing a **Dust Management Plan (DMP)**, which may include measures to control other emissions.
 - Demolition measures, such as ensuring effective water suppression is used during demolition operations.
 - Construction and trackout measures to ensure to control dust exposure beyond site boundary.
- 4.32 With the implementation of these measures, the **Air Quality Assessment** concludes that the air quality impact during the construction phase of the Proposed Development is not considered to be significant (as detailed in Section 7).
- 4.33 The **Noise Statement** identifies nearby existing sensitive receptors. In total, 16 residential receptors have been identified and analysed as presented in Table 3.5 in the **Noise Assessment**.
- 4.34 The noise impacts associated with construction activity has been assessed in line with BS 5228 criteria. The assessment establishes the maximum external noise levels at neighbouring properties during demolition and construction activities and whether typical plant and activities will be within acceptable levels as set out by best practise guidance.
- 4.35 The assessment has found that the noise levels at the façades of the existing noise sensitive properties would be within the recommended criteria. In practice, demolition and construction noise levels and resulting impacts are likely to vary during demolition and construction phases depending upon the location of worksites, activities and plant in operation and proximity to sensitive receptors. Given the nature of the area and the scale of works, it is considered that significant noise effects are unlikely.
- 4.36 Mitigation measures will assist in further identifying and minimising noise impacts. Where possible, noise will be controlled at the source, accompanied by best practice measures BS 5228, such as but not limited to:
- Avoid unnecessary noise from engines and ensure equipment is switched off when not required;
 - Keep internal haul routes well maintained and avoid steep gradients;
 - Use rubber linings in, for example, chutes and dumpers to reduce impact noise;
 - Minimise drop height of materials; and
 - Startup plant and vehicles sequentially rather than all together.

Operational Phase

- 4.37 The air quality impacts associated with the operation of the Proposed Development have been assessed in the **Air Quality Assessment**. The assessment identifies nearby sensitive receptors - 13 residential receptors and two ecological receptors as set out in Section 4.4 and 4.5 of the **Air Quality Assessment**.
- 4.38 The identified air quality effects arising from changes in traffic flow as a result of the operational Proposed Development, with respect to NO₂ and PM_{2.5} exposure for existing receptors is determined to be 'negligible' at all modelled 13 residential receptors and the two ecological receptors (as outlined in Sections 6.5.3 – 6.5.4 of the **Air Quality Assessment**).

Operational noise arising from building services

- 4.39 The noise impacts during the operation of the Proposed Development have been assessed as part of the **Noise Assessment**. No adverse effect is predicted to result on the sensitive receptors as a result of the building services plant.

Operational noise arising from traffic and operational activities

- 4.40 The proposed uses on-site are warehouses and the site falls within an industrial estate – therefore heavy goods vehicle (HGV) transport movements will occur to and from the Site. Most of these movements would take place in the daytime.
- 4.41 The **Noise Assessment** has carried out two assessments. The first assessment (Section 5.3) – Noise Intrusion Assessment - considers the internal noise levels at sensitive receptors, from all noise sources. The second assessment (Section 5.4) is a “change in noise level assessment”. This second assessment is considered appropriate to demonstrate the extent of change in noise level as a result of the operation of the Proposed Development compared to the existing baseline given the Site location within an industrial estate.

Noise Intrusion Assessment (Section 5.3)

- 4.42 The assessment has been carried out for windows open and with windows closed. This uses noise survey data to analyse the noise effects. Given the location of the Site within an industrial estate and the proposed uses associated with these activities the baseline noise climate locally is high.
- 4.43 The assessment of the operational Proposed Development concludes adverse noise effects are identified at two residential receptors - Cronton Road (R15) and 1 Sevenoak Grove (R16). This is mainly due to HGV unloading from the proposed warehouses. The adverse effect at these two receptors is above the recommended thresholds of 35dB(A)¹¹ with open windows for internal daytime noise.

¹¹ BS8233/WHO daytime LAeq,1hour internal criterion

- 4.44 Adverse noise effects for internal night-time noise are identified at five residential receptors where noise levels exceed recommended thresholds of 30dB(A)¹² with open windows for internal night-time noise.
- 4.45 This assessment (Section 5.3) also considers the maximum noise event at all receptors for night-time. The worst affected receptor is the closest – 62 Bridgeway (R9) – where the maximum noise event exceeds thresholds of 45 dB(A)¹³ with open windows.
- 4.46 Please see Tables 5.4 - 5.6 of the **Noise Assessment** for details.

Change in Noise Level Assessment (Section 5.4)

- 4.47 While the Noise Intrusion approach highlighted potential exceedances the **Noise Assessment** concluded that a change in noise level assessment was more appropriate given the high levels of existing background noise.
- 4.48 The largest contribution of noise from the Proposed Development during daytime on the existing noise levels¹⁴ is 0.2 dB at three sensitive receptors - 62 Bridgeway (R9), 2 Cronton Road (R15) and 1 Sevenoak Grove (R16). Therefore, the daytime operations are predicted to result in a No Observed Adverse Effect Level (NOAEL).
- 4.49 During night-time the largest contribution of noise from the Proposed Development on the existing night-time noise levels¹⁵ is 2.2 dB at 2 Cronton Road (R15). The night-time operations are predicted to result in a No Observed Adverse Effect Level (NOAEL) to Lowest Observed Adverse Effect Level (LOAEL).
- 4.50 Therefore, the change in noise level assessment concludes that the changes in noise level during the operation of the Proposed Development will not be significant. Given the existing noise climate onsite and the character of the noise associated with the Proposed Development, it has been concluded that mitigation is not required.

Healthy Working Environment

- 4.51 The new units will provide self-contained service yards, warehouse staff amenity, staff parking, incoming main services and fire and security warning installation networks. The Proposed Development will deliver new facilities which are in line with Building Regulations Approved Document M, incorporating wheelchair accessibility standards.
- 4.52 Pedestrian access from the Site entrance to the building is controlled by well-defined walkways directing people to formal dedicated reception and staff entrance points, minimising the risk of any potential conflict between pedestrians and cars or HGVs and ensuring safety of employees.

¹² BS8233/WHO night-time LAeq,15min internal criterion

¹³ BS8233/WHO night-time L_{Amax} criteria

¹⁴ LAeq levels

¹⁵ LAeq levels

Table 4.2: Summary of Health Impacts

	Potential Effect	Mitigation / Enhancement Measures
Neighbourhood amenity during construction	Neutral	Noise and air quality mitigation measures proposed during the construction phase in line with best practice means.
Neighbourhood amenity during operation	Neutral	None required
Healthy working environment	Positive	None required.

5 Conclusions

- 5.1 The Proposed Development's potential health impact has been considered in line with the Scoping Opinion submitted to Knowsley Borough Council. The assessment has found that the Proposed Development is likely to have an overall positive impact on health.
- 5.2 Positive health impacts relate to:
- Creation of employment opportunities within the construction industry and the wider labour market.
 - Providing employment opportunities in an accessible area and supporting sustainable transport options to the Site.
 - Providing an accessible working environment, designed in line with latest national building standards.
- 5.3 Several recommendations/ mitigation measures have been identified to minimise potential negative health impacts identified and maximise positive health outcomes for occupants of the Site and surrounding area. These are summarised below:
- Adoption of measures in line with the Transport Plan.
 - Implementation of noise and air quality mitigation measures proposed during the construction phase in line with best practice means.