

**Climate Change Environmental Impact Assessment
Environmental Statement Volume 1 Appendix 16.2 - Climate Change
Resilience Assessment**

Land North of Birch Business Park



Table of Contents

1.0 INTRODUCTION	ERROR! BOOKMARK NOT DEFINED.
2.0 METHODOLOGY	ERROR! BOOKMARK NOT DEFINED.
2.1 Introduction	2
2.2 Step 1 - Defining Future Baseline	3
Existing Baseline	3
Future Baseline	3
2.3 Step 2 - Identify Potential Climate Hazards and Affected Receptors within the Scheme	4
Potential Climate Hazards	4
Receptor Identification	5
2.4 Step 3 - Assess the Magnitude of the Climate Risk Impacts on the Identified Receptors	6
2.5 Step 4 - Determine the Significance of Impacts	8
2.6 Step 5 - Additional Mitigation Measures	9
3.0 CLIMATE CHANGE RESILIENCE ASSESSMENT	ERROR! BOOKMARK NOT DEFINED.
3.1 Introduction	10
3.2 Step 1 - Defining Future Baseline	10
Existing Baseline	10
Future Baseline	11
3.3 Step 2 - Identify Potential Climate Risks and Affected Receptors within the Scheme	13
Potential Climate Hazards	13
Receptor Identification	14
3.4 Step 3 & 4 - Assess the Magnitude of the Climate Risk Impacts on the Identified Receptors / Determine Significance of Impacts	16
3.5 Step 5 - Additional Mitigation Measures	0
4.0 CONCLUSION	1
5.0 ABBREVIATIONS	2

1.0 INTRODUCTION

- 1.1.1 This Technical Appendix provides the detailed methodology and Climate Change Risk Assessment (CCRA) in support of the Proposed Development. This should be read in conjunction with Environmental Statement Volume 1: Chapter 16 - Climate Change and the other Technical Appendices.

2.0 METHODOLOGY

2.1 Introduction

2.1.1 With respect to effects relating to climate change, an assessment was not only required of the potential effects of the Proposed Development on the global atmosphere, but also an assessment of a development's vulnerability to potential effects from climate change. This ensured that the risk of climate change effects were identified, and mitigation measures adopted to ensure the Proposed Development can adapt to future climate variations.

2.1.2 The resilience of the Proposed Development to climate change was assessed based on the susceptibility and vulnerability of receptors to climate risks, the likelihood of a climate risk occurring and consequence to the receptor.

2.1.3 A CCRA has been undertaken following the methodology provided within Appendix 1 of the Institute of Sustainability and Environmental Professionals (ISEP) Guidance¹. This comprised the following five stages:

- Define the future baseline;
- Identify potential climate hazards and affected receptors within the scheme;
- Assess the severity of the climate risk on the identified receptors;
- Determine the significance of impacts; and,
- Where necessary, provide additional mitigation measures to reduce the impacts of the identified risks.

2.1.1 It should be noted that the anticipated construction programme is not expected to be sufficient to experience any notable changes in the climate. Therefore, the construction phase is not considered vulnerable to climate change and has not been considered further.

2.1.2 A detailed methodology is provided in the following Sections.

¹ Environmental Impact Assessment Guidance to: Climate Change Resilience and Adaptation, ISEP, 2020.

2.2 Step 1 - Defining Future Baseline

Existing Baseline

2.2.1 The local climate context was based on historic climate data obtained from the Met Office² for the closest historical meteorological station to the Site, Bradford Met Office Station, for the period 1991 to 2020. This considered the following parameters:

- Annual average daily temperature (°C);
- Annual average maximum daily temperature (°C);
- Annual average minimum daily temperature (°C);
- Warmest month on average (°C);
- Coldest month on average (°C);
- Mean annual rainfall (mm);
- Wettest month on average (mm);
- Driest month on average (mm); and,
- Days of air frost.

2.2.2 Consideration was given to the change in the above parameters over the period 1991 to 2020.

Future Baseline

2.2.3 The UK Met Office Hadley Centre has published climate change projections for the UK, referred to as the UK Climate Projections (2018) (UKCP18)³. These are based on global climate simulation models produced to explore regional responses to climate change. UKCP18 utilises Representative Concentration Pathways (RCPs) that project how future climatic conditions in the UK are likely to change at a regional level, taking account of naturally occurring climate variations.

2.2.4 The RCPs show how the climate could change up to the year 2100, compared to a 1981-2000 baseline period for observed climatological trends in return levels. There are four different RCPs which correspond to varying target levels of radiative forcing projected in

² <https://www.metoffice.gov.uk/research/climate/maps-and-data/historic-station-data>

³ <https://ukclimateprojections-ui.metoffice.gov.uk/ui/home>

2100. Furthermore, each RCP corresponds to a different projected temperature increase by 2100 as follows:

- RCP2.6 - 0.9 to 2.3°C;
- RCP4.5 - 1.7 to 3.2°C;
- RCP6.0 - 2.0 to 3.7°C; and,
- RCP8.5 - 3.2 to 5.4°C.

2.2.5 A summary of a range of projected changes to climate variables are provided which can be used to generate a view of future climate conditions and assess potential impacts.

2.2.6 The assessment of potential likely effects of climate change on the Proposed Development applied the conservative approach recommended as best practice in the ISEP guidance⁴. This used the central estimate (50th percentile) for the highest concentration pathway scenario, RCP8.5, to establish the future baseline. This represents likely worst-case changes to climatic conditions during the time periods that correspond to the lifetime of the Proposed Development.

2.3 Step 2 - Identify Potential Climate Hazards and Affected Receptors within the Scheme

Potential Climate Hazards

2.3.1 Climate hazards specific to the Proposed Development were identified based on the UKCP18 future climate projections detailed in Step 1. Consideration was given to key climate variables such as temperature, precipitation rates, gusts, storms and sea level rise and their associated impacts such as heatwaves, flooding and extreme weather events.

2.3.2 Measures outside the control of the Applicant, such as damage to infrastructure outside the Site boundary leading to an impact on business practices, or future rising costs of insurance affecting business viability have not been considered as part of this assessment

⁴ Environmental Impact Assessment Guidance to: Climate Change Resilience and Adaptation, ISEP, 2020.

Receptor Identification

2.3.3 The ISEP guidance⁵ describes the sensitivity of a receptor/ the receiving environment as

"the degree of response of a receiver to a change and a function of its capacity to accommodate and recover from a change if it is affected."

2.3.4 Therefore, in line with the ISEP guidance⁶, the following factors were considered to ascribe the sensitivity of receptors in relation to potential climate change effects:

- The value and importance of the receptor;
- The susceptibility of the receptor to the climate effect; and,
- The vulnerability of the receptor to change.

2.3.5 The value and importance of the receptor was assessed qualitatively based on professional judgement. The susceptibility of the receptor was determined utilising the scale provided in Table A16.2.1.

Table A16.2.1 Climate Vulnerability: Receptor Susceptibility

Susceptibility	Descriptor
High	Receptor has no ability to withstand/not be substantially altered by the projected changes to the existing/prevaling climatic factors
Medium	Receptor has some limited ability to withstand or not be altered by the projected changes to the existing/prevaling climatic conditions
Low	Receptor has the ability to withstand or not be altered much by the projected changes to the existing/prevaling climatic factors

2.3.6 The vulnerability of the receptor was determined utilising the scale provided in Table A16.2.2.

⁵ Environmental Impact Assessment Guidance to: Climate Change Resilience and Adaptation, ISEP, 2020.

⁶ Environmental Impact Assessment Guidance to: Climate Change Resilience and Adaptation, ISEP, 2020.

Table A16.2.2 Climate Vulnerability: Receptor Vulnerability

Vulnerability	Descriptor
High	Receptor is directly dependent on existing/prevaling climatic factors and reliant on these specific existing climate conditions continuing in future or only able to tolerate a very limited variation in climate conditions
Medium	Receptor is dependent on some climatic factors but able to tolerate a range of conditions
Low	Climatic factors have little influence on the receptors

2.4 **Step 3 - Assess the Magnitude of the Climate Risk Impacts on the Identified Receptors**

2.4.1 The ISEP guidance⁷ recommends using a combination of probability and consequence to reach a reasoned conclusion on the magnitude of the effect of climate change on the Proposed Development. The ISEP guidance states that the magnitude of impact is based on a combination of:

- Probability, which takes into account the chance of the effect occurring over the lifespan of the Proposed Development if the risk is not mitigated; and,
- Consequence, which reflects the geographical extent of the effect, or the number of receptors affected (e.g., scale), the complexity of the effect, the sensitivity of receptors, and the duration, frequency, and reversibility of the effect.

2.4.2 Definitions of likelihood and magnitude will vary between schemes and are tailored to the specific project. For the assessment of climate risk, the total project lifetime of 60-years has been considered.

2.4.3 A likelihood category was assigned from Table A16.2.3 based on the probability of the regional climate effect identified using the future climate baseline.

Table A16.2.3 Climate Vulnerability: Likelihood of Effect

Likelihood Category	Descriptor (Probability and Frequency of Occurrence)
Very High	The event occurs multiple times during the lifetime of the project

⁷ Environmental Impact Assessment Guidance to: Climate Change Resilience and Adaptation, ISEP, 2020.

Likelihood Category	Descriptor (Probability and Frequency of Occurrence)
High	The event occurs several times during the lifetime of the project
Medium	The event occurs limited times during the lifetime of the project
Low	The event occurs during the lifetime of the project
Very Low	The event may occur once during the lifetime of the project

2.4.4 The likely severity of the impact was determined through the likely consequence of a climate effect upon a receptor. The consequence level considered the following:

- The acceptability of any disruption to operation of the scheme;
- Value of assets if damaged or if they need to be replaced;
- Impact upon neighbours;
- Embedded mitigation measures within the scheme; and,
- The vulnerability of the project element or receptor.

2.4.5 Consequence of effect descriptors are provided in Table A16.2.4.

Table A16.2.4 Climate Vulnerability: Consequence of Effect

Consequence of Effect	Descriptor (Probability and Frequency of Occurrence)
Very Large Adverse	Permanent damage and complete loss of service. Disruption lasting more than one week. Severe health effects or fatalities. Extreme financial loss. Very significant loss to the environment requiring remediation and restoration
Large Adverse	Extensive damage and severe loss of service. Disruption lasting more than one week. Permanent physical injuries and/or fatalities. Major financial loss. Significant effect on the environment, requiring remediation
Moderate Adverse	Limited damage and loss of service with damage recoverable by maintenance or minor repair. Disruption lasting more than one day but less than one week. Moderate financial losses. Adverse effects on health or the environment
Minor Adverse	Localised disruption or loss of service. No permanent damage, minor restoration work required: disruption lasting less than one day. Small financial losses and/or slight adverse health or environmental effects
Negligible	No damage to the Development, minimal adverse effects on health, safety and the environment or financial loss. Little change to service and disruption lasting less than one day

2.4.6 The greater the probability of an effect, the more likely it is to occur on multiple occasions throughout the lifetime of the Proposed Development. As such, the magnitude of the effect will be greater, unless the projected changes are considered during the design of the scheme.

2.4.7 The magnitude assigned to the effect also considered control mechanisms that may already be in place (e.g. due to legislation and commonly occurring standards) which would reduce the probability or the consequence of the impact and therefore the overall magnitude of the effect.

2.5 **Step 4 - Determine the Significance of Impacts**

2.5.1 The likelihood of a risk occurring was combined with the consequence of effect to determine the significance of impact in line with the significance matrix within the ISEP guidance⁸. This is shown in Table A16.2.5.

Table A16.2.5 Climate Vulnerability: Significance Matrix

Likelihood of Climate Risk Occurring	Consequence of Climate Risk Occurring				
	Negligible	Minor Adverse	Moderate Adverse	Large Adverse	Very Large Adverse
Very High	Not Significant	Significant	Significant	Significant	Significant
High	Not Significant	Significant	Significant	Significant	Significant
Medium	Not Significant	Not Significant	Significant	Significant	Significant
Low	Not Significant	Not Significant	Not Significant	Significant	Significant
Very Low	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant

⁸ Environmental Impact Assessment Guidance to: Climate Change Resilience and Adaptation, ISEP, 2020.

2.6 Step 5 - Additional Mitigation Measures

2.6.1 Where a significant impact is predicted, further adaptation and mitigation measures should be identified. The ISEP guidance⁹ sets out the following key considerations when determining additional measures:

- Favouring flexible mitigation options over options which are locked and cannot be modified in future (adaptive management);
- Allowing for safety margins in developing the project design, or in mitigation designs to ensure resilience of the project or proposed mitigation to climate change;
- Delaying elements of the project with high risk/ uncertainty until a later date when the risk associated with uncertainty is likely to be less;
- Identifying who (which party) will be responsible for delivering the mitigation measure (e.g. designer, contractor, developer);
- When defining the EIA mitigation consideration needs to be given to the mitigation hierarchy. The following principles identify how this may apply to climate adaptation-related risks:
 - What measures are available to avoid, control or manage identified risks? (avoid, prevent or minimise);
 - Does the mitigation strengthen the project's capacity to be resilient to climate change itself? (enhance);
 - Are there risk reduction measures available? (avoid or prevent);
 - Will the mitigation improve the project's functionality under future climate conditions? (enhance);
 - Can the mitigation exploit opportunities offered by the natural environment? (minimise or enhance); or
 - Can the mitigation provide opportunities for environmental improvements that depend on the climate changing? (enhance or compensate).

2.6.2 The above steps were considered when identifying potential mitigation for inclusion in the Proposed Development.

⁹ Environmental Impact Assessment Guidance to: Climate Change Resilience and Adaptation, ISEP, 2020.

3.0 **CLIMATE CHANGE RESILIENCE ASSESSMENT**

3.1 **Introduction**

3.1.1 An assessment of the vulnerability of the Proposed Development to future climate effects has been undertaken. This is presented in the following Sections.

3.2 **Step 1 - Defining Future Baseline**

Existing Baseline

3.2.1 Observed climate data has been obtained for the Bradford Met Office Station¹⁰ for the period 1991 to 2020. This is summarised in Table 16.2.6.

Table A16.2.6 Observed Climate Data

Climate Variable	Period	Value	Unit
Annual average daily temperature	-	9.7	°C
Annual maximum daily temperature	-	13.1	°C
Annual minimum daily temperature	-	6.3	°C
Warmest month	July	16.3	°C
Coldest month	January	4.3	°C
Mean annual rainfall	-	74.1	mm
Wettest month	December	99.0	mm
Driest month	May	52.0	mm
Annual average frost days	-	3.2	days

¹⁰ <https://www.metoffice.gov.uk/pub/data/weather/uk/climate/stationdata/bradforddata.txt>.

- 3.2.2 The observed changes in climate from 1991 to 2020 is provided in Table A16.2.7. A comparison has been made between 5-year averages of the periods 1991 to 1995 and 2016 to 2020 to account for natural annual variances within the dataset.

Table A16.2.7 Observed Changes in Climate Data

Climate Variable	Period		Net Change	Unit
	1991 - 1995	2016 - 2020		
Annual average daily temperature	9.2	10.0	+0.8	°C
Annual maximum daily temperature	12.6	13.5	+0.9	°C
Annual minimum daily temperature	5.8	6.5	+0.7	°C
Mean annual rainfall	70.1	73.4	+3.3	mm
Annual average frost days	3.8	2.7	-1.1	days

- 3.2.3 The observed changes in climate data presented in Table A16.2.7 show that annual average, maximum and minimum temperatures and mean annual rainfall have all risen over the period between 1991 and 2020, with a decrease in the number of frost days.

Future Baseline

- 3.2.4 Table A16.2.8 provides a summary of a range of projected changes to climate variables obtained from the Met Office UK18CP¹¹ within the 25km grid square (National Grid Reference: 387500, 412500) that encompasses the Site. This has been used to generate a view of future climate, using RCP8.5 as a conservative approach and the median likelihood (50th percentile of probability) to determine a future climate baseline.
- 3.2.5 The future baseline predictions have been generated for the period referred to as the 2030s (2020 to 2049) and 2080s (2070 - 2099), encompassing the assumed lifetime of the Proposed Development of 60-years.

¹¹ <https://ukclimateprojections-ui.metoffice.gov.uk/ui/home>.

Table A16.2.8 Future Predicted Changes in Climate Data

Season	Parameter	Predicted Change 2020 - 2049			Predicted Change 2070 - 2099		
		10 th	50 th	90 th	10 th	50 th	90 th
Annual	Average Temperature (°C)	0.40	0.95	1.51	1.90	3.40	4.95
	Maximum Temperature (°C)	0.42	1.01	1.61	1.90	3.56	5.24
	Minimum Temperature (°C)	0.35	0.90	1.48	1.75	3.30	5.00
	Precipitation (%)	-5.16	0.37	5.64	-7.38	0.68	8.64
Summer	Average Temperature (°C)	0.30	1.12	1.92	2.06	4.34	6.68
	Maximum Temperature (°C)	0.15	1.20	2.22	2.06	4.81	7.68
	Minimum Temperature (°C)	0.35	0.99	1.65	1.90	3.91	6.06
	Precipitation (%)	-21.21	-5.32	9.96	-53.32	-30.80	-5.03
Winter	Average Temperature (°C)	0.08	0.84	1.63	1.05	2.86	4.73
	Maximum Temperature (°C)	0.15	0.87	1.66	1.08	2.84	4.69
	Minimum Temperature (°C)	0.07	0.86	1.71	1.07	2.98	5.12
	Precipitation (%)	-6.77	1.69	11.03	-1.55	13.35	31.84

3.2.6 As shown in Table A16.2.8, the projected general trend is a move towards warmer, wetter winters and hotter, drier summers within the 2020s (2010 - 2039). By the 2080s (2070 - 2099), those trends are exacerbated. As such, it is anticipated that the Site will experience greater variations in climate, and more frequent climate hazard events such as heatwaves, droughts, storms and heavy rainfall in the future. However, it is noted that natural interannual variations throughout the climate system mean that some cold winters, some dry winters, some cool summers and some wet summers may still occur, but these would be outside of the overall trend.

Snow

3.2.7 According to UKCP18 projections¹², for the period 2070-2099, under a high emissions scenario (RCP8.5), the regional (12km) and local (2.2km) projections show a decrease in

¹² UKCP18 Factsheet: Snow v2.0, Met Office, 2025.

both falling and lying snow across the UK relative to the 1981-2000 baseline. As such, snow was not considered to be a climate hazard in the context of the CCRA.

Wind

3.2.8 There are no compelling trends in storminess, as determined by maximum gust speeds, from the UK wind network over the last four decades. UKCP18 projections over the UK¹³ show an increase in near surface wind speeds for the second half of the 21st century for the winter season when more significant effects of wind are experienced. This is accompanied by an increase in frequency of winter storms over the UK. However, the increase in wind speeds is modest compared to inter-annual variability.

3.3 Step 2 - Identify Potential Climate Risks and Affected Receptors within the Scheme

Potential Climate Hazards

3.3.1 Climate hazards relevant to the Proposed Development have been identified based on the UKCP18 future climate projections detailed in Section 3.2. These are presented within Table A16.2.9.

Table A16.2.9 Identified Climate Risks

Risk	Likely Effects Relevant to the Scheme
Increased annual and seasonal temperatures	• More frequent heatwaves • More frequent droughts lasting longer in duration • Overheating, amplified by the urban heat island effect • Impact on public health both physical and mental • Increased in range of temperatures experienced annually placing additional temperature stress on infrastructure
Flooding	• Increased risk of flooding as a result of increased winter precipitation
Heavy rainfall events	• More frequent intense rainfall events even in the summer period • Increased risk of surface water flooding • Potential to lead to drainage failure and overflow

¹³ UKCP18 Factsheet: Wind, Met Office, 2025.

Risk	Likely Effects Relevant to the Scheme
Drought and water scarcity	• Can lead to soil moisture deficit and destabilisation • Water supply stress leading to water shortage to key services • Restriction on water usage
Storms and wind hazards	• Wind damage to structures and facades • Disruption to energy supply • Risk of flying debris leading to injury

Receptor Identification

3.3.2 The following potential receptors within the Proposed Development have been identified

- Buildings and infrastructure;
- Future occupiers; and,
- Landscaping and biodiversity.

3.3.3 An assessment of each receptor to the individual climate hazard has been determined by combining the receptor susceptibility, as detailed in Table A16.2.1, with the receptor vulnerability, as detailed in Table A16.2.2, and applied professional judgement. The receptors and associated climate risks that have been taken forward for further assessment within the CCRA are summarised in Table A16.2.10.

Table A16.2.10 Identified Climate Risks

Receptor	Climate Hazard and Potential Effects	Susceptibility	Vulnerability	Justification
Buildings and infrastructure	Increased summer temperatures leading to heat stress of buildings and infrastructure	Low	Medium	Modern building standards ensure that buildings are built to ensure climatic factors have minimal impact on structure. However, increased extremes are likely to lead to higher levels of required maintenance and repair works
	Extreme summer temperatures overloading cooling systems	Low	Medium	
	Increased summer temperatures leading to fire and damage to buildings and infrastructure	Medium	Medium	Infrastructure such as roads, hardstanding, drains and cables are more susceptible and

Receptor	Climate Hazard and Potential Effects	Susceptibility	Vulnerability	Justification
	Wetter winters/ extreme precipitation levels leading to flooding causing damage to buildings and infrastructure	Low	Medium	vulnerable to the effects of increased frequent and intense extremes of weather. However, they would be designed in line with the relevant Building Regulations to withstand climate hazards
	Extreme wind and storm events causing damage to buildings and infrastructure	Medium	Medium	
	Prolonged drought or precipitation leading to destabilisation of soils, subsidence or damage to road infrastructure	Low	Medium	
Future occupiers	Increased summer temperatures leading to overheating	Medium	Medium	Future occupiers will be moderately vulnerable and susceptible to overheating or extreme weather events. However, they have the ability to change their surroundings to avoid climate hazards where possible
	Extreme wind and storm events leading to flying debris or other risks to health	Medium	Medium	
Landscaping and biodiversity	Increased winter rainfall/ extreme precipitation levels leading to flooding causing damage to landscaping	High	High	Vegetation, planting, and biodiversity is more reliant on existing climatic factors, with short term extreme changes or long term climatic changes having the ability to lead to plant and vegetation failure and a loss of biodiversity
	High wind, storms or extreme precipitation events leading to soil erosion, damage to trees and planting and loss of biodiversity	High	High	

3.4 Step 3 & 4 - Assess the Magnitude of the Climate Risk Impacts on the Identified Receptors **/ Determine Significance of Impacts**

3.4.1 A number of potential effects were identified in Table A16.2.10. These were identified by considering the vulnerability and susceptibility of each receptor to the potential climate hazards outlined in A16.2.9.

3.4.2 Professional judgement was utilised to assess the consequence and likelihood of effect arising from the identified climate hazards. These were then considered in accordance with the significance matrix provided in Table A16.2.5 to determine the significance of effect.

3.4.3 The CCRA has been informed by the following documents:

- The Field, Birch Business Park, Rochdale - Energy Strategy for Planning, Crookes Walker Consulting, 6th August 2025¹⁴; and,
- Birch Business Park Flood Risk Assessment & Drainage Strategy Report, Ridge and Partners LLP, 11th August 2025¹⁵.

3.4.4 The CCRA for the Proposed Development is provided in Table A16.2.11.

¹⁴ The Field, Birch Business Park, Rochdale - Energy Strategy for Planning, Crookes Walker Consulting, 2025.

¹⁵ Birch Business Park Flood Risk Assessment & Drainage Strategy, Ridge, 2025.

Table A16.2.11 Climate Change Resilience Risk Assessment

Receptor	Climate Hazard and Potential Effects	Embedded Design Features	Consequence of Effect	Likelihood of Effect	Effect Significance
Buildings and infrastructure	Increased summer temperatures leading to heat stress of buildings and infrastructure leading to potential disruption of operations and potentially significant costs Extreme heat can may lead to expansion or distortion of building materials and infrastructure	The Proposed Development will be constructed in line with the latest building standards. This will include consideration of thermal expansion of joints and thereby enable materials to accommodate extreme heat without failure, reducing the risk of disruption and associated costs	Minor Adverse	Medium	Not Significant
	Extreme summer temperatures overloading cooling systems during heatwaves negatively impacting on the thermal comfort of buildings	The Energy Strategy indicated that the following measures will be implemented: • Thermal insulation is to be provided in accordance with BS 5422: 2001 • Good solar control will be provided by the selection of glazing to reduce the risk of overheating This will aid in maintaining internal thermal comfort, reduce the risk of overheating during increased heatwave events and reduce demand on cooling systems	Minor Adverse	Medium	Not Significant

Receptor	Climate Hazard and Potential Effects	Embedded Design Features	Consequence of Effect	Likelihood of Effect	Effect Significance
	Increased summer temperatures leading to fire and damage to buildings and infrastructure Very low risk of occurrence. However, fires represent the most serious climate hazard with significant building and infrastructure damage and high repair costs	The Proposed Development will be constructed in line with the latest Fire Regulations, safety measures and guidance on fire prevention	Large Adverse	Very Low	Not Significant
	Wetter winters/ extreme precipitation levels leading to flooding causing damage to buildings and infrastructure	The Flood Risk Assessment and Drainage Strategy Report indicated the Site is located in Flood Zone 1 with a low risk of surface water and fluvial flooding. The surface water drainage strategy comprises attenuation in the form of below ground storage tank and oversized pipe. This will restrict runoff from the Proposed Development. As such, surface water flooding is not anticipated to be a significant climate hazard	Negligible	Very Low	Not Significant
	Extreme wind and storm events causing damage to buildings and infrastructure	Adherence to Approved Document A ¹⁶ of the Building Regulations, which mandates structural resistance to wind loading through adequate connections and stability measures, will mitigate the risk of damage from extreme wind events	Minor Adverse	Medium	Not Significant

¹⁶ The Building Regulations 2010: Approved Document A, HM Government, 2013.

Receptor	Climate Hazard and Potential Effects	Embedded Design Features	Consequence of Effect	Likelihood of Effect	Effect Significance
	Prolonged drought or precipitation leading to destabilisation of soils, subsidence or damage to road infrastructure. Likely to require minor repairs causing limited disruption	N/A	Minor Adverse	Medium	Not Significant
Future occupiers	Increased summer temperatures leading to overheating Increased heatwaves are anticipated across the lifetime of the Proposed Development. This has the potential to lead to thermal discomfort and reduced productivity if not adequately designed	The Energy Strategy indicated that the following measures will be implemented: - Thermal insulation is to be provided in accordance with BS 5422: 2001. - Good solar control will be provided by the selection of glazing to reduce the risk of overheating This will aid in maintaining internal thermal comfort and reduce the risk of overheating during increased heatwave events	Minor Adverse	High	Not Significant
	Extreme wind and storm events leading to flying debris or other risks to health	Individual business will be required to implement the relevant health and safety control measures to ensure risks to future occupiers are minimal Adherence to Approved Document A ¹⁷ will ensure that structural and external elements are adequately designed and fixed to withstand wind loads, reducing the potential for debris generation and associated risks to health and safety during storm events	Minor Adverse	High	Not Significant

¹⁷ The Building Regulations 2010: Approved Document A, HM Government, 2013.

Receptor	Climate Hazard and Potential Effects	Embedded Design Features	Consequence of Effect	Likelihood of Effect	Effect Significance
Landscaping and biodiversity	Increased winter rainfall/ extreme precipitation levels leading to flooding causing damage to landscaping	The Flood Risk Assessment and Drainage Strategy Report indicated the Site is located in Flood Zone 1 with a low risk of surface water and fluvial flooding. The surface water drainage strategy comprises attenuation in the form of below ground storage tank and oversized pipe. This will restrict runoff from the Proposed Development. As such, surface water flooding is not anticipated to be a significant climate hazard	Negligible	High	Not Significant
	High wind, storms or extreme precipitation events leading to soil erosion, damage to trees and planting and loss of biodiversity	The Flood Risk Assessment and Drainage Strategy Report indicated the Site is located in Flood Zone 1 with a low risk of surface water and fluvial flooding. The surface water drainage strategy comprises attenuation in the form of below ground storage tank and oversized pipe	Moderate Adverse	Medium	Significant
	Prolonged drought leading to loss of Site planting, landscaping and biodiversity	N/A	Moderate Adverse	Medium	Significant

- 3.4.5 The results of the assessment show **significant** effects could occur as a result of extreme weather and storm conditions and droughts on landscaping/ planting if suitable design measures are not implemented.

3.5 Step 5 - Additional Mitigation Measures

- 3.5.1 Given the outline nature of the application, detailed design has not yet been undertaken. As such, detailed landscape design should include planting specifications to take into account drought and extreme weather conditions. Tree, shrub and hedge planting should also be planned to avoid wind damage. This should be supplemented by a Landscape Management Plan to ensure the ongoing maintenance and protection of the planted species. These measures can be secured by planning condition.
- 3.5.2 It is considered that following implementation of the above additional measures, the consequence of effect as a result of extreme weather and storm conditions and droughts on landscaping/ planting would reduce to **minor adverse**. It therefore follows that the residual effect would be **not significant**.

4.0 CONCLUSION

- 4.1.1 A CCRA was undertaken in support of the Proposed Development and the significance of potential impacts on receptors due to climate change considered based on the likelihood and consequence of occurrence.
- 4.1.2 Embedded measures included within the Energy Statement for Planning¹⁸ and Flood Risk Assessment & Drainage Strategy Report¹⁹ produced in support of the Proposed Development, as well as the requirements of building regulations were considered within the assessment.
- 4.1.3 The results of the assessment show **significant** effects could occur as a result of extreme weather and storm conditions and droughts on landscaping/ planting if suitable design measures are not implemented. Effects as a result of all remaining climate hazards were assessed to be **not significant**.
- 4.1.4 Additional mitigation measures are proposed for inclusion at the detailed design stage. These can be secured by planning condition. Following the implementation of these measures, the residual effect was predicted to be **not significant**.

¹⁸ The Field, Birch Business Park, Rochdale - Energy Strategy for Planning, Crookes Walker Consulting, 2025.

¹⁹ Birch Business Park Flood Risk Assessment & Drainage Strategy, Ridge, 2025.

5.0 ABBREVIATIONS

CCRA

Climate Change Risk Assessment

ISEP

Institute of Sustainability and Environmental Professionals

RCP

Representative Concentration Pathway

UKCP18

UK Climate Projections (2018)