Spring Gardens, Buxton
Environmental Statement (Vol 1)

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1. Introduction

Context of the Environmental Statement

1.1. This Environmental Statement (ES) has been prepared by Indigo Planning to accompany a full planning application submitted on behalf of Zurich Assurance Ltd c/o Threadneedle Asset Management Limited and Sainsbury's Supermarkets Ltd for a comprehensive mixed use development comprising a foodstore (Use Class A1), retail units (Use Class A1-A4 inclusive), hotel (Use Class C1), office (Use Class B1), multi-storey car park and public space.

1.2. The proposed development site is currently used as a surface level town centre car park to the rear of Spring Gardens Shopping Centre, Buxton. The application site also includes a small parcel of land to the east of New Wye Street which will be retained as surface level car parking. The development represents a major development opportunity for this site which is key to High Peak Borough Council's ("The Council") longstanding aspirations for regeneration of the wider area, being identified as a Regeneration Area in the adopted Local Plan (Adopted 31 March 2005), and the subject of the Buxton Station Road Design Framework Supplementary Planning Document adopted July 2007.

The Scheme

1.3. The application site boundary is shown on the plan at **Appendix 1.1** which equates to circa 2.8ha**.** The application site includes the existing Spring Gardens Shopping Centre which will remain. The rest of site, on which the development will take place, is principally made up of hard standing, being used as a surface car park, other than a small area of the River Wye which is otherwise culverted running underneath the site.

1.4. The proposed development contains five key elements:

i. Retail foodstore of circa 6,174sqm (66,386 sq ft) GEA;

ii. Hotel of circa 3,570sqm (38,392 sq ft) GEA (82 beds);

iii. Office floorspace of circa 430sqm (4,628 sq ft) GEA;

iv. Multi-storey car parking of totalling circa 17,965sqm (193,269 sq ft) GEA; and

v. New public realm and retail unit provision (Use Class A1-A4 inclusive) totalling circa 1,556 sqm (16,726 sq ft) GEA.

1.5. The foodstore will be located to the west of the site, to the north of the existing Spring Gardens Shopping Centre. A pedestrian entrance into the store will be provided at street level from Station Road facilitating an active frontage and linkage from Station Road through the store to the existing shopping centre and the town centre beyond. Pedestrian access to the store, through the car park, will also be gained from the Spring Gardens Shopping Centre. Though the foodstore unit will comprise three storeys from the ground level of the existing car park (i.e. two levels of car parking beneath the food retail store), the store will only be single storey above pavement level off Station Road. The small office building is located on the north west corner of the site at the junction of Station Road and Station Approach.

1.6. As Station Road slopes down to the east towards the existing roundabout, the proposed buildings increase in height with the downward slope, resulting in a maximum of five storeys adjacent to the roundabout. The proposed hotel fronts onto Station Road, and the smaller retail units, which front onto an area of new public open space around the non culverted part

of the river Wye, effectively "sandwich" the multi-storey car park to screen it from view.

1.7. The site's principal vehicular access point will remain the existing access point to the car park from New Wye Street which leads off the roundabout junction with Station Road and Bridge Street. Servicing access for the foodstore will be facilitated via Station Approach into the existing service yard.

1.8. A number of highway improvement works are proposed including highway improvement works to the Station Road/New Wye Street Roundabout, on street loading bays on the west side of New Wye Street, a taxi facility on Station Road and pedestrian and cycle improvements. The Transport Chapter of this ES provides more detail on these matters, in addition to the information contained in the Design & Access Statement which accompanies the application (attached at **Appendix 2.5**).

1.9. The site currently Buxton's main town centre car parks providing 427 car parking spaces. The car parking provision of the proposed development will increase the car parking capacity of the site in accordance with the objectives of the Local Plan, to 629 spaces.

EIA Screening and Scoping

1.10. The scheme has been developed in discussion with Planning Officers at High Peak Borough Council ('the Council') at a series of pre application meetings. At the initial meetings it was indicated that an Environmental Impact Assessment (EIA) may be required to support the scheme by virtue of the scale of the proposals and the proximity of the site to the sensitive historic core of Buxton.

1.11. Following an informal EIA Screening and Scoping Request (letter dated 19 June 2007), the Council confirmed that the scheme did represent "EIA development" and that an ES would be required to support the planning application. The scope of the EIA was also outlined in this informal process and agreed in pre-application discussions with the Council prior to submission of a formal screening and scoping request on 5 September 2007. This request included a "Scoping Report", which had three main objectives:

- To identify the key environmental impacts and receptors, as a basis for collating the appropriate baseline data and defining the impact assessment methodology;
- To assist the project design team to design into the scheme any mitigation proposals to control any potential adverse environmental impacts; and
- To form the basis for consultation with statutory and non statutory consultees for the discussion and agreement of the scope of the EIA.

1.12. The Council responded with their 'Scoping Opinion' on 29 October 2007 confirming that the scope of information proposed in the Scoping Report is satisfactory.

1.13. Copies of the relevant correspondence in relation to the screening and scoping of the EIA are attached at **Appendix 1.2.**

List of Consultants

1.14. The ES has been compiled by Indigo Planning with input from the following consultants:

Consultant	ES Topic	ES Chapter No.
Indigo Planning	Planning Policy Context	3
	Socio-Demographic and Population Effects	4

	Sustainability	11
	Impact Interactions	12
Camlin Lonsdale / Indigo Planning	Visual and Landscape Impact and Built Heritage	5
Ashley Helme Associates	Transportation	6
Wardell Armstrong	Air Quality	7
	Noise and Vibration	8
Capita Symonds	Hydrology	9
CgMs	Archaeology	10

Environmental Impact Assessment

1.15. The proposed development promoted in this planning application falls under Schedule 2 of the Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 1999, being a site in excess of 0.5 hectares, and involving development of an "Infrastructure Project". This ES documents the findings of the EIA carried out by the applicant's consultant team. The key issues covered in the ES are as follows:

- Socio Economic Effects
- Visual, Built Heritage and Landscape Impact
- Transportation
- Air Quality
- Noise and Vibration
- Hydrology: Water Resources, Flood Risk, Drainage and Ground Water
- Sustainability

1.16. Consideration of other technical aspects relevant to the determination of the scheme, including ecology, archaeology, ground conditions and waste, have been carried out by the applicant's team.

1.17. A Phase 1 Habitat survey, attached at **Appendix 1.3**, has been undertaken which demonstrates that the site has no significant ecological merit. The survey did however identify the presence of non-native crayfish in the regional watercourse including the River Wye. Though there is no record of the protected native ("white clawed") crayfish, the River Wye which runs through the site could potentially be suitable habitat. A freshwater crayfish survey was therefore undertaken. The survey found no evidence of white clawed crayfish, which combined with the recorded presence of the non-native species in the watercourse make it extremely unlikely that white clawed crayfish are present. Given the results conclude that there are no protected crayfish in that stretch of the River Wye, and that the site offers no other ecological value, it has been agreed with the Council, through consultation with Natural England, that ecology does not need to be covered in the ES.

1.18. A baseline archaeological study has been undertaken which demonstrates that the site has extremely low potential for archaeological interest. These conclusions are agreed by Derbyshire County Council (Andy Myers), though they wish to control the nature of any ground disturbance. Given the site's size, proximity to the suspected area of Roman settlement and the river, the County will seek conditioned mitigation (letter from Andy Myers dated 3 December 2007 attached at **Appendix 1.4**). Archaeology is therefore considered within the ES.

1.19. It is agreed with Council officers that given the prevailing ground conditions, geo-technical issues are unlikely to result in any significant environmental effects and that consequently

this will not need to be considered in the ES.

1.20. Whilst waste production will arise from the development, it was agreed that the nature of waste arising is unlikely to cause significant adverse effects and therefore has not been considered in this ES other than through the Sustainability Assessment at Chapter 11. As detailed in the Sustainability Review produced by WSP (attached at **Appendix 11.2**) provision will be made in the scheme for the collection of recyclable materials and the appropriate disposal of non recyclable materials. During the construction phase the main contractor will produce a Waste Management Plan to reduce waste and promote recycling of materials.

1.21. This ES fulfils the requirements of Schedule 4, Part 1 of the Town and Country Planning (Environmental Impact) (England and Wales) Regulations 1999, as amended, and Circular 2/99. The ES duly comprises the following information:

- A description of the proposed development, including its nature, size and scale as well as information about the site and its surrounding area
- The information necessary to identify and assess the main effects the development is likely to have on the environment.

1.22. A Non-Technical Summary (NTS) of the ES is provided separately.

1.23. The planning application contains all the necessary information required to test and assess all "significant" potential environmental impacts of the scheme.

1.24. The ES tests the impacts of the development along with the cumulative impact of the proposed redevelopment of the Crescent (covered in more detail in Section 2) The ES, in addition to the impact of the completed development, also tests the impacts of the clearance and construction phases of the development process.

Structure of the Environmental Statement

1.25. This Statement comprises 3 volumes. Volume 1 is this report relating to the various issues identified above, whilst Volume 2 includes appendices containing supporting information. A non-technical summary of the Environmental Statement is provided as separate Volume 3.

1.26. Volume 1 of the ES is structured in the manner set out below:

- Chapter 1 - Introduction:

  This chapter sets out the structure and general methodology applied to the EIA. It sets out and details the process of identifying potential environmental issues and effects to be evaluated in the EIA.

- Chapter 2 - The Proposed Development:

  Describes the site and its surrounding environmental context, and a more detailed appraisal of the application proposal with reference to the design layout and principles.

- Chapter 3 - Planning Policy Context:

  Provides an analysis of National, Regional and Local planning policy in relation to uses proposed in the scheme.

- Chapter 4 - Socio-Demographic and Population Effects

  Considers the current socio-demographics of the area and the potential effects of the development, including employment provision,

and retail impact.

- Chapter 5 - Visual and Landscape Impact and Built Heritage Issues:

  Examines the effect of the disposition and layout of the proposed development and the visual character of the area. Also assesses the impact of the proposed development on the architectural and historical heritage of the built environment, in the context of the adjacent Conservation Area.

- Chapter 6 - Transportation

  Summarises the Transport Assessment which reviews all potential highway problems regarding vehicle growth and the impacts of the proposed development.

- Chapter 7 - Air Quality:

  Assesses the impact of the proposed development on local air quality and considers the effects of emissions from additional traffic movements generated on the local road network during the construction and operation of the scheme.

- Chapter 8 - Noise & Vibration:

  Assesses the potential noise and vibration impacts of the proposed development during the demolition and construction works together with the completed development.

- Chapter 9 - Hydrology:

  Assesses the potential direct and indirect impacts of the development arising from issues such as sources of potential flooding, the mitigation measures required to prevent, reduce or offset any adverse impacts.

- Chapter 10 - Archaeology:

  Assesses the impact of the proposed development on buried archaeological remains.

- Chapter 11 - Sustainability:

  Assesses the impact of the proposed development and how it achieves suitable levels of sustainability.

- Chapter 12 - Impact Interactions:

  Appraises the likely interactions of all impacts, including cumulative impact, on key receptors.

1.27. The assessment of the environmental effects under each topic is explored in terms of assessment methodology, baseline conditions, and the potential impacts of both construction and operation of the development. The assessment provides an indication of any mitigation measures required, and summary findings on the effects of the development with the mitigation measures in place.

Baseline Assessment

1.28. For testing the environmental impacts, a baseline needs to be established. The site itself has little environmental merit, being predominantly hard standing surface level car parking (with the exception of the small open stretch of the River Wye which the Phase 1 habitat survey and Crayfish survey referred to above have demonstrated has no ecological sensitivity).

1.29. There is however a need to have regard to the site and its surrounding area when assessing the baseline conditions. Indeed the sensitivity of the setting of the site adjacent to two designated Conservation Areas, along with the scale of the proposed development, represent the key criteria for an EIA to be deemed necessary for this development.

1.30. The site is positioned within the heart of Buxton in close proximity to the attractive Conservation Areas associated with the spa (Area 1 - The Crescent, The Slopes and the Devonshire Royal Campus); Spring Gardens retail street (Area 3 - Spring Gardens) and the residential area to the south of Spring Gardens (Area 6 - Hardwick).

1.31. The purpose of the ES will be to test the development, not only when constructed and operational, but also during the construction phase of the development.

1.32. The construction of the scheme is scheduled to take place over a 30 month period from commencement of works on site to full operation of the development. Assuming commencement of development in early 2010 the development will be complete by mid 2012.

1.33. The pre construction phase of the development will include the provision of the temporary car park which will be operational throughout Phase 1 which will involve the construction of the multi-storey car park and hotel. The temporary car park will be removed at the commencement of Phase 2 when the new multi storey car park will be operational. Phase 2 involves the construction of the foodstore and associated car parking whilst Phase 3 involves the construction of the non food retail units, fit out and landscaping.

Assessing Methodologies

1.34. The methodologies for assessing the impacts of the development in relation to each topic addressed in this document are specifically detailed in each chapter. These methodologies relate to specific guidance of relevance to that topic, for instance the Guidelines for Landscape and Visual Impact Assessment for Chapter 5. The precise terminology for reflecting the level of impact is reflective of specific guidance and not therefore always the same from chapter to chapter. The Impact Interactions section at Chapter 12 fully appraises the interactions of each of the impacts cumulatively.

Consideration of Alternative Sites

1.35. Schedule 4 of the EIA Regulations sets out the information that is required to be included in a ES Part 1, paragraph 2 of Schedule 4 states that this includes:

> *"An outline of the main alternatives studied by the applicant…and an indication of the main reasons for his choice, taking into account the environmental effects."*

1.36. In considering alternative sites, EIA does not require a full study of alternative locations, but merely an outline of them, giving an indication of the main reasons for the choice made, taking into account environmental effects.

Town Centre Use (PPS6)

1.37. With regard to the proposed uses in this instance, it is not considered necessary to

demonstrate that alternative sites are available, as the site is located within the town centre and specifically allocated in the adopted Development Plan for the type of uses proposed.

1.38. The PPS6 Statement which accompanies the planning application confirms that in any case there are no sequentially preferable sites. Given the site's town centre location, the only place that would be more sequentially preferable is within the Primary Shopping Frontage. There are no sites or vacant units within the Primary Shopping Frontage that can accommodate the size and scale of the floorspace proposed. The application site is the most sequentially preferable site available, being contiguous with the existing built form of the spring Gardens Shopping centre, which is part of the Primary Shopping Frontage and the proposed units will be directly accessible from the existing Centre.

Flooding (PPS25)

1.39. In addition to the sequential test in accordance with the guidance of PPS6 to demonstrate that there are no sequentially preferable locations for the retail and hotel use, it is also necessary to consider the sequential test with regard to flooding as advised by PPS25.

1.40. The overall aim of the PPS25 sequential test is to direct new development towards Flood Zone 1 and areas with a low risk of flooding. Where there are no reasonably available sites in Flood Zone 1, planners should consider reasonably available sites in Flood Zone 2. Only where there are no reasonably available sites in Flood Zones 1 or 2 should decision-makers consider the suitability of sites in Flood Zone 3, taking into account the vulnerability of proposed land uses and applying the 'exception test' if required.

1.41. The central shopping area of Buxton is located around the River Wye (although the river is predominantly culverted) and as such lies partly in Flood Zone 2 and 3. The need to locate the development close to existing retail areas and the Council's stated objective that this area should be redeveloped to improve the town centre, supports the placement of this type of development in this location. The scale of the redevelopment and the limits on available land within Buxton town centre for a large food retail outlet, non food retail, office, hotel and improved parking facilities either separately or together is limited and no alternative site capable of accommodating this type of development within the Primary Shopping Frontages has been identified.

1.42. The location of the hotel within the site boundary has been determined by considering flood risk within the site and the hotel (the land use with the highest vulnerability) has been located outside Flood Zone 3 and is on land significantly higher than the predicted flood levels on the River Wye.

1.43. The small retail units are located partially within Flood Zone 3a which is consistent with PPS25 which states that the 'less vulnerable' (i.e. shops) is appropriate development in flood Zone 3a.

1.44. The site therefore satisfies the provisions of the sequential test as outlined in PPS25 and in line with the emerging guidance from the Strategic Flood Risk Assessment (currently under preparation).

The Planning Submission

1.45. In addition to this ES (and the supporting Volumes) the planning applications are supported by the following suite of documents:

- Application forms
- Plans & drawings
- Planning Statement (including PPS 6 Statement)

- Sustainability Statement
- 'Quality of Life During Construction' Statement
- Design and Access Statement
- Transport Assessment
- Existing Highways and Parking Audit
- Car Parking Management and Access Strategy
- Travel Plan
- Journey Time Study
- Statement of Community Involvement

1.46. Copies of the non-technical summary of this ES are available free of charge from the Council. Alternatively Indigo Planning will also be able to assist, and the contact details are as follow:

Mr Tim Waring
Indigo Planning
36 Park Row
Leeds
LS1 5JL
Tel: 0113 380 0270

Email: tim.waring@indigoplanning.com

1.47. Additionally hard copies of this ES may be purchased for £100 per copy, or £10 per CD ROM.

Appendices

1.1 Site Boundary Plan

1.2 Screening and Scoping correspondence

1.3 Phase 1 Habitat survey and Crayfish survey

1.4 Letter from Derbyshire County Council (Andy Myers) dated 3rd December 2007

2. The Proposed Development

Introduction

2.1. This Chapter describes the development proposals for the site and provides the context for the assessment of its potential environmental impact. The Chapter first sets out an appraisal of the existing environmental characteristics of the site and its surrounding area. It also includes details of other relevant development projects in Buxton which set the context for the consideration of cumulative impact.

The Site and Surroundings

The Development Site

2.2. The development site is currently used as the surface level car park for the Spring Gardens Shopping Centre and also serves the rest of the town centre. The application site also includes the existing Spring Gardens Shopping Centre which will remain, and a small parcel of land to the east of New Wye Street which will be retained as a surface level car park. **Appendix 1.1** shows the site's geographical boundary.

2.3. Given the development site's current use as a surface level car park, it is principally made up of hardstanding, with the exception of a small section of the River Wye which is culverted, throughout the site.

2.4. The application site itself is unremarkable in nature with little ecological or visual merit. The site adjoins the Central Conservation Area to the west and the Hardwick Conservation Area immediately to the south.

2.5. The site is situated within a Regeneration Area as described in the adopted Local Plan (2007). A full analysis of the relevant national, regional and local planning policies which affect the site and the proposed uses is included at Section 3 of this ES.

2.6. The site is immediately bound to the north by the existing retaining wall of Station Road which runs along the northern perimeter of the site from the junction with Station Approach to the west down to the Station Road/Bridge Street roundabout to the east. Station Road becomes gradually more elevated in relation to the surface level car park from east to west. The Primary Shopping Area of Spring Gardens located immediately to the south.

2.7. The site is within the ownership of Zurich Assurance Ltd (c/o Threadneedle Asset Management Limited) who own the Spring Gardens Shopping Centre. The application sites also includes land within the ownership of the Local Highways Authority.

2.8. The completed development will be maintained by Threadneedle Asset Management Limited through its management company Workman.

Surrounding Area

2.9. The site is located within the town centre and directly accessed from the town centre's primary retail frontages on Spring Gardens to the south of the site. Further primary retail frontages are located on. The Quadrant directly west of the site. A number of existing retail units are located on the southern part of Station Approach between the site and The Quadrant. Station Approach connects Station Road, which runs along the western edge of the site, with the western end of Spring Gardens.

2.10. Beyond the primary retail frontages on The Quadrant, to the west of the site, lies the Buxton

Crescent, which is subject to a scheme for its comprehensive redevelopment to provide Buxton with a new Spa facility. The Crescent fronts onto a significant landscaped area (The Slopes and "The Terrace") within the heart of Buxton town centre. The design of the scheme has evolved to have specific regard to the impact of the development, particularly visually, from this area. This ES also tests the cumulative impact of the Crescent Scheme and the proposed development.

2.11. To the north of the site beyond Station Road is Buxton train station and an Aldi foodstore. This area is also included within the designated Regeneration Area. Beyond the Aldi store and associated car park is the Buxton Mineral Water factory which takes a dominant position on the hillside above the town centre. Beyond these town centre and industrial areas, Buxton is predominantly residential.

2.12. The Buxton Conservation Areas abut the development site at its west and east ends and in some discreet locations along the southern edge at the rear of Spring Gardens. The Conservation Areas are spilt into nine distinct Character Areas, which are detailed in Chapter 5.

The Proposed Development

2.13. The proposed development comprises a mix of food and non food retail (including a Sainsbury's food superstore and four separate retail units), a hotel, office floorspace and the consolidation and expansion of the existing parking provision. The facilities will provide new local commercial infrastructure and employment. The scheme represents a significant physical improvement to the existing car park and currently exposed rear elevation of the Spring Gardens Shopping Centre.

2.14. The development of the site specifically addresses the objectives of the adopted Station Road Design Framework and the Local Plan Regeneration Area policy which relates to the site (see Chapter 3). The scheme takes advantage of the difference in levels between the existing surface level car park and Station Road, to present the new foodstore at grade with Station Road whilst accommodating the car parking over two levels below the store. A pedestrian entrance to the foodstore will be located on Station Road, opposite the train station, with a link through to the existing Spring Gardens shopping centre and to the rest of the town centre. This specifically meets the Council's aspiration for the transformation of Station Road from the back end to the front end of the town centre.

2.15. The retail element of the scheme will improve the shopping provision in Buxton within a town centre location, whilst the hotel will provide additional tourist and business accommodation in an appropriate location.

Car Park

2.16. The development proposal will result in a total net increase of 202 car parking spaces on the site. The existing surface level car park contains 427 spaces (including 26 disabled spaces). The town centre car park (including retention of the surface car park to the east of New Wye Street) will comprise 629 spaces (including 38 disabled and 11 parent and child spaces. 37 cycle spaces will also be provided.

2.17. Access to the car park is provided via a single access arrangement from New Wye Street which will operate under a priority control with New Wye Street being the priority route, to maintain the principle of the existing site's car park access arrangement.

Retail

2.18. New food retail provision is provided in the order of 6,174sqm (GEA) in the food superstore (equating to circa 2,995sqm net floorspace). An additional retail provision (Use Class A1 to A4 inclusive) will equate to circa 1,556sqm (GEA) within four separate retail units located to the south east of the site by the open section of the River Wye. This area of the scheme will

also incorporate a significant area of landscaping and improvements to the public realm.

2.19. The site falls within the town centre and by reference to the guidance of PPS6 and is appropriate in scale and nature with the town centre. The Retail Statement (**Appendix 2.4**) which accompanies the planning application demonstrates the appropriateness of the retail aspects of the scheme.

Hotel

2.20. The scheme incorporates a new hotel (circa 82 bedrooms) to meet the tourism accommodation needs of the town. The hotel occupier will be Premier Inn who will meet a niche in the market for mid-range hotel accommodation in Buxton.

2.21. The site is located in the town centre and hotel use is therefore acceptable with regard to the advice of PPS6. Furthermore the provision of a hotel in this location meets the aspirations for the Regeneration Area through the provision of further tourist accommodation, and the aspirations of the Station Road Design Framework by supporting the creation of the vibrant and viable town centre to support the development of Buxton as a spa town and visitor destination.

Design and Landscaping

2.22. The design of the scheme is addressed in detail in the Design and Access Statement attached at **Appendix 2.5**. The scheme has evolved to take into account the findings of the technical assessments which comprise this ES. Particular regard has been had to the potential impacts that development may have on environmentally and culturally sensitive areas to the east and south of the site within the Buxton Conservation Areas. The development has been designed to respect the surrounding historical context through the sensitive design with regard to height and massing and material used. An assessment of various key viewpoints is provided within the Visual Impact Assessment at Chapter 5 of this ES.

2.23. The four separate retail units have been designed having regard to their proximity to the non culverted section of the River Wye and provide appropriate mitigation from flooding through design.

2.24. The materials for the proposals have been selected to complement the material choice of the local vernacular to reinforce a sense of place and the character of the area. Sandstone panels will be for the food store used, to reflect the railway station opposite, with more traditional stone cladding on the office element in the southwest corner to better relate to the Conservation Areas. The primary materials for the hotel and multi storey car park are stone coloured ceramic rainscreen, cast stone panels and zinc cladding. The small retail units will comprise a traditional split face stone. Full details of proposed materials and the reasons for their use are detailed at Section 4.5 of the Design and Access Statement.

2.25. The scheme also includes areas of comprehensive landscaping, for example to provide a pleasant environment for pedestrians and users of the new retail units around the River Wye and to enhance the existing pedestrian environment at the top of Station Approach.

2.26. The layout meets the Council's aspirations to achieve an active frontage on Station Road, and meets the potential for landmark development at the roundabout located to the east of the site.

Alternative Development Options for the Site

2.27. As further detailed in Chapter 3 the site is subject to a specific Regeneration Area policy (Policy TC15) and also the adopted Station Road Design Framework (July 2007). This policy base supports a number of alternative uses on the site including financial and professional services, food and drink, business, leisure and recreational facilities, tourist

accommodation and facilities, community facilities, car parks, public transport facilities and other town centre uses.

2.28. The Station Road Design Framework specifically identifies the Spring Gardens Shopping Centre car park as an area of "potential change" with reference to new and improved pedestrian links through the site from Station Road to Spring Gardens. The Design Framework also identifies that the site should maintain some car parking provision, provide new public space (around the open area of the River Wye), provide wholesale frontage improvements on Station Approach and Station Road, and to take advantage of a landmark opportunity at the junction of Station Road and New Wye Street.

2.29. It is also demonstrated that the development promoted in this application will not cause any adverse environmental impact. Consequently, the scheme promoted is entirely appropriate when considered in light of the Development Plan, and furthermore is environmentally appropriate.

Construction Phasing of the Development

2.30. The proposed development will be constructed under a three stage phasing programme, with completion of the entire development tested with an operational date of 2012. The phasing programme is explained below and illustrated with regard to the car parking arrangements at each phase at **Appendix 2.1**.

2.31. A four week pre-construction phase will see the provision of a temporary car park which will be operational throughout Phase 1. Phase 1 will be a 52 week construction period for the multi-storey car park and hotel at the eastern end of the site. The temporary car park will then be removed at the commencement of Phase 2 which will represent a further 52 week construction period for the foodstore and associated car parking. The new multi-storey car park as constructed in Phase 1 will be operational at the commencement of Phase 2. Phase 3 involves the construction of the non food retail units, fit out and landscaping over a 26 week period.

Cumulative Impact with Other Development

2.32. It is necessary under the EIA Regulations to assess the cumulative impact of the proposed development scheme with any other major development in Buxton.

2.33. It has been agreed with the Council Officers that the only scheme of relevance to consider is the Crescent and Spa project, which involves the refurbishment and extension of the Crescent building located circa 100m to the south east of Spring Gardens Shopping Centre. The majority of the works are internal, and stem from a change of use, though the scheme does involve the demolition of one building to be replaced by a new structure of a slightly greater floorspace. The scheme also involves some alteration to the facades and roof of the pump room opposite the Crescent building.

2.34. The scheme also involves the reconfiguration of the existing car parking arrangement. The Crescent forecourt currently accommodates circa 40 car parking spaces which will be replaced in a consolidated car parking area to the rear. There is however also a condition on the planning permission for the development which requires further off-site parking provision to be agreed with the Council, though it is understood that this condition at the time of writing has not been resolved.

2.35. The Decision Notice for the approved scheme is included at **Appendix 2.2** and further details of the Crescent scheme are attached at **Appendix 2.3**.

Appendices

2.1 Phasing drawings

2.2 Crescent Scheme Decision Notice

2.3 Crescent Scheme Briefing Note

2.4 Retail Statement

2.5 Design and Access Statement

3. Planning Policy Context

3.1. When considering the policy framework in relation to the site it is necessary to consider National, Regional and Local planning policy. As explained in Chapter 1 there are a mix of uses proposed for the development, each raising specific policy issues. This chapter provides an overarching analysis of the planning policy framework, providing the policy context for the technical issues considered in the following chapters.

3.2. The principal planning policy documents of relevance to this scheme comprise:

National Planning Policy

- PPS1: Delivering Sustainable Development (2005)
- PPS1: Planning and Climate Change 2008 (Supplement to PPS1)
- PPS6: Planning for Town Centres (2005)
- Draft PPS6: Proposed Changes to Planning Policy Statement 6: Planning for Town Centres (2008)
- PPG13: Transport (2001)
- PPG15: Planning and The Historic Environment (1994)
- PPG16: Archaeology and Planning (1990)
- PPS22: Renewable Energy (2004)
- PPS25: Development and Flood Risk (2006)

Regional and Strategic Policy

- Regional Spatial Strategy for the East Midlands (RSS 8) (9 March 2005)
- Draft RSS for the East Midlands 2006-2026 (September 2006)
- Regional Economic Strategy for East Midlands (2006-2020)
- East Midlands Integrated Regional Strategy
- The East Midlands Tourism Strategy (2003-2010)
- Derbyshire Structure Plan (2001)

Local Planning Policy

- High Peak Local Plan (2005) Saved Policies (2008)
- High Peak Local Development Framework

National Planning Policy

3.3. The national policy framework relevant to this application is primarily set out in PPS1, PPS6, PPG13, PPS22 and PPS25.

3.4. The key principles of Central Government's planning policies are set out in PPS1 which reaffirms the role of the planning system in meeting the needs of a growing and competitive economy, and in providing for new development without harm to the natural and built environment. It is stated that the core principle underpinning planning is sustainable development and one of the key roles of planning policy is to foster economic development and investment which is consistent with the principles of sustainable development.

3.5. PPS1 states that a Planning Authority should seek to, inter alia:

- Promote the more efficient use of land through higher density, mixed use developments and the use of suitably located previously developed land and buildings;

- Planning should seek actively to bring vacant and underused previously developed land back into beneficial use to achieve the targets the Government has set for development on previously developed land;

- Planning should facilitate and promote sustainable development by ensuring high quality development through good and inclusive design; the effective use of resources; and ensuring that development support exist in communities and contributes to the creation of safe, sustainable, liveable and mixed communities with good access to jobs and key services for all members of the community (paragraph 5).

3.6. In line with this approach the proposed application seeks to develop a large brownfield site in Buxton, proposing a mix of uses including retail (food and non-food), hotel and town centre car parking.

3.7. PPS1 seeks to restrain the use of natural resources, through maximising development opportunities. It states that:

> *"…The broad aim should be to ensure that outputs are maximised whilst resources used are minimised…"* (para 21 of PPS1*).*

3.8. The minimisation of the need to consume new resources can be achieved by maximising the efficient use and reuse of existing brownfield sites, *"…rather than making new demands on the environment…"* (para 22 of PPS1).

3.9. PPS1 is concerned with delivering sustainable development, and establishes 10 key principles as part of the "general approach" to sustainable development (set out in para 27 of PPS1), including urban regeneration, development in appropriate locations to meet the needs of retailing, amongst other land uses and promoting the most efficient use of land through higher density, as well as suitably located previously developed land (para 27 of PPS1). PPS1 states that:

> *"…Planning should seek actively to bring vacant and underused previously developed land and buildings back into beneficial use to achieve the targets the Government has set for development on previously developed land…"* (para 27, vii of PPS1).

3.10. Paragraph 23 of PPS1 states that in providing a strong, stable and productive economy that aims to bring jobs and prosperity to all, planning authorities should:

> *"(i) Recognise that economic development can deliver environmental and social benefits;*
>
> *(ii) Recognise the wider sub-regional, regional or national benefits of economic development and consider these alongside any adverse local impacts;*
>
> *(iii) Ensure the suitable locations are available for industrial,*

commercial, retail, public sector (e.g. health and education) tourism and leisure developments, so that the economy can prosper…

(iv) Accurately promote and facilitate good quality development, which is sustainable and consistent with their plans;

(v) Ensure the provision of sufficient, good quality, new homes (including an appropriate mix of housing and adequate levels of affordable housing) in suitable locations, whether through new development or the conversion of existing buildings. The aim should be to ensure that everyone has the opportunity of a decent home, in locations that reduce the need to travel…"

3.11. PPS1 sets out the Government's key principles for planning, the remaining Planning Policy Statements and Guidance Notes deal with discrete land use issues. The mix of uses proposed on the site means that each use will be individually assessed below along with key impacts and considerations related to the scheme.

Regeneration

3.12. One of the major points of emphasis now drawn out in PPS1 (and PPS6) is the focus on regeneration, and in particular the physical and economic regeneration of land through mixed use development, thereby maximising the sustainability and viability of development through linked trips and complimentary uses.

3.13. For example, PPS1 states that one of the key objectives in ensuring good quality design is to ensure that developments:

"…optimise the potential of the site to accommodate development, create and sustain an appropriate mix of uses… and support local facilities and transport networks."

Retail

3.14. PPS1 states that local planning authorities should seek to:

"Focus developments that attract a large number of people, especially retail, leisure and office development, in existing centres to promote their vitality and viability, social inclusion and more sustainable patterns of development".

3.15. This objective is progressed in PPS6: Planning for Town Centres (2005) which sets out the key objectives in relation to retail planning. The Government's key objective for town centres as detailed in PPS6 is to promote their vitality and viability by:

- *"Planning for growth and development of existing centres; and*
- *Promoting and enhancing existing centres, by focusing development in such centres and encouraging a wide range of services in a good environment, accessible to all".*

3.16. PPS6 also recognises that there are other objectives to be taken into account when considering new retail development, including enhancing consumer choice, supporting efficient, competitive and innovative retail development, and improving accessibility, whereby existing and new development should be accessible and well served by a choice of means of transport.

3.17. PPS6 states that applicants for retail promoted outside town centres, as well as other town

centre uses, should demonstrate:

a) The need for development

b) That the development is of an appropriate scale;

c) That there are no more central sites for the development;

d) That there are no unacceptable impacts on existing centres; and

e) That locations are accessible;

3.18. PPS6 advises that it is not necessary to demonstrate 'need' for retail use when proposed in the town centre which, for the purposes of retail development, comprises the Primary Shopping Area. Similarly the sequential approach to site selection and assessment of impact should only be applied to development proposals for sites that are not in a town centre.

3.19. Annex A of PPS6 defines the Primary Shopping Area as the:

> *"Defined area where retail development is concentrated (generally comprising the primary and those secondary frontages which are contiguous and closely related to the primary shopping frontage)".*

3.20. It is necessary for retail proposals in town centre locations to demonstrate that they are of an appropriate scale directly related to the role and function of the centre and its catchment. PPS6 seeks to locate the appropriate type and scale of development in the right type of centre with reference to the regional hierarchy, to ensure that it fits into that centre and that it complements its role and function.

3.21. These issues are dealt with in great detail within the retail statement prepared by Montagu Evans which accompanies the application.

3.22. The Government issued proposed changes to PPS6 for consultation in July 2008 ("Consultation Draft PPS6"). This provides an indication of emerging policy on main town centre uses following the Planning White Paper which set out the objectives of the proposed changes, to support current and prospective town centre investment which contributes to economic prosperity, and to ensure that planning promotes competition and consumer choice and does not unduly or disproportionately constrain the market. The Planning White Paper (2007) stated that the "need" and impact tests would be "*replaced with a new test which has a strong focus on the Government's town centre first policy, and which promotes competitive and improves consumer choice, avoiding the unintended effects of the current need test"*

3.23. PPS6 encourages a range of complementary evening and night time economy uses (A3 restaurant/cafe) which appeal to a wide range of age and social groups.

3.24. The development proposes both major food retail and smaller non food units (A1) and Restaurants/Cafes (Use Classes A3/A4), all of which are appropriate to the role and function of Buxton town centre as detailed in regional and local planning guidance.

3.25. The development's compliance with PPS6 is demonstrated in the separate Retail Assessment at **Appendix 2.4**.

Leisure and Tourism (including hotel)

3.26. In addition to retail, PPS6 also relates to all other 'town centre uses' including the hotel element of the scheme.

3.27. Similarly to retail, it is not necessary to demonstrate a need or adopt a sequential approach

to a proposal for hotel use where it will be located within the town centre. For the purposes of non retail town centre uses, PPS6 defines the 'town centre' as the extent of the town centre boundary as shown on the proposals map. Again, the scale of development should be appropriate to the site and the town in which it is provided.

3.28. The DCLG 'Good Practice Guide for Tourism' (July 2006) outlines the value of tourism for the national and regional economy. It identifies that tourism can be the focus of regeneration of urban and rural areas, as can provide a catalyst for growth in an area, raising its profile and stabilising outmigration. The document states that:

> *"The planning system, by taking a pro-active role in facilitating and promoting the implementation of good quality development, is crucial to ensuring that the tourism industry can develop and thrive, thereby maximising these valuable economic, social and environmental benefits"*

Transport

3.29. PPG13: Transport (2000) seeks an integrated approach to planning and transport and establishes three principal objectives in order to achieve this. These are as follows:

- *"Promote more sustainable transport choices for both people and for moving freight;*
- *Promote accessibility to jobs, shopping, leisure facilities and services by public transport, walking and cycling; and*
- *Reduce the need to travel, especially by car."*

3.30. PPG13 seeks to influence the location of new development through encouraging all land uses to locate where they are accessible by public transport, walking and cycling. PPG13 also seeks to manage traffic demands. The site benefits from being well located within the town centre with good public transport links.

3.31. The 2004 Transport White Paper 'The Future of Transport: A Network for 2030' sets out that:

> *"There is huge potential for levels of walking and cycling to increase. More than forty percent of trips are under two miles and a quarter of car journeys are less than two miles. While there will always be some short trips for which a car is the most convenient choice (carrying heavy shopping, for example), many of these short journeys could be done on foot or by bike."* (para 6.1),
>
> *"Our aim for the next 20 to 30 years is to increase walking and cycling."* (para 6.3),
>
> *"Nearly two-thirds of all public transport journeys in England are by bus. In many areas, and for many journeys, they are the only public transport alternative to using a car. Buses are a powerful tool in tackling the problems caused by congestion, allowing more people to make the same journey while generating less traffic."* (para 5.1),
>
> *"Over the last century increasing access to cars, particularly for traditional bus users such as older people and women, had contributed to a decline in bus patronage. The historic decline was reinforced by planning policies which disburse travel patterns…"* (para 5.2).

3.32. All of the above emphasise the continuing commitment of Government to supporting patterns of development that are consistent with good accessibility by non-car modes.

Built Heritage and Conservation Areas

3.33. The principal legislation concerning the identification and protection of historic buildings, conservation areas, historic parks and gardens and other elements of the historic environment is provided in the Listed Buildings and Conservation Areas Act 1990.

3.34. PPG15 provides advice to local authorities regarding their duties in considering planning applications and drafting local planning policy; it states that they have a duty to have regard to the historic environment and its retention and development control policies should be applied that enhance the historic environment and promote sustainable economic growth unless material considerations indicate otherwise.

3.35. The development does not directly affect any listed buildings but some within the vicinity of the site are visible in some views of it and their setting may be affected. The Planning (LB and CA) Act requires consideration of development proposals to take account of the desirability of preserving the setting of listed buildings (sections 16 and 66).

3.36. Though the development site does not lie within a Conservation Area, as it is located adjacent to one it must still have due consideration to the setting of this. PPG15: Planning & The Historic Environment (September 1994) sets out Government guidance on development in conservation areas and indicates that where development is outside a conservation area its consideration must still have regard to the desirability of preserving or enhancing the setting of the conservation area (para 4.14).

Design

3.37. For national guidance on principles of design, PPS1: Delivering Sustainable Development is the most relevant. Paragraph 33 of PPS1 states that:

> *"Good design ensures attractive, useable, durable and adaptable places and is a key element in achieving sustainable development."*

3.38. PPS1 recognises that good design is linked to good planning and that high quality and inclusive design should be the aim of all developments in order to create well-mixed and integrated developments. Paragraph 35 states that good design should:

> *"- address the connections between people and places by considering the needs of people to access jobs and key services;*
>
> *- be integrated into the existing urban form and the natural and built environments;*
>
> *- create an environment where everyone can access and benefit from the full range of opportunities available to members of society; and,*
>
> *- consider the direct and indirect impacts on the natural environment."*

Archaeology

3.39. The principal guidance for the consideration of archaeological issues is 'Planning Policy Guidance Note 16: Archaeology and Planning' (PPG16). PPG 16 indicates that there should be a presumption in favour of the physical preservation of nationally important remains, but that in the case of less important remains, planning authorities need to weigh the relative importance of archaeology against other factors (para 8).

3.40. PPG16 notes that the question of whether archaeological remains exist on a site proposed for development, and their importance, is the key to informed and reasonable planning

decisions (para 12).

3.41. PPG16 therefore recommends developers carry out an initial assessment of whether the site is known or likely to contain archaeological remains, and suggests that they may wish to commission an archaeological assessment, comprising in the first instance, a desk-based assessment (paras 19-20). Further evaluation may be necessary in the form of geophysical survey and field evaluation if important remains are thought to exist, to define the character and extent of the remains, and thus indicate the weight that ought to be attached to their preservation. On this basis, an informed and reasonable planning decision can be taken (paras 20-21).

3.42. PPG16 indicates that where planning authorities judge that the 'in situ' physical preservation of archaeological remains is not justified, and that development resulting in their destruction should proceed, it is reasonable to expect the developer to make arrangements for their excavation and recording, and the subsequent publication of the results of the excavation. This can be achieved by a legal agreement under section 106 of the Town and Country Planning Act 1990, or by means of a suitably worded planning condition (paras 25-26).

3.43. PPG16 states that the key to the future of most archaeological sites lies with local authorities, and advises that appropriate planning policies in development plans, and their implementation through development control, are especially important (para 14). Development plans should reconcile the need for development with the interests of archaeology, include policies for the protection of sites of archaeological interest, and define the areas and sites to which the policies apply (para 15).

Environmental Considerations

3.44. PPS 9 (Nature Conservation) sets out planning policies on protection of biodiversity (and geological conservation).

3.45. The objectives of PPS9 are to guide the local planning process with the aim of:

- promoting sustainable development by ensuring that biological and geological diversity are conserved and enhanced as an integral part of social, environmental and economic development, so that policies and decisions about the development and use of land integrate biodiversity and geological diversity with other considerations;

- conserving, enhancing and restoring the diversity of England's wildlife and geology by sustaining, and where possible improving, the quality and extent of natural habitat and geological and geomorphological sites;

- contributing to rural renewal and urban renaissance by:

    - enhancing biodiversity in green spaces and among developments so that they are used by wildlife and valued by people, recognising that healthy functional ecosystems can contribute to a better quality of life and to people's sense of well-being; and – ensuring that developments take account of the role and value of biodiversity in supporting economic diversification and contributing to a high quality environment.

3.46. PPS9 establishes, amongst other matters, that specific consideration should be given to species and habitats of key importance for England as listed under Section 74 of the Countryside and Rights of Way Act (2000). It makes it clear that the UK Biodiversity Action Plan must be considered by Local Planning Authorities during the planning process.

3.47. PPS22: Renewable Energy, seeks to implement the aims of the Energy White Paper and ultimately cut carbon dioxide emissions by 60% by 2050 and also to achieve 20% of all energy supplied from renewable sources by 2020.

3.48. Paragraph 8 of PPS22 states that local authorities should include policies in local development documents that require a percentage of all energy to be used in new residential, commercial, industrial developments to come from renewable sources. The paragraph continues to state that this should be:

> *"…only applied to developments where the installation of renewable energy generation equipment is viable given the type of development proposed, its location, and design…"*

3.49. The guidance also concludes that local authorities should not put an undue burden on developers by, for example, requesting all energy for a development be from renewable sources. A review of the scheme's sustainability is contained in Chapter 11.

3.50. Planning Policy Statement (PPS) 24: Planning and Noise gives guidance to local authorities in England on the use of their planning powers to minimise the adverse impact of noise and builds on the advice previously contained in DOE Circular 10/73 and:

- outlines the considerations to be taken into account in determining planning applications both for noise-sensitive developments and for those activities which will generate noise;
- introduces the concept of noise exposure categories for residential development, encourages their use and recommends appropriate levels for exposure to different sources of noise; and
- advises on the use of conditions to minimise the impact of noise.

Hydrology and Flood risk

3.51. PPS25 sets out Government policy on development and flood risk and aims to ensure that flood risk is taken into account at all stages in the planning process to avoid inappropriate development in areas at risk of flooding, and to direct development away from areas of highest risk. Where new development is, exceptionally, necessary in such areas, the policy aims to make it safe, without increasing flood risk elsewhere, and, where possible, reducing flood risk overall.

3.52. PPS25 requires that a risk based approach to flood risk is adopted at all levels of planning. It introduces:

- The concept of classification of the vulnerability of development to flood risk;
- The need to conform to the requirements of the "Exception Test" in circumstances where new development is proposed in a higher risk Flood Zone than is defined as "appropriate" within PPS25;
- The need to apply Strategic Flood Risk Assessment (SFRA) to decisions taken at all levels of planning, i.e. the need for assessment at the Regional Spatial Strategy and Local Development Framework level.

3.53. Additionally PPS25 introduces the concept of Flood Risk Reduction, particularly in circumstances where development has been sanctioned on the basis of the "Exception Test".

3.54. PPS 25 reclassifies the Flood Zones as being "Low probability" (Flood Zone 1), "Medium probability" (Flood Zone 2), and "High probability" (Flood Zone 3). Flood Zone 3 is further divided into 3a and 3b, with Zone 3b being defined as the "Functional Floodplain".

3.55. Annex D of PPS25 outlines the Exception Test, which should be applied by decision makers only after the Sequential Test has been applied. The Exception Test is necessary where "more vulnerable" development, such as housing, is proposed for Zone 3. The Exception

Test is that;

- The development provides wider sustainability benefits to the community that outweigh flood risks,
- The development is on developable previously developable land or where there are no reasonable alternative sites on developable previously developable land,
- A Flood Risk Assessment (FRA) must demonstrate that the development will be safe, without increasing flood risk elsewhere, and, where possible, will reduce flood risk

3.56. The Environment Agency national policy is currently set out in "Policy and Practice for the Protection of Floodplains" (Environment Agency, 1997) where the objectives of the floodplain policy are defined as ensuring that:

- Development should not take place which has an unacceptable risk of flooding, leading to danger to life, damage to property and wasteful expenditure on remedial works;
- Development should not create or exacerbate flooding elsewhere;
- Development should not take place which prejudices possible flood mitigation to reduce flood risk;
- Development should not cause unacceptable detriment to the environment; and
- Natural floodplain areas are retained and where practicable restored in order to fulfil their natural functions.

3.57. Issues of flood risk are dealt with at Chapter 9 of this ES.

Regional and Strategic Policy

3.58. High Peak lies in the north of the County of Derbyshire. The RSS for the East Midlands (RSS8) was adopted in March 2005. A revised Draft East Midlands Plan (Draft RSS) was consulted on in September 2006 and the Report of the Panel for the subsequent Examination in Public (May-June 2007) was published in November 2007. Proposed Changes to The Draft RSS were published in July 2008 with adoption scheduled for spring 2009. This ES has concentrated on the regional policy set out in the emerging RSS, given its advanced state of preparation.

3.59. The Draft RSS splits the region into five Sub-areas of which High Peak is located within the Peak Sub-area. Policy 8 of the Draft RSS (incorporating Proposed Changes) states that:

> *"The preparation of policies and programmes in the Sub-area should:*
>
> - *Help secure the conservation and enhancement of the Peak District National Park, respecting the statutory purposes of its designation;*
> - *Address the social and economic needs of the Park's communities, for example, by the provision of appropriate business premises and affordable housing; and*
> - *Protect and enhance natural and cultural heritage of the Sub-area, in particular the Peak District Moors Special Protection Areas of Conservation covering the South Pennine Moors, Peak District Dales, the Bee's Nest and Green Clay Pits and Gang Mine and the Peak District Moors SPA/SAC.…*

3.60. Buxton lies outside the National Park and the Draft RSS recognises the close functional relationship it and other towns in the Peak Area outside the National Park have to play with other large urban areas. Given these relationships and the development restraints within the National Park the Draft RSS (incorporating Proposed Changes) identifies that these towns are likely to be subject to particularly strong development pressure.

3.61. The 2001 Derbyshire Structure Plan provides the strategic regional context for the High Peak Local Plan and covers the period 1991-2011. It sets the broad planning policies for the area and contains a range of policies relating to town centres, tourism and the economy.

3.62. The Regional Economic Strategy (RES) aims to ensure sustainability and increase productivity in the region by ensuring that the quality and supply of development land contributes towards sustainable growth of the regional economy. The Integrated Regional Strategy (IRS) sets out a number of social, environmental and economic objectives, including the need to protect the cultural and built heritage of the region.

Regeneration

3.63. Policy 19 of the Draft RSS (incorporating Proposed Changes) states that regeneration activity should be focused on areas of greatest identified need, including High Peak identified as an 'economically lagging' rural area in the Government's Rural Strategy.

3.64. The Regional Economic Strategy (RES) sets out the wider economic priorities for the Region for the period 2006-2020.

3.65. The focus of the RES include the following key economic drivers:

- *"Skills: addressing the relatively high proportion of people with no qualifications and enabling more people who are in work to develop higher level skills;*
- *Innovation: helping to increase investment in research and development by businesses, particularly small and medium sized enterprises - and ensuring far more good ideas are translated into new or improved products or services;*
- *Enterprise: improving rates of company formation and survival, and creating a culture of enterprise which begins at school;*
- *Investment: improving levels of investment in the service sector, so the region is equipped to maximise the opportunities from this fast-growing part of the economy".*

3.66. Buxton is included within the Peak District Sub Area of the RES, where it is recognised that much of the economic activity of the Sub Area relates to either tourism or primary industry. The area is strong in terms of tourism with the Peak District National Park being the most visited National Park in Britain, with high levels of day visitors.

3.67. A number of key issues affecting the Sub Area are identified, including;

- *"This area is small in size, both in terms of land area and population, but the environmental quality of the Peak National Park generates significant wealth for the region through tourism.*
- *House price inflation has caused affordability problems for some residents.*
- *Although the Peak sub-area is well connected to the greater*

Manchester conurbation there are issues with connectivity to other areas within the East Midlands".

3.68. As a result of the key issues, the RES's sub-area strategic priorities are;

- Environmental protection
- Transport and logistics
- Enterprise and business support
- Employment, learning and skills

Retail and Leisure (including hotel)

3.69. The Draft RSS (incorporating Proposed Changes) reiterates the advice of PPS6 with regard to the promotion of the viability and viability of existing centres by focusing new investment in these centres. Policy 22 of the Draft RSS (incorporating Proposed Changes) states:

"…Where town centres are under performing, action should be taken to promote investment through design led initiatives and the development and implementation of town centre strategies. Development Plans and future Local Development Frameworks, should include policies and proposals to:

- *bring forward retail and leisure development opportunities within town centres to meet identified need;*
- *prevent the development of additional regional scale out-of-town retail and leisure floorspace; and*
- *monitor changes in retail floorspace on a regular basis".*

3.70. Buxton is identified as a *Town Centre* in the adopted Structure Plan within the hierarchy of centres. Development proposals will have regard to this hierarchy in order to sustain and enhance the vitality and viability of the centres within that hierarchy. Town Centre and Shopping Policy 2 states that:

"New shopping development and other major travel-generating uses within existing centres will be permitted providing that their scale and nature:

1) is compatible with the scale and character of the centre

2) either individually or cumulatively does not undermine the vitality and viability of any other existing nearby centre as a whole

3) is acceptable in terms of public transport accessibility, traffic generation and car parking provision that is in accordance with car parking standards for town centre locations to ensure that car parking provision is not excessive"

3.71. The Structure Plan states that new development will be encouraged within existing centres which upgrades existing facilities, makes use of derelict or unused land, and improves historic buildings and townscape.

3.72. With regard to the regional priorities for tourism, Policy 24 of the Draft RSS identifies that the potential for tourism growth should be sought, whilst maximising economic benefits and minimising adverse impacts on the environment and local amenity. Policy 24 states that

measures should include:

- *"provision for additional tourist facilities including accommodation close to popular destinations that have adequate environmental and infrastructure capacity;*
- *Improvements in the quality of existing facilities and services; and*
- *Improvements to accessibility by public transport and other non-car modes."*

3.73. The Structure Plan states that in the High Peak and the Derwent Valley Corridor, provision will be made for leisure and tourism development that sustains the economy of the area and diverts tourist activity from more sensitive areas (Leisure and Tourism Policy 2).

3.74. With specific regard to the Peak Sub-area, the Draft RSS states that *"…development should be focussed on encouraging quality schemes that are in scale with existing historic town centres mainly outside the National Park".*

3.75. The East Midlands Tourism Strategy (2003-2010) recognises the value of Buxton to the region and specifically refers to the redevelopment of the Spa. It recognises the potential conflict between environmental needs and development pressures in areas of tourist activity.

Transport

3.76. Policies 42 to 44 of the Draft RSS (incorporating Proposed Changes) sets out the regional transport objectives which largely reiterate the Government's objectives as set out in PPG13 to reduce car traffic growth and reducing the need to travel. These objectives are reproduced in the adopted Structure Plan which states that:

> *"New development will take into account the aim of reducing the need to travel. Priority will be given to public transport, walking and cycling, in order to increase the proportion of journeys undertaken by those modes of transport and to managing the demand for private car travel".*

3.77. Derbyshire County Council (DCC) sets out its commitment to accessibility and sustainable travel in its Local Transport Plan (LTP) 2006-2011. DCC has a clear 'vision' in its LTP with regard to accessibility, being:

> *"To ensure that everyone in Derbyshire has the opportunity to access healthcare, education, employment and* ***food shopping*** *facilities in a reasonable time and at a reasonable cost."* (Indigo emphasis).

3.78. The DCC LTP sets out that the accessibility objectives are to:

- *"Ensure new facilities are located where they can be accessed by means other than the private car;*
- *Improve the quality and use of public transport, community transport an other demand responsive transport;*
- *Improve the quality and availability of public transport information;*
- *Improve access to facilities by healthier and more sustainable travel modes, and for people with mobility needs;*
- *Support the development and implementation of travel*

planning;

- *Implement prioritised public rights of way improvements."*

Design

3.79. The Draft RSS (incorporating Proposed Changes) and adopted Structure Plan promote high quality design with particular reference to the preservation and enhancement of the natural and historic environment. With regard to the towns in the Peak Sub-area the Draft RSS encourages quality schemes that are in scale with the historic nature of these town centres.

Archaeology

3.80. Policy 27 of the Regional Spatial Strategy for the East Midlands (RSS8) reflects PPG16, stating that:

> *"Sustainable development should ensure the protection, appropriate management and enhancement of the region's natural and cultural assets (and their settings). In the development and implementation of strategies and programmes in the region, local authorities and other bodies should apply the following principles:*
>
> - *the promotion of the highest level of protection for the region's nationally and internationally designated natural and cultural assets;*
> - *damage to natural or cultural assets (and their settings) should be avoided wherever and as far as possible, recognising that such assets are usually irreplaceable;*
> - *unavoidable damage must be clearly justified by a need for development in that location which outweighs the damage that would result and should be reduced to a minimum through mitigation measures;*
> - *unavoidable damage which cannot be mitigated should be compensated for, preferably in a relevant local context and where possible in ways which also contribute to social and economic objectives;*
> - *overall there should be no net loss of natural or cultural assets, and opportunities should be sought to achieve a net gain across the region; and*
> - *protection of the region's best and most versatile land".*

3.81. Environmental Policy 12 of the Derbyshire Structure Plan also reflects PPG 16, stating that:

> *"Development on or adjacent to archaeological or other heritage features will be considered against the need to ensure their preservation in situ, conservation, interpretation and, where appropriate, investigation. In particular:*
>
> *a) where development proposals may disturb or destroy archaeological remains or other heritage features an archaeological evaluation will be required to assess the nature and importance of the archaeological remains and the effect of the proposed development on them. Where important archaeological remains are identified, applicants will be required to submit a*

written mitigation strategy as part of their planning application demonstrating how the impact of the proposed development can be mitigated;

b) planning permission will not be granted for development which would disturb or destroy Scheduled Ancient Monuments or other nationally important archaeological sites or monuments and/or their setting;

c) in the case of less than national importance where preservation of remains in situ is not feasible and there is an overriding need for development which will disturb or destroy archaeological or other heritage features known to be of importance, measures will be taken to minimise its impact on those features and to ensure an appropriate level of recording is carried out prior to and during development to ensure preservation by record."

Environmental Considerations

3.82. The Draft RSS (incorporating Proposed Changes) contains a number of policies relating to the management and enhancement of the green and historic environment. With regard to water resources, Policy 32 of the Draft RSS (incorporating Proposed Changes) requires water related issues to be taken into account at an early stage of development whilst Policy 26 requires appropriate management of the region's natural heritage.

3.83. Environmental Policy 9 of the Structure Plan states that planning permission will not be granted for development proposals that would be detrimental to the character, appearance or setting of a designated Conservation Area.

Local Plan

3.84. Local planning policy is contained in the adopted High Peak Local Plan (adopted 31 March 2005). With the advent of the new planning system, the Council are now preparing a Local Development Framework.

3.85. Under the provisions of the Planning and Compulsory Purchase Act 2004, policies in the High Peak Local Plan were valid for a period of three years. Local Planning Authorities were invited by the Department for Communities and Local Government (DCLG) to make an application to the Secretary of State to issue a direction to save selected Local Plan policies beyond this 3-year period.

3.86. The LDF is at an early stage of preparation, and consequently the Council sought to 'save' the majority of the Local Plan policies. The Secretary of State approved the schedule of saved policies, which came into force on 31 March 2008. A Saved Policies Local Plan has now been issued with saved policies and supporting text renumbered and all policies not saved deleted. This ES refers to the reassigned policy numbers and paragraphs, though for clarity includes the 2005 Local Plan reference in brackets.

3.87. With regard to the site and its surrounding environs, the saved Local Plan policies are supplemented by a recently adopted Supplementary Planning Document for Station Road. This will form part of the LDF, though in the meantime represents a material consideration in the determination of planning applications.

Site Specific Policies

<u>Policy 39 (TC15 – Regeneration Areas in Buxton)</u>

3.88. The site is shown on the proposals map as part of the Buxton Central Regeneration Area under Policy 39. This Regeneration Area comprises the Station Area, the development site and existing Spring Gardens Shopping Centre and the area to the east of Bridge Street.

Policy 39 states:

> *"Within the following regeneration areas, identified on the proposals map:*
>
> *Buxton Central; and*
>
> *Buxton Market Place,*
>
> *Planning permission will be granted for comprehensive development schemes including the conversion and re-use of existing buildings to provide:*
>
> - *Office and business accommodation; and/or*
> - *Leisure facilities; and/or*
> - *Tourist Accommodation; and/or*
> - *Retail development, and/or*
> - *Public transport and parking facilities, and/or*
> - *Residential development as part of a mixed use scheme and/or re-use of existing buildings*
>
> *Provided that:*
>
> - *The Development will be of high quality and will be sympathetic to the character of the area in terms of its siting, scale, form, layout, design, detailing, external appearance and landscape treatment; and*
> - *A travel plan is prepared for the development*
> - *The development will include pedestrian links to existing town centre facilities; and*
> - *The development will be provided with adequate car parking areas; and*
> - *Retail development will be subject to policies TC3 and TC4*
>
> *In the Buxton central area planning permission will not be granted for development which would prejudice the continued provision of public passenger transport or the operational railway requirements of freight and passenger services and facilities".*

3.89. The Local Plan states the Wye Street car park (i.e. the development site) offers scope for town centre redevelopment which could enhance the area which *"currently presents the very stark rear view of the Spring Gardens Shopping Centre from the relief road and the station area".* Local Plan at paragraph 5.115 (6.124) identifies that *"any development should, where possible, improve the rear service arrangements for Spring Gardens and the pedestrian links between the Centre and Spring Gardens and also increase the car parking capacity of the site".*

3.90. The Plan states that any car parking spaces that are displaced will need to be incorporated into the scheme, and in the case of Wye Street, this is likely to mean parking above ground level.

3.91. The Plan states that any retail development on the site will also have to have regard to the requirements of Policies TC3 and TC4 which are detailed below.

Retail

3.92. Policy 27 (TC1 – Town Centres) identifies that development should enhance the vitality and viability of town centres. Buxton is identified as a "town centre" and the major shopping centre in the High Peak, providing a wide range of convenience and comparison shopping. The Plan states that along with Glossop, Buxton offers the most significant development opportunities and potential for growth.

3.93. Policy 28 (TC2 – Town Centre Environment) requires development within town centres to:

> *"Be of high quality design, external appearance, landscaping and other site treatment*
>
> *Be sympathetic in use, siting, scale and character to its immediate and wider surroundings*
>
> *Not prejudice the provision of public transport or otherwise adversely affect public accessibility"*

3.94. The Local Plan identifies that trade is leaking to centres such as Manchester, Stockport and Macclesfield and large regional centres such as Meadowhall and the Trafford Centre. The Local Plan therefore includes an aspiration to strengthen the town centres by expanding their retail offer to encourage people to shop locally and stem the trend of expenditure outflow.

3.95. The Council's retail strategy is based on the identification of key sites i.e. the Regeneration Areas, which can accommodate comprehensive redevelopment. As a designated Regeneration Area, the application site is one of the key identified sites for possible comprehensive redevelopment.

3.96. Though identified as areas capable of meeting the need for comprehensive development, proposed retail schemes within identified Regeneration Areas also have to have regard to Policies 29 (TC3 – Large Stores) and 30 (TC4 – Large Stores Which Cannot be Located in Existing Town Centres) . In this case Policy 30 (TC4) is not relevant as it only applies to development that falls outside the town centre.

3.97. Policy 29 (TC3), states:

> *"Planning Permission will be granted for retail development of more than 500 square metre gross floorspace (including extensions to existing stores) within the defined town centres provided that:*
>
> - *It is of satisfactory siting, design and layout appropriate to the size and character of the town centre and has safe and convenient pedestrian links to existing facilities; and*
> - *The proposal, due to its scale and nature, does not individually or cumulatively undermine the vitality and viability of any other existing nearby centre."*

3.98. Small scale shopping facilities to meet local needs will be encouraged by the Council, again provided that they do not have a negative impact on the vitality and viability of the Central Shopping Area. Such proposals should be sympathetic in scale and form to the surrounding area and should not adversely impact on the amenity of the surrounding area.

Leisure (including Hotel)

3.99. The Local Plan encourages the development of a wide range of town centre uses, including tourist accommodation, to create employment opportunities and to improve and expand the quality and quantity of facilities to help attract more visitors.

3.100. Paragraph 5.134 (6.142) states that *"The Council will continue to promote the development of tourist facilities and accommodation, and to market Buxton on the basis of its central location in relation to the Peak District and other tourist facilities".*

Heritage

3.101. High Peak Borough Council have recently reviewed the existing Town Centre conservation area boundaries and as part of the review completed a character appraisal providing a comprehensive appraisal that identifies nine distinct Character Areas.

3.102. The development site does not lie within a defined Conservation Area, though it is located immediately adjacent to the Buxton Central Conservation Areas at its west and east ends. Policy 20 (BC 5 – Conservation Areas and their Settings) identifies that within Conservation Areas and their settings development is required to preserve and enhance the character and appearance of the area. Proposals on the development site must therefore respect the character and appearance of the adjacent Buxton Central Conservation Area to ensure that they preserve or enhance its setting. Policy 20 (BC5) states:

> *"Within Conservation areas and their settings planning permission will be granted for development, including extensions, alterations and changes of use, provided that:*
>
> *The use, siting, scale, detailed design, external appearance and landscape treatment of the development will preserve or enhance the special architectural or historic character or appearance of the area; and*
>
> *Important buildings, open spaces, views, trees, walls and other natural and man-made features which positively contribute to the special architectural or historic character or appearance of the area will be protected from harmful development."*

3.103. The Council have produced Conservation Area Character Statements for the Buxton Central Conservation Areas which include Area 1 (the Crescent, the Slopes, and the Devonshire Royal Campus); Area 3 (Spring Gardens); and Area 6 (Hardwick). These describe the characteristics of the area and outline particular features of significance or of negative impact. These are addressed in further detail at Chapter 5.

Design

3.104. Policy 3 (GD4 – Character, Form and Design) states that planning permission will be granted for development provided that its scale, siting, layout, density, form, height, proportions, design, colour and materials of construction, elevations and fenestration and any associated engineering, landscaping or other works will be sympathetic to the character of the area, and there will not be undue detrimental effect on the visual qualities of the locality or the wider landscape.

3.105. Policy 82 (TR5) relates to access, parking and design and identifies that development, will make safe and appropriate provision for access and egress by pedestrians, cyclists, public transport users and the private car.

Archaeology

3.106. Policy 25 (BC10 – Archaeological and Other Heritage Features) state that proposals should

not result in harm to archaeological or heritage features:

> *"Planning permissions will not be granted for development which is likely to result in harm to a schedule ancient monument or other nationally important site, its setting or amenity value.*
>
> *Elsewhere, planning permission will be granted for development, provided that:*
>
> *There will not be a significant adverse effect upon other known archaeological or heritage features, including Buxton's area of archaeological interest as defined on the proposals map*
>
> *Where proposals will affect a feature or an area of archaeological interest, they will, where appropriate, include an archaeological evaluation of the site and a statement demonstrating how it is intended to satisfactorily accommodate or preserve the archaeological or heritage features.*
>
> *Where planning permission is granted, conditions will be imposed, and/or planning obligations sought, to ensure that:*
>
> *Archaeological, or heritage features are recorded and retained intact in situ; or*
>
> *Where this is impractical, archaeological or heritage features are appropriately excavated and recorded, prior to destruction by development."*

Transport

3.107. The Local Plan recognises that new development has an impact on travel behaviour, stating in paragraph 10.1 (11.10) that:

> *"Virtually all forms of new development will have an impact on the movement of goods and people. It is important at the outset to consider new development against the context of achieving a more sustainable pattern of transport."*

3.108. This is reinforced through Policy 78 (TR1 – Transport Implications of New Development), which states that:

> *"Planning permission will be granted for new development provided that it seeks to:*
>
> - *Reduce the need to travel*
> - *Widen transport choice for people and goods*
> - *Integrate transport and land use".*

3.109. The Local Plan places great emphasis on the need for safe travel, whatever the chosen mode of transport, and states in paragraph 10.13 (11.22) that:

> *"Whilst locational policies seek to minimise the need to travel, new development will continue to have an impact on the surrounding transport networks. In rural areas such as the High Peak, many journeys can only be carried out by motorised vehicles; consequently vehicular access to and from new development remains important. However access must be*

considered in the context of the needs and safety of all the community."

3.110. Policy 81 (TR4 – Traffic Management) states that:

"Planning permission will be granted for development, provided that:

- *The capacity and design of the transport network serving the site will reasonably accommodate the anticipated increase in travel without materially harming highway safety or local amenity; and*
- *The traffic generated by the development will not unduly interrupt the safe and free flow of traffic on the trunk or primary roads or materially affect existing conditions to an unacceptable extent.*

Where a proposed development generates significant travel movements, the proposal will be accompanied by a Transport Assessment study to assess the likely affects of the development on the local transport network".

3.111. The Local Plan guidance with respect to car parking is broadly consistent with Government guidance and recognises that the availability of parking has a major influence on people's travel choices. HPLP adopts the use of maximum parking standards, derived from PPG13 and the Regional Planning Guidance. The Council's position on parking is set out in Policy 82 (TR5 - Access, Parking and Design) which states:

"Planning permission will be granted for development, provided that:

- *It will make safe and appropriate provisions for access and egress by pedestrians, cyclists, public transport users and the private car.*
- *It includes a high standard of design and layout having regard to parking, access, manoeuvring, servicing and highway guidelines set out in Appendix (Parking Standards), and relevant Government guidance and good practice, where appropriate*

Where development is expected to generate a higher level of car use than can be accommodated by the maximum parking standards or will significantly exacerbate existing traffic problems, the applicant should submit a Travel Plan to reduce car dependence."

3.112. The adopted High Peak Local Pan includes an overall theme of aiming to promote sustainable transport. .

Hydrology and Flood Risk

3.113. Within the High Peak Local Plan, the policy relating to Flood Prevention (GD10) was not "saved". National Guidance contained within PPS25 sets the policy framework on development and flood risk.

Buxton Station Road Supplementary Planning Document (SPD) – August 2007

3.114. The majority of the policies within the Local Plan have been 'saved' for the purposes of Development Control in lieu of the emerging Local Development Framework.

3.115. The Buxton Station Road SPD, adopted in August 2007, will form part of the LDF though in the meantime supplements the policies of the Local Plan and is a material consideration in the determination of planning applications. It seeks to guide development and regeneration

activity within the area designated by the adopted High Peak Local Plan under parent policy 39 (TC15) as detailed above, to:

> *"Promote and encourage new development within the Buxton Regeneration Area, and immediate environs, of consistently high quality, which over the short, medium and long terms makes a major contribution to the achievement of the following objectives:*
>
> - *Transforms the appearance of the Station Road/Bridge Street corridor from the back door to the front door of the town centre…*
> - *Create a first class gateway into the town centre…*
> - *Enhances and contributes to the townscape qualities that combine to create the image and identity of Buxton…*
> - *Radically improves the quality of the pedestrian environment…*
> - *Supports the creation of a vibrant and viable town centre…*
> - *Supports the vision to develop Buxton as a thriving Spa town…and*
> - *Supports the nationally acknowledged process of regenerations through investment in Buxton's unique heritage."*

3.116. The SPD seeks to guide development and regeneration activity aspired to as set out in Local Plan Policy 39 (TC15). The SPD does not alter the objectives of Policy 39 (TC15), but provides additional detailed design guidance which future applications should adhere to.

3.117. The SPD sets out the design principles for the Station Road area which aim to:

- *"Realise the full potential of the area as the gateway to the town centre;*
- *Promote and secure the sustainable design of the area;*
- *Address the negative impacts of Station Road;*
- *Reveal and integrate the River Wye (whilst addressing flood risk considerations;*
- *Improve pedestrian movement and connectivity to key destinations;*
- *Establish a vibrant mix of uses across the area; and*
- *Secure high quality, place specific development"*

3.118. The SPD specifically states at paragraph 5.2 that pastiche should be avoided in favour of high quality contemporary architecture that responds to the distinctive building and townscape qualities of Buxton town centre.

3.119. The SPD includes a masterplan which identifies "Areas of Potential Change", one of which includes the development site. As part of this Area , the masterplan requires identifies the retention of parking on the site, new public space, frontage improvements, landmark opportunity and new and improved pedestrian links.

High Peak Local Development Framework (LDF)

3.120. The LDF is at an early stage of preparation, therefore the majority of the local plan policies have been saved, where still relevant and not superseded by more recent national policy.

3.121. A Core Strategy discussion paper was prepared in November 2007 and represented the first step in preparing a new LDF. The purpose of this discussion paper was to gather views and opinions about what types of issues exist in the High Peak, and how they might be addressed in very broad terms. This will inform the preparation of the Issues and Options stage of the Core Strategy scheduled for early 2009, with a Submission target date of 2010.

Summary

3.122. The development will create a 'sustainable' mixed use development, within the town centre which accords with all principles of National Planning Policy contained within PPS1, PPS6, PPG13, PPG15, PPS22 and PPS25.

3.123. Within the adopted Structure Plan, Buxton is recognised in the second tier of the regional hierarchy of centres, as a Town Centre. As such, development proposals are encouraged with regard to this hierarchy, in order to sustain and enhance the vitality and viability of the centres.

3.124. Retail development is encouraged within existing centres and will be permitted providing that is compatible with the scale and character of the centre. The retail element of the proposed will meet an identified need for retail facilities in Buxton.

3.125. The proposed hotel is an appropriate use in town centres and will meet the regional aspiration for additional tourist facilities (including accommodation) close to popular destinations in locations with sufficient infrastructure capacity.

3.126. In addition to the general appropriateness of the uses proposed within the existing town centre, the site is specifically designated as a Regeneration Area where schemes for comprehensive redevelopment are encouraged, specifically including retail development, parking facilities and leisure facilities as appropriate uses.

3.127. The scheme will provide a comprehensive mixed use scheme which will represent a physical improvement to the existing surface level car park and the rear elevation of the existing shopping centre meeting the objectives of the Station Road Design Framework.

3.128. The following technical analysis considers the development in the context of the policy outlined above, and is cross referred within the separate chapters.

4. Socio-demographic and Population Effects

Introduction

4.1. This chapter describes the socio-demographic character of the anticipated catchment of the scheme and the potential effects of the development on the population affected by the development. It sets out an appraisal of the current baseline of the site and the wider surrounding area by analysing the resident population of High Peak. It then identifies the likely job creation, impact on tourism and tourist facilities and how the development will meet the shopping need. It concludes by identifying the key effects and impacts of the proposals and the form of mitigation measures where necessary.

4.2. Given the nature and scale of the scheme's outputs, it is likely that there will be impacts on a variety of socio-economic indicators within the local and wider area. This chapter assesses, both qualitatively and quantitatively, the potential outcomes of the scheme at both the local and wider geography, and to outline the merits of the proposal and the need for mitigation.

Assessment Methodology

4.3. In order to assess the social and economic impacts of the proposals a two-stage process is necessary. Firstly, the tangible *outputs* of the scheme must be identified. These include matters such as jobs (temporary and permanent) arising from the construction of the development and the completed scheme itself, which includes a sizeable provision of new retail space, tourism (hotel) provision, commercial space (i.e. restaurants, bars and cafes) and improvements to areas of public space. Following this, the *outcomes* of the scheme are identified. A scheme's outcomes could include matters such as a reduction in the level of unemployment, an increase in population or an improvement in wage levels. Whilst outputs clearly have the potential to impact upon socio-economic conditions (the outcomes), the relationship is not always direct and must be qualified.

4.4. The socio economic analysis is set against a baseline of various socio-economic indicators. These are grouped into the following subject areas:

- Population and demographic changes;
- Economic activity;
- Education and skills;
- Deprivation and poverty;
- Crime;
- Tourism activity;

4.5. The above list contains standard socio economic categories upon which to base this assessment. In addition to the above categories, health conditions could also be assessed, however, given that the development proposed is unlikely to impact on the health conditions of the population within the geographic areas, they have not been included within this assessment.

4.6. These have been identified from the most recently available data, including the 2001 Census, the National Online Manpower Information Service (NOMIS) and the Indices of Multiple Deprivation for 2004.

4.7. Sources of information used to provide a quantification of the impact of this proposal include the regeneration strategies and community programmes affecting the High Peak area.

4.8. Following the analysis of the relevant information and baseline conditions, the key implications and impacts of the proposal have been identified. These include:

- Employment generation;
- Skills development and training;
- Construction training opportunities; and
- Meeting regeneration initiatives;

4.9. The socio economic assessment also includes an analysis of the current use of the site in terms of employment. As part of the study an assessment on the direct and indirect socio-economic effects of the creation of new jobs as part of the construction phase has been undertaken. Permanent socio-economic impacts have also been considered both in terms of the direct and indirect creation of jobs as a consequence of the operation of the project. In addition, social impacts (community) arising from the proposals have been considered.

Defining the Geographic Impact Areas

4.10. The socio-economic impacts of the scheme will be largely felt at an immediate local level, although there is likely to be impacts on the wider area given that the site, and the proposals, will serve a wider population than the residents of Buxton itself.

4.11. A variety of geographic levels of analysis have been used. These include the political units of the region (the East Midlands), the county (Derbyshire), the local authority (High Peak) and a geographic catchment of the principal area the scheme will serve, which is defined by the wards which fall within an appropriate drive time of the site.

4.12. The wards identified in the 20 minute drive time from the location of the development are used to define the local impact area and County and local authority areas are used to assess the wider impacts. The following areas have been used as the basis for defining the baseline socio-economic conditions:

- National
- East Midlands Region
- Derbyshire County
- High Peak Borough Council
- High Peak wards within identified drive time catchment
- Buxton Central Ward

4.13. A lower layer output area is a geographical area defined by the Office for National Statistics (ONS). At the most detailed level, the ONS breaks each authority area down into a number of output areas (OAs). The minimum size is 40 resident households and 100 resident persons but the usual size is rather larger at 125 households, in total there are 165,665 OAs in England. These are then built up into a number of larger units known as Super Output Areas (SOAs) which exist at three layers;

- Lower Layer Minimum population 1000; mean 1500. Built from groups of between 4 and 6 OAs

- Middle Layer: Minimum population 5000; mean 7200. Built from groups of Lower Layer SOAs

- Upper Layer: Minimum size likely to be around 25,000 people although these areas have not been defined or used by ONS at present.

4.14. Due to the small size of output areas there is a limited amount of data available at this level for confidentiality reasons, and as a result, lower layer SOAs are used for the majority of fine-grain spatial analysis and are not used at a focus area for the purpose of this research.

4.15. For simplicity the 'core impact area', i.e. the area where the greatest economic effects of the scheme will be experienced has been assessed on the basis of a drive time from the development site. This was identified using Experian database and a drive time of 20 minutes. A map of the Wards falling within the drive time of the development site is included at **Appendix 4.1.**

Assessing Impacts and their Significance

4.16. There is little available Government or industry guidance on how to define the significance of socio-economic impacts. A pragmatic but robust approach to assessing the socio-economic impacts of the Spring Gardens scheme has therefore been used.

4.17. The major socio-economic impacts identified in the subject areas addressed by the baseline study have been categorised as **positive**, **negative** or **neutral** depending on their expected effect. The identified impacts have then been evaluated against four main criteria, drawing on the evaluation criteria typically used in Environmental Impact Assessment. The evaluation criteria is as follows:

- Scale of impact – this includes the magnitude and likely severity of the impact;

- Permanence of the impact – this distinguishes between temporary impacts and those that will continue to have long term effects;

- Importance of the impact – to the affected communities in the area; and

- Compatibility of the impact – with the outcomes sought by relevant policies

4.18. Using these evaluation criteria, each of the major socio-economic impacts has been given an assessment of significance based on the following:

- **Low** – the impact is likely to be of minor significance;

- **Medium** – the impact is likely to be of some significance; or

- **High** – the impact is likely to be of major significance.

4.19. For those socio-economic impacts that are likely to be negative, the EIA will identify where necessary any mitigation measures to control negative effects.

4.20. The aim is to assess both the potential economic and the social conditions and impacts of the proposed development as well as the affect on the baseline of the site.

4.21. The impacts of the development in creating employment opportunities during construction and once the development is operational are described in greater detail.

4.22. Tables 4.1 to 4.9 and 4.12) referred to below are contained at **Appendix 4.2**, whilst certain tables are embedded within the text for ease of reference.

Baseline Conditions

4.23. Information is provided on the extent of the population of the District and the socio-economic characteristics of the population, in particular in relation to employment and the creation of new jobs. For most datasets, the 2001 census data has been used, however, where available mid year estimates have been used in order to represent the most up to date information available.

Population and Demography

National Context

4.24. Nationally within Great Britain there is a total population of 57,103,923 (2001 Census). Broken down the population consists of 27,758,419 males (49%) and 29,345,504 females (51%). The age profile of the national demographic shows that the highest proportions of people are aged between 30 and 44 years old (23%).

Regional Context

4.25. Within the East Midlands region the population figure (2001 Census) was recorded as 4,172,174. The total for the whole of Great Britain was recorded as 57,103,923. Therefore the population of the East Midlands accounts for circa 7% of England's population.

4.26. In 2006 NOMIS produced a 2006 mid year estimate of population in the East Midlands showing a total count of 4,364,200, representing an increase (from 2001) of 192,026 (circa 4%). The 2006 mid year estimate identifies 2,157,300 males equating to 49% and 2,206,900 females equating to 51%. The breakdown of males and females is consistent with the national trend.

4.27. At a regional level, as shown in Table 4.1, like the Great Britain average, the largest demographic cohort are aged 30-44 years old, 22% of the total regions population.

Administrative Area of Derbyshire

4.28. The total population of Derbyshire County Council administrative boundary (at 2006) was 754,100. This comprised of 371,600 males and 382,500 females, equating to 17% of the total East Midlands region in 2006. Of the total population of Derbyshire the largest demographic group represented were those aged 30-44 years. This follows the local, regional and national trend. A majority of the age groups identified are largely consistent with the local, county and national trends, however, it is identified that a county level, the percentage of the population aged 60-74 years is higher than that of the other areas, 15% compared to 13% for High Peak and England and 14% for the local catchment and East Midlands.

Administrative Area of High Peak

4.29. The figures for High Peak at 2001 shows the population of High Peak to be 89,433, of which 45,262 (51%)were female and 44,171 (49%) were male, comparable to the national average. It can also be noted that the 2001 census count is also circa 9% higher than the 1991 Census figure (81,956).

4.30. Within High Peak, like the national and regional averages, those aged 30- 44 years account for the largest population group.

Wards within Drive Time (local impact area)

4.31. Within the High Peak Local Authority boundary there are 28 wards, however, only 12 wards fall within the local impact area.

4.32. The total population of the 12 wards is 40,711 (2001 Census) of which 20,122 are males (49%) and 20,589 (51%) are females, similar to the national, regional and county average. Across the board, the percentage of females is consistently higher than that of males.

4.33. Table 4.2 shows a break down of each of the wards within the local impact area. The wards with the highest and lowest population figures are Chapel West and Barms with population figures of 4368 and 1928 respectively.

4.34. Buxton Central, the ward in which the development is identified has a population of 3,899, made up of 1,930 males (49%) and 1,969 females (51%).

4.35. As per national, regional and the authority trends, those aged 30-44 years represent the largest proportion of the demographic.

4.36. Table 4.1 and 4.3 demonstrates, there is no significant differences between the population profiles at all tiers. However, when looking at the local impact area, those aged 15- 29 years have less representation (15%) and there is a 4% decrease on the national average (19%), this therefore shows that there are circa 27% less 15-29 year olds within the local impact area than in Great Britain**.**

4.37. The age profile of Buxton Central has an above average number of people aged 79+ (10% in comparison to 8% nationally). This therefore demonstrates that proportionally there are significantly more older persons (20%) within Buxton Central than in Great Britain.

4.38. Whilst there is a relatively middle aged population structure this is not reflected in the percentage of the population who are of working age. Of the local impact area just 60% are of working age, in comparison to 62% for the total High Peak authority the region and nationally. This demonstrates that the local impact area has 3% fewer working age persons than the authority area and wider region.

4.39. However, as is set out in more detail below, of those of working age, 81% (of both the local impact area and wider authority area) are economically active, whilst the national average is 76%. This therefore shows that proportionally there are 7% more economically active persons above the national average as a whole.

Demographic Change

4.40. This section compares population figures of the above and demonstrates how it has changed from 1991.

4.41. Within the Derbyshire County there has been an increase in population from 1991 to 2001. At 1991 the population stood at 688,972 and increased to 754,100 at 2006 (mid year estimate), an increase of circa 8%.

4.42. Table 4.4 illustrates the increase in the population from the 1991 Census count to 2001 within the local impact area and the wards identified within the drivetime, showing an increase from 33,034 to 40,711; a difference of 7677 people. It should be noted however, that it is not possible to make robust comparisons of the wards to identify the increase or decrease by ward as the boundaries have changes and new wards have been added.

Social Grade

4.43. Information provided from the Census illustrates the breakdown of social grades using CACI ACORN classification. The classifications are:

Table 4.5 – Social Grades

Social grade	Social status	Occupation
A	Upper middle class	Higher managerial, administrative or professional
B	Middle class	Intermediate managerial, administrative or professional
C1	Lower middle class	Supervisory or clerical, junior managerial, administrative or professional
C2	Skilled working class	Skilled manual workers
D	Working class	Semi and unskilled manual workers
E	Those at lowest level of subsistence	State pensioners or widows (no other earner), casual or lowest grade workers

Source: Census, 2001

4.44. From the Census data, categories A and B are merged to form one category AB.

4.45. The most represented social grade of all the geographical catchment areas is group C1 who are defined to be 'Lower Middle Class'. Of all the geographical catchments Buxton Central has the highest representation: in the order of 35% of the population. This is 7% higher than the local impact area and East Midlands, 6% higher than High Peak and 5% higher than Great Britain. Proportionally, this therefore demonstrates that in fact Buxton Central has 20% more Lower Middle Class than the local impact area and East Midlands region, 17% more than High Peak overall and circa 17% more than Great Britain on average.

4.46. In comparison, overall the social grade with the lowest representation is group E who are defined to be 'On state benefit, unemployed, lowest grade workers'. Only 5% of Buxton Central fall within this social grade. This is significantly lower than the other geographical catchment areas; 12% lower than the local impact area, 11% lower than East Midlands region and Great Britain and 9% lower than High Peak. Buxton Central therefore has 71% fewer people classified with Group E than the local impact area, 57% less than the East Midlands and Great Britain and 53% less than High Peak.

4.47. It can also be noted that in the Buxton Central the same average number of people classified within Group AB (22%) defined as 'Higher managerial, intermediate managerial, administrative or professional. '

Rates of Economic Activity and Inactivity

4.48. This section considers the current employment and unemployment situation within the local Impact area, and provides comparisons against the wider economic picture.

Employment

4.49. Table 4.6 shows the economic activity of the twelve wards within the 20 minute drive time catchment. Within the impact area the proportion of people who were economically active of working age at 2001 stood at 81%, greater than the national average (76%), although below the County average of 83%. Proportionally, this demonstrates that comparatively, there are

circa 6% more economically active people in the local impact area than nationally but circa 1% fewer than at county level.

4.50. It is of note that the level of economically active females in the local impact area is lower than the county average, 36% compared to 40% respectively. Proportionally, this illustrates that the number of economically active women is 11% lower than the county average.

4.51. From this table it can be seen that Burbage, Chapel West and Whaley Bridge have the highest proportion of persons who are economically active, with 83% of the total working age population (persons aged 16-64) in employment. Stonebench has the lowest percentage of people who are economically active with an average percentage of just 76%.

4.52. Within the Buxton Central ward, 61% of the population (2370) is of working age (16-64 years for males and 16-59 for females) of which 1293 are male and 1077 are female. This is 1% lower than the average for High Peak, equal to the average for Derbyshire and 1% lower than the East Midlands and Great Britain average. This in fact demonstrates that within Buxton Central circa 2% less of the population is of working age than in High Peak, the East Midlands and Great Britain.

4.53. Of the total working age population (61%) 82% are economically active, 1101 males and 844 females. In comparison, this is 1% higher than the High Peak average (81%), 1% lower than the Derbyshire average (83%), 2% higher than the East Midlands average (80%) and 6% higher than the Great Britain average (76%). Proportionally, therefore, the number of economically active people in the ward is in fact 1% higher than in High Peak, 1% lower than Derbyshire, circa 2% higher than the East Midlands average and circa 7% more people in Buxton Central are economically active in comparison to the national average.

4.54. Table 4.7A and 4.7B provides a breakdown of the different occupation types represented within the impact area, High Peak and Great Britain. The occupations are classified according to the Standard Occupation Classification 2000- as used by Nomis.

4.55. Within the local impact area the highest proportion (14%) of people are employed as ‘mangers and senior officials’ or in “elementary occupations”. Whilst the percentage of managers and senior officials is one of the most represented occupations, the level is lower than the authority, region and national average (15%) and demonstrates that circa 7% less people are employed in “managerial and senior official” roles and “elementary occupations” than within the wider authority area, region and nationally. This partly due to the fact that the second most represented occupation are “elementary occupations” which is above the national average (12%) and demonstrates that 14% more people are employed in these roles than at the national level.

4.56. Within Buxton Central the highest representation is again among those who are employed as managerial and senior (17%). This is 2% higher than the High Peak, East Midlands and GB average and 4% higher than the Derbyshire average, i.e. 12% more people are employed in managerial and senior positions when compared to the wider authority area, region and national average and 24% higher than the Derbyshire average.

4.57. In comparison, it is also shown that the lowest percentage of people in Buxton Central are employed in Sales and Customer Service (6%). This percentage is equal to the High Peak average and 2% lower than the Derbyshire, East Midlands and Great Britain average (8%). Comparatively, 33% less people in Buxton Central are employed in Sales and Customer service than the national level.

4.58. The number of economically inactive people is 19% in the local impact area i.e. they are retired, students or stay at home parents. This population is the same as the High Peak authority area but 1% lower than regionally and 5% lower than nationally. There is a difference of 5% less inactive people when compared with the region and 26% less inactive people in comparison to the national average.

4.59. However, of those economically inactive, 11% are female (above the county average of 9%) there are 18% more economically inactive females in Buxton Central when compared to the number at county level. This indicates that a number of women stay at home to look after the family.

Unemployment

4.60. Table 4.8 sets out the number of persons in each ward at February 2007 claiming benefits and income support and shows a comparison between the High Peak, Derbyshire County, East Midlands and Great Britain averages.

4.61. Of the local impact area, 11% of the total working age population are claiming benefits. The percentages are a combined total of all the Department of Work and Pensions (DWP) benefits claimed. These include; job seekers allowance, incapacity benefits, lone parents, carers, disabled persons and bereaved persons benefits. Whilst this level is equal to the High Peak average, it is 2% lower than the regional average (13%), 3% lower than the county average (14%) and 4% lower than the national level. Proportionally, this therefore shows that 18% less people are claiming benefits than at the regional level, 27% fewer people than compared to the county level and 36% less people claiming benefits than the national level.

4.62. Looking more closely at the local impact area, the ward claiming the most benefit is Stone Bench with 19% of the total population claiming benefits. Blackbrook has the lowest percentage of persons claiming benefits at just 6%.

4.63. As illustrated, the percentage of the working age population claiming benefits in Buxton Central is 15% of the total working age population. This is 4% higher than the High Peak average (11%), 2% higher than the Derbyshire and East Midlands average (13%) but equal to the Great Britain average (15%). It is the second highest claimant group in the catchment. Looking at these figures proportionally, it is demonstrated the number of people claiming benefits in Buxton central is 26% higher than the High Peak average and 7% higher than the East Midlands average.

Local Income

4.64. The NOMIS county profile shows that at 2007 the average weekly gross pay was £448. This is higher than the regional average of £429 but marginally lower than the national average of £459. The gender breakdown demonstrates that men earn £543, quite significantly higher than both the regional average of £475 and national average of £500, whilst women earn £376 (higher than the regional average £366 but lower than the national average of £394).

Education and Skills

4.65. This section highlights the percentage of the population who have achieved qualifications. Table 4.9 shows the levels of the qualifications achieved by the population in High Peak authority, East Midlands and a national comparison. No data is available at a ward level and therefore the combined qualifications achieved by the wards within the local impact area is not available. For clarification:

- NVQ 1 equivalent: e.g. fewer than 5 GCSEs at grades A-C, foundation GNVQ, NVQ 1, intermediate 1 national qualification (Scotland) or equivalent
- NVQ 2 equivalent: e.g. 5 or more GCSEs at grades A-C, intermediate GNVQ, NVQ 2, intermediate 2 national qualification (Scotland) or equivalent
- NVQ 3 equivalent: e.g. 2 or more A levels, advanced GNVQ, NVQ 3, 2 or more higher or advanced higher national qualifications (Scotland) or equivalent
- NVQ 4 equivalent and above: e.g. HND, Degree and Higher Degree level qualifications or

equivalent

4.66. Within the High Peak authority the percentage of people who were recorded as having gained no qualifications in 2006 was 12% (of all people aged 16-74). This is lower than the regional and national level of 14% and obviously a positive attribute that few adults have not achieved any qualifications. This shows that 16% less people than at regional and national level have gained no qualifications.

4.67. This trend is reflected in the number of qualifications that have been gained within High Peak with the authority achieving higher than regional and national averages for all levels of qualifications.

4.68. It is demonstrated that the working age population is relatively well skilled and given this, it is less surprising that the level of economically active persons is higher than average or that management and senior roles account for 14% of all occupations.

Deprivation and Poverty

4.69. According to the 2007 Index of Multiple Deprivation (IMD), of the 59 SOAs in High Peak, 12 out of the 59 SOAs lay within the 30% most deprived nationally, two of which area included within the local impact area.

4.70. The Buxton Central ward is split into three SOAs. It has been identified that the SOA in which Spring Gardens is located is a particularly deprived area in comparison with the rest of the High Peak authority area, ranking 9642 out of 32,482. This places the SOA within the 30% most deprived in the UK.

4.71. Similarly, the ward of Stone Bench, which falls within the drivetime catchment, is also split into three separate SOAs. One of the SOAs is identified as being particularly deprived a falls within the 20% most deprived in the UK, ranking 3994 out of 32,482.

4.72. However, overall, according to the latest 2007 IMD, published in December 2007, High Peak is ranked 213th out of 354 local authorities in the UK. This places it in the 40% least deprived authority's areas in England. Therefore whilst Buxton Central and Stone Bench show signs of severe deprivations, they are small pockets of deprivation.

Crime

4.73. The Table below illustrates the crime statistics for High Peak. Information for the local impact area is not available. The data has been collated from the Crime and Disorder Reduction Partnership (CDRP). The figures are per 1,000 of the population. Whilst this information doe not show the crime levels of the local impact area or Buxton Central the statistics which are available will provide an indication into the crime rate within the local impact area.

Table 4.10: Crime Levels within High Peak

Type of Crime	High Peak	England Average	Proportional difference
Violence against the person	16.2	16.7	3% Less
Robbery offences	0.4	1.2	67% Less
Theft of a motor vehicle	1.7	2.9	41% Less
Sexual Offences	0.8	0.9	11% less
Burglary of dwellings	2.9	4.3	33% Less
Theft from a vehicle	5.2	7.6	31% Less

Source: Crime and Disorder Reduction Partnership (CDRP)

4.74. As can be seen from the Table, all of the recorded figures for the 6 different types of crime are below the England average and therefore the figure demonstrates that High Peak is a generally safe place to live.

Tourism

4.75. Buxton is a historic spa town and attracts a number of tourists. Tourism is important to the local economy. In 2004 BE Group undertook a Tourism Development Study on behalf of the Council. The aim of the project was:

> *"To identify gaps in tourism attractions on offer in the town with a view to ensuring that new and future developments complement and enhance the existing offer, as well as one another, and avoid duplication.*
>
> *To identify links and collective marketing opportunities.*
>
> *To recommend the holistic development of the built and cultural heritage of Buxton whereby each potential development has a unique place in the town and can make a significant contribution to the tourism market.*
>
> *To provide information and analysis that will help underpin future development of funding bids for heritage, tourism, interpretation and cultural projects in Buxton".*

4.76. Visitor numbers are not available for Buxton alone or any of the other surrounding wards included in the local impact area, however, as one of the main attractions in High Peak, a great proportion of tourism is focussed towards the town. The Study identified that in 2000 three million visitors came to the Borough, of which 2.6 million were day visitors and 0.6 million were overnight visitors. The combined expenditure was £131 million.

4.77. Of the 0.6 million overnight visitors, the assessment estimates that 24% stayed with friends and relatives and of which 76% stayed in commercial accommodation (the average overnight stay in the Borough was calculated at two nights). The Study estimated that 64% of the bed spaces in the Peak District were located in Buxton.

Table 4.11: Overnight Trips Using Commercial Accommodation

Accommodation Type	Visitor Numbers	Percent
Hotel	67,000	15
B&B/ Guesthouse	99,000	22
Self Catering	189,000	42
Caravan/ Tent Pitches	56,000	13
Static Caravans	18,000	4
Group Accommodation	10,000	2
Other Accommodation	7,000	2

Source: Buxton Tourism Development Study (December 2004)

4.78. The table above demonstrates a generally low percentage of visitors using hotel accommodation. As identified in the Tourism Study, this is partly due to the cost of hotel accommodation but also to the lack of hotels within Buxton. The audit undertaken identified that there are 11 hotels within High Peak, mostly in or close to Buxton. Table 4.12 lists the hotels, their star ratings, number of bedrooms and bed spaces. Whilst some information is not available for all the hotels, the table indicate that there are 678 bed spaces.

4.79. Hotel occupancy levels in the Borough have steadily increased in the later part of the period analysed in the Study (i.e. 1998 to 2003) as can be seen in the table set out below. In 2003, hotels in the Borough were using 75% capacity between July and September and 69% between April and June. April to the end of September is identified as the main tourist

season. The lowest occupancy was recorded in January to March with just 44% occupancy. The overall average occupancy rate in 2003 was 59%. The Table below sets out the average room occupancy of accommodation in High Peak.

Table 4.13: High Peak Average room Occupancy 1998-2003

Year	Jan- Mar	Apr- June	July- Sept	Oct- Dec	Annual Average
1998	32	55	65	41	48
1999	33	53	62	41	48
2000	34	53	60	44	48
2001	30	47	68	45	48
2002	42	63	74	53	58
2003	44	69	75	47	59
% Increase	**38%**	**25%**	**15%**	**15%**	**23%**

Source: Buxton Tourism Development study (December 2004)

4.80. As shown in the table above the overall level of over night stays has increased on average by 23% over the six years. The largest increase was seen in the number of visitors staying between January and March which has risen by 38%. This demonstrates that the gap is closing on the seasonal trend of tourism in Buxton.

4.81. Whilst overnight visitors generated the greatest amount of spend (56% of expenditure totalling £73 million) they only accounted for 18% of visitors, and this is put down in the Study to the cost of accommodation.

4.82. The proportion of overnight stays in Buxton made in hotels is 15% which equates to £10.95m of the total overnight expenditure (assuming that the expenditure of each overnight visitor is the same). The total annual number of visitor nights in hotels is 67,000 which when divided by the total spend represents a hotel visitor spend of £163 per night across all areas of visitor spend.

Table 4.14: Proportion of Visitor Spending

Area of Spend	Amount	Proportion (%)
Accommodation	£22,400,000	17
Retail	£29,200,000	22
Catering	£42,400,000	33
Entertainment	£15,700,000	12
Transport	£21,200,000	16
Total	**£130,900,000**	**100%**

Source: Buxton Tourism Development study (December 2004)

4.83. Table 4.14, set out above, demonstrates where visitors to High Peak spend a majority of their money. As can be seen 33% of visitor spending is in the catering sector. Retailing accounts for the second greatest percentage of spending accounting for 22%.

Retailing

4.84. The town centre is predominantly comprised of restaurants, services and comparison goods shops. Other convenience shops in Lower Buxton are Aldi, Iceland, Co-Op, Waitrose, four bakers and one independent grocer.

4.85. Buxton is identified as a Town Centre within the High Peak Borough and has no other Town Centres within its catchment. It should be the main shopping destination for persons within the catchment.

4.86. The nearest directly comparable store to the foodstore proposed in the scheme is the Morrisons situated outside of the town centre, which accounts for a large amount of spend outside of the town centre boundary.

4.87. The Retail Capacity Study for the High Peak Central Area of High Peak Borough (White Young Green 2003) demonstrates that the High Peak Central Area has retained a high proportion of main convenience expenditure, but in Buxton a large proportion of this expenditure takes place outside of the town centre. This is demonstrated in the Retail Assessment which shows that within the Buxton Area 52.7% of people do not carry out their main food shop in Buxton Town Centre. Furthermore, 25% go outside of the town centre for top-up shopping. In terms of non-food shopping only 28% of persons used Buxton Town Centre.

Baseline Summary

4.88. The key baseline conditions to note are:

- The population of Buxton Central is relatively old with the most represented age cohort being 30-44 and a high proportion of persons aged 79+;
- Levels of economically active persons within Buxton Central is high although the number of economically active women is low;
- The number of persons claiming benefits is low;
- The population of High Peak is well educated, many to degree level;
- Although unemployment is low, the SOA within which Spring Gardens Shopping Centre is located within is listed within the top 30% deprived in England;
- Crime levels are significantly lower than average;
- Buxton has a strong tourist market although there is a lack of affordable hotel accommodation; and
- A large proportion of the resident population of Buxton's convenience retail expenditure currently takes place outside the town centre.

Regeneration Initiatives Affecting Buxton

4.89. Relevant national, regional and local planning policy relating to regeneration is detailed at Chapter 3 of this report. Of most local significance is the inclusion of the development site within a designated Regeneration Area. Within the Regeneration Areas, the local authority will support schemes for comprehensive development to include a variety of commercial uses.

4.90. In addition to the relevant planning policy context outlined in Chapter 3 there are various other regeneration initiatives, bodies or redevelopment schemes of relevance.

Derbyshire Dales and High Peak Community Plan (2006-2009)

4.91. The Community Plan for both authorities sets out the vision, priorities and actions to improve the quality of life in Derbyshire Dales and High Peak. Key issues for the area include;

- Affordable housing for local people;
- Fading markets towns and rural deprivation;
- A high quality natural and built environment;
- Access to services and information;
- Opportunities for young people including facilities for leisure, recreation and cultural and

training opportunities;

- Maintaining safe, healthy sustainable communities.

The Buxton Partnership

4.92. Buxton Partnership has been established for a number of years, with a mission *'to make Buxton a better place to live, work and play'*. Their vision is to develop and market Buxton as a thriving Spa town, with a lively tradition of festivals, music and culture, at the centre of the Peak District; which attracts both staying and day visitors and maximises the opportunity for investment in the town. The Buxton Partnership is an organisation with approximately 120 members made up of local businesses, High Peak Borough Council, local Councillors and other interested bodies who wish to become actively involved in the future development of the town.

Buxton Crescent Redevelopment

4.93. The project is being led by High Peak Borough Council and Derbyshire County Council who, in 2003, appointed Project Developers, Trevor Osborne Property Group Limited and CP Holdings Ltd to carry out the work. The total cost to develop the project is £32.4 million.

4.94. The Buxton Crescent and Thermal Spa Project will provide a 79 bedroom spa hotel - the first genuine spa hotel in the UK in over 100 years; 8 specialist retail units; refurbishment of The Pump Room as a tea room giving free access for the public to "take the waters"; and a brand new visitor interpretation centre with integrated tourist information facilities for visitors to the Peak District.

4.95. Planning permission for the scheme was granted in June 2006. At present, work on site has not yet commenced but ground investigations are expected to commence in the imminent future.

Summary

4.96. The range of national and regional policy guidance promotes the physical and economic regeneration of land through mixed use development to maximise the sustainability and viability of development through linked trips and complimentary uses**.** The local specific Regeneration Area designation specifically directs mixed use development to the application site for a variety of commercial uses.

Identification and Evaluation of Key Impacts

Employment Generation

<u>Identification of Employment Outputs</u>

Direct Employment

4.97. A variety of uses are proposed for the site including a 6,174 sqm Sainsbury's food store, 82 bedroomed Premier Inn and four additional retail units totalling 1,556 sqm, all of which will generate significant levels of employment.

4.98. The foodstore will provide in the region of 250 jobs (full time and part time) and the hotel will provide 45 jobs (30 full time and 15 part time). It is anticipated that the four additional commercial units will create in the region of 25 additional jobs. There will be additional employment provided within the office content of the scheme, in the region of 20-40 jobs.

4.99. The jobs created will cover a range of employment grades, from managerial to unskilled work. This is covered in more detail below.

Indirect and Induced Employment

4.100. Additional indirect employment opportunities would be created, resultant from expenditure on goods and services, together with induced employment generated from enhanced income and expenditure flows.

4.101. Indirect jobs would include maintenance and cleaning contractors, employment agencies, training firms and local suppliers. Induced jobs may include restaurants, bars, leisure activities, etc.

4.102. These additional impacts are termed as the 'additionality' of a project or development. Additionality is defined as the extent to which something happens as a result of an intervention that would not have occurred in the absence of that intervention.

4.103. In assessing potential additionality associated with the application proposals, regard is had to recent good practice guidance produced by English Partnerships entitled: Additionality Guide: A Standard Approach to Assessing the Additional Impact of Projects, published in September 2004, herein referred to as 'the Additionality Report'.

4.104. The Additionality Report suggests using a combined indirect and induced employment multiplier in order to assess local area impacts, which is dependant upon the strength of local linkages, i.e. the degree to which the proposed development has supply chain linkages with other firms in the local or regional area. The options are as follows:

Level	Description	Combined Multiplier
Low	Limited local supply linkages and induced or income effects	1.05
Medium	Average linkages. The majority of projects will be in this category	1.1
High	Strong local supply linkages and income or induced effects	1.15

4.105. The proposed development is considered on the basis of having high linkages and, as such, the combined induced and indirect employment multiplier of 1.1 is applied to the likely direct employment figures as calculated in the previous section:

Direct employment	Combined multiplier	Total direct, indirect and induced jobs	Indirect and induced jobs
340-360	1.15	391-414	51-54

4.106. As can be seen the total indirect / induced jobs resulting from the proposed development is calculated to be between 51 and 54. Typically, indirect / induced jobs are associated with existing local firms and companies with established operations in the area. However, this report does not make this assumption, and in order to properly assess total employment impacts, the above indirect and induced jobs are factored into the calculations.

Construction Employment

4.107. The construction of the proposed buildings will create a significant level of temporary construction employment during a period of 30 months whilst the scheme is being built.

4.108. In order to quantify the likely number of construction jobs resulting from the development,

2004 Annual Business Inquiry (ABI) data has been used to calculate average turnover per employee within the construction industry. In 2004, the total turnover for the UK construction industry was £130,064m. The total number of people employed (average during the year) was 1,347,000. The average turnover per employee across the UK construction sector in 2004 was therefore £117,345. For the purposes of this calculation a figure of £125,000 has been used to take into account inflation since 2004.

4.109. The scheme's quantity surveyors estimate that the scheme will have a construction period of 30 months. As a result 200 full time equivalent jobs are likely to be created for the duration of the construction period.

4.110. It is envisaged that a significant proportion of employees involved in the construction work would be drawn from the local area.

Types of Employment

4.111. Approximately 72% of the permanent jobs created will be in the Sainsbury's store, 13% in the hotel with the remainder split between the office content and the other retail units.

4.112. Sainsbury's estimated that between 20-25% of jobs created will be of supervisory and managerial roles and circa 75% of jobs created will be on the shop floor. This indicates therefore that circa 60 supervisory and managerial roles and 190 shop floor jobs will be created. It is also Sainsbury's policy to recruit from all age groups with training opportunities at all levels, from shop floor training towards managerial roles.

4.113. The jobs created in the hotel and retail aspects of the scheme, are likely to contain a good mix of part-time and full-time jobs. The flexible employment patterns are of great importance in addressing the currently low rate of economic activity amongst female residents. At present, the lack of such opportunities in the local area is restraining certain groups who find it difficult to take a full-time position (such as the semi-retired or single mothers). The enhanced employment flexibility which the Spring Gardens scheme could provide may therefore have a beneficial impact on the economic activity rate, and in particular amongst groups who are socially and economically excluded at present.

4.114. A further different type of job creation will result from the open market office element of the scheme.

4.115. Additional indirect employment opportunities would be created, resultant from expenditure on goods and services, together with induced employment generated from enhanced income and expenditure flows. Indirect jobs would include maintenance and cleaning contractors, employment agencies, training firms and local suppliers. Induced jobs may include restaurants, bars, leisure activities, etc.

Skills, Development and Training

4.116. Sainsbury's anticipate the creation of 250 jobs. It is company policy to recruit 80% of new staff from the local employment market. In addition, local buildings firms and contractors will also be sourced for construction works.

4.117. Premier Inn offers an apprenticeship programme where employees can train to achieve NVQ Level 1 and Level 2, these are offered to develop culinary skills and management training.

Retail

4.118. The retail units will enable a greater amount of spending to be retained within the immediate vicinity of Buxton. Given the increase in the employment opportunities that have already been mentioned, the level of expenditure should also be higher. If the retail units are owned and operated by local companies there will be additional positive impacts on the local economy

4.119. It is widely recognised that the retail sector has a positive impact on the regeneration of a place. In a report titled '*The Contribution of the Retail Sector- To the Economy, Employment and Regeneration'* the contribution that retailing makes to the economy is highlighted, and in particular the full extent that retailing contributes to regeneration and employment. The Report is based on the findings of two surveys by Ipsos MORI and Experian, providing qualitative (MORI) and quantitative (Experian) evidence. The findings show that retail has a major role in employment in the UK and accounts for circa 10% of the workforce. Retail is often associated with providing part time jobs, popular with workers seeking flexibility. The statistics set out in the report show that 2.95 million people were employed in the retail sector, of which 1.89 million were women. Similarly, the majority of retail workers were employed on a part time basis (1.75 million). The increase in jobs within Spring Gardens will provide opportunities for those people of working age but who are unable to work (either due to being single/ stay at home parents of socially excluded).

Increasing Tourism

4.120. The hotel accommodation proposed will increase the stock of tourist accommodation in the local area and therefore likely to generate an increase in the number of overnight visitors to the area. Given that the area is an established tourist destination and there are a number of visitor attractions in the immediate and wider vicinity (such as the Peak District National Park), it is likely that the accommodation would be well-used.

4.121. From the Buxton Tourism Development Study it is identified that there was a shortfall in the number of hotels and that the existing hotels were primarily high quality (and expensive). The development of the Premier Inn would introduce a 'middle level' hotel facility which would be more economically accessible than the existing hotel stock broadening the range of hotel accommodation.

4.122. The scheme to redevelop the Crescent, as detailed in Chapter 2, will include circa 80 hotel rooms as part of the Spa facility, though these will be entirely different in nature and expense to the accommodation within this development scheme.

4.123. The visitors from self-catering accommodation will however inevitably generate additional spending in the local economy which is separate from and additional to the expenditure generated by the additional jobs in the area. Given that the scheme includes the development of a foodstore, the amount of expenditure on food and drink by tourists will increase. Currently, 55% of expenditure by staying visitors in High Peak is used to purchase food and drink and go shopping.

4.124. Hotels cater for 15% of all overnight visitors to Buxton as demonstrated above, which represents 67,000 visitors. The total overnight tourist spend equates to £73m therefore the average hotel visitor spend per day is £163 per night stayed, the number of additional visitor nights will be approximately 17,650 (based on an average occupancy rate of 59%) and total additional visitor spend as a result of the development would therefore equate to £2.9million. However, it is unclear how many of these visitor nights will be displaced from other accommodation in the local area.

4.125. Applying the proportion of expenditure that is used to purchase food and drink or on visitor attractions (45%), equates to £1.3m per annum on these sectors plus an additional £0.6m (22%) in local shops.

4.126. A proportion of this expenditure will support the employment in shops and services within the proposed scheme; a large amount will be accrued by businesses elsewhere in the Borough. However, given that this expenditure is likely to be spread across a number of different industries it is difficult to estimate the number of additional jobs that it will support.

4.127. The enhanced local tourism that the development will offer has the potential to bring both qualitative and quantitative benefits to the local economy. The additional visitor numbers will create jobs and raise local incomes.

Meeting Regeneration Initiatives

4.128. The scheme will directly meet the objectives of the Regeneration Area designation (High Peak Local Plan) to provide a mix of town centre uses to physically and economically regenerate the site and promote sustainable links with the existing town centre.

4.129. The mix of uses specifically meets the identified retail need to promote sustainable patterns of retail. The hotel provides quality affordable overnight accommodation for which there is a demonstrable need in Buxton, whilst the car park meets a specific aspiration of the site specific regeneration policy.

4.130. The scheme meets the objectives of the Regional Economic Strategy to meet the employment needs of people with few qualifications and to enable the development higher level skills, whilst also providing a number of jobs in higher management positions.

4.131. The scheme specifically addresses the objectives of the Station Road Design Framework SPD which outlines the key objectives for the site to:

- *"Realise the full potential of the area as the gateway to the town centre;*
- *Promote and secure the sustainable design of the area;*
- *Address the negative impacts of Station Road;*
- *Reveal and integrate the River Wye (whilst addressing flood risk considerations;*
- *Improve pedestrian movement and connectivity to key destinations;*
- *Establish a vibrant mix of uses across the area; and*
- *Secure high quality, place specific development"*

Assessing the Significance of Socio-Economic Impacts

4.132. A wide range of impacts have been identified and the socio-economic impacts are categorised as **positive, negative** or **neutral** depending their expected effect.

4.133. These have been tested against the criteria set out below. Table 4.15 summarises the assessment of significance for each of the identified impacts.

- **Scale of the impact –** this includes the magnitude and likely severity of the impact;
- **Permanence of the impact –** this distinguishes between temporary impacts and those that will continue to have an effect in the long run;
- **Importance of the impact –** to the affected communities in the core impact area; and
- **Compatibility of the impact –** with the outcomes sought by relevant regeneration and neighbourhood renewal policies.

4.134. The socio – economic impacts are given an assessment of significance based on the following three point scale below:

- **Low –** the impact is likely to be of fairly minor significance;
- **Medium –** the impact is likely to be of some significance; and

- **High** – the impact is likely to be of major significance.

Table 4.15: Significance of Impacts

Impact	Scale	Permanence	Importance	Compatibility
Increased Number of Jobs	High	Medium/High	High	High
Variety of types of employment	Medium	High	Medium	High
Increased Retail Provision	High	High	Medium	High
Increased number of tourist facilities	Medium	High	Medium	High
Meeting Regeneration Initiatives	High	High	High	High

Increased Number of Jobs

4.135. The expected increase of circa 320 jobs from the retail and hotel, the 20 and 40 in the office accommodation plus in excess of 50 induced jobs will have a highly positive impact on the area as it will enhance employment opportunities for the local population. The 30 month construction period will provide a further 200 temporary jobs.

4.136. This will give greater to access to employment in the area for the local population. The jobs created will be specifically targeted at the immediately local population, which will benefit the population of the local Buxton Central ward, which as demonstrated above has a rate of unemployment which is currently 26% higher than the average for High Peak.

4.137. As a result, the impact of the number of jobs is high in terms of scale and importance. The effect is assessed to have medium/high permanence given that the construction jobs will not be permanent. The scale of the jobs created within the proposed development will however have an overall positive impact on the local population through a mix of uses which are in accordance with the regeneration aspirations for the area and more specifically the site.

Variety of Types of Employment

4.138. A range of types of employment is likely to be accommodated within the development. The foodstore will create circa 190 shop floor jobs within the foodstore plus 60 supervisory and managerial roles. Sainsbury's will also provide training opportunities at all levels. The scheme will also generate skilled jobs within the open market office element of the scheme.

4.139. The hotel and non food retail units will provide 45 and 25 further full and part time jobs respectively. The hotel operator (Premier Inn) is also committed to staff training.

4.140. Whilst the number of persons from Buxton employed in managerial roles is high, most of these commute to Manchester or Sheffield, leaving behind a large number of low income earners. The supervisory and managerial roles created will be vital in retaining a proportion of the higher social grade employees and to increase wages in the area.

4.141. The greater number of shop floor and hotel jobs will meet the skill levels and needs of those sectors of the local population in need of employment. The employment of local people will assist in increasing the rate of employment in the immediately local area, which is currently lower than the regional average. In addition to meeting specific skill levels, these jobs will provide the flexible hours to accommodate the needs of those who are unable to work full time or who do not wish to work full time,. By way of example, there are currently 18% more economically inactive females of a working age in the Buxton Central ward than the national

average, and 33% less employees in sales and customer services. The type of employment provided by the scheme will specifically address these deficiencies.

4.142. In addition to the full time employment, the 30 month construction period will provide a sustained period of employment which will also be sourced locally, supporting local contractors.

4.143. The increase in employee numbers in the town centre throughout the construction period and operation of the development will not only increase the income of the local population generally, it will increase the availability of the employee's expenditure to support the new facilities and also facilities in the existing town centre.

4.144. The types of employment created will therefore have a positive effect. The impact of the types of jobs created is likely to be medium in terms of scale and importance. The effect is likely to be of medium permanence as the initial construction jobs shall only be temporary but there are a large number of permanent jobs being created.

Increased Retail Provision

4.145. The increased retail offer within Buxton may have a positive impact through more sustainable patterns of retail travel by diverting trade back within Buxton's town centre's boundary.

4.146. The increased trade to the town centre will encourage linked trips and spin off benefits to the rest of the town centre enhancing the vitality and viability of the existing centre. The A3/A4 uses proposed will operate into the evening promoting active use of the site with the associated benefits relating to the evening economy, vitality and safety.

Increased Tourist Facilities

4.147. The addition of the hotel facility will have positive impacts on Buxton. Based on current average occupancy rates, the new hotel will accommodate circa 17,650 new overnight visitors in Buxton. The scale of the impact is likely to be medium given that the effects from the addition of a new hotel will not be felt by the entire community. It will however bring additional expenditure into the town centre in the region of £2.9m per annum. Some of this will be the accommodation cost at the new hotel, and other expenditure on food and drink within the scheme, however the residual will support entertainment and retail facilities in the rest of the town centre.

Mitigation Measures

4.148. The development proposal will have a highly positive impact on the local economy through the creation of new jobs and though increasing available expenditure of the local employees and population as well as increase visitor numbers.

4.149. No measures are therefore required to mitigate negative socio-economic effects of the development. However, for the employment benefits, from the construction phase through to operation, to have maximum benefit for the local area, it should be ensured, through a local employment charter, that where possible jobs are locally sourced. .

References and Glossaries

Neighbourhood Statistics Website; http://www.statistics.gov.uk/census/

Official Labour Market Statistics; https://www.nomisweb.co.uk

East Midlands Regional Spatial Strategy (2006-2020)

Crime and Disorder reduction Partnership;

http://www.crimereduction.homeoffice.gov.uk/partnerships2.htm

Buxton Tourism Development Study (BE Group) (December 2004)

Appendices

4.1 Map of Wards

4.2 Economic Impact Tables

- Table 4.1 – Population and Age Structure
- Table 4.2 – Total population of the wards within the Blyth Valley Authority Boundary
- Table 4.3 – Age Structure of Catchment Wards
- Table 4.4 – 1991 Population Data
- Table 4.5 – Social Grade
- Table 4.6 – Employment Figures by Ward
- Table 4.7a – Types of Employment
- Table 4.7b – Types of Employment within the catchment
- Table 4.8 – Percentage of Population Claiming Benefits
- Table 4.9 – Level of Education Attainment & Level of Qualification Achieved

5. Landscape, Visual, and Built Heritage Impacts

Introduction

5.1. This section of the ES describes the existing landscape and visual characteristics of the site and its environs, the likely landscape and visual impacts of the development proposals associated with the proposed development, and identifies measures to aid its positive integration within the surrounding urban landscape of Buxton. In the light of the importance of Buxton's special historic and architectural character and the proximity of the site to parts of the Buxton Conservation Areas and some listed buildings, this section also addresses the visual characteristics of the site and impacts of the development in the context of the its proximity to these built heritage features and potential to affect their setting.

5.2. Landscape and visual impact assessments are separate, although linked procedures.

5.3. Landscape impacts derive from changes in the physical landscape, which may give rise to changes in its character and how this is experienced. Hence appraisal of landscape effect is concerned with:

- direct effects on specific landscape elements;
- more subtle effects on the overall pattern of elements that give rise to landscape character and local distinctiveness

5.4. Visual impacts, including those on built heritage features, relate to the changes that arise in the composition of available views as a result of changes to the landscape elements and built form of the site. Visual impacts are influenced by the following elements:

- the direct effect of the development upon views of the landscape through intrusion or obtrusion;
- the sensitivity of viewers who may be affected, and
- the effects on acknowledged areas of special interest or values such as designated landscapes, built heritage features including conservation areas and listed buildings, their setting, and cultural associations.

5.5. It should be noted that landscape and visual impacts may be positive, neutral or negative. The identification of potential landscape and visual impacts is important in order that appropriate mitigation measures may be established to reduce the effect of the impacts both during construction and once fully operational including on the nearby built heritage features.

5.6. The assessment of landscape and visual effects has been undertaken following procedural guidance in 'Guidelines for Landscape and Visual Impact Assessment', Second Edition, published by the Landscape Institute and the Institute of Environmental Assessment.

5.7. In relation specifically to the assessment of the effects on the setting of nearby built heritage features this assessment has also taken appropriate account of the consultative Guidance published in 2006 by English Heritage and the Planning Advisory Service for undertaking character appraisals of conservation areas. Where any impacts occur these are considered on the basis of whether they are positive, neutral or negative.

5.8. Relevant policy is set out in PPG15 and, the High Peak Local Plan (Saved Policies 2008). The guidance in Buxton Conservation Areas Appraisal (2006) and the Buxton Station Road Design Framework SPD (adopted by HPDC in July 2007) have also been taken into account

in establishing the basis of this assessment and development of the scheme proposals.

5.9. Full details of the relevant National, Regional and Local Policy guidance are included at Chapter 3 of this ES.

Proposed development

5.10. The general description of the proposed development is set out in Chapter 2. The key elements and issues associated with the proposed development relating to the landscape and visual impact assessment and associated built heritage impact assessment are identified below:

- General heights and massing of the proposed buildings
- Proposed roof profiles
- Building materials and colours to be used in the development
- Physical and visual links to the surrounding urban fabric of Buxton
- Anticipated traffic movement on the existing road network
- Potential changes to the traffic management signs within the town centre
- Introduction of a new public realm within the town centre

5.11. It is anticipated that the development will be implemented in a series of phases. This may have an effect on how some receptors views are effected during the period in which the site is constructed. The build programme will comprise approximately 30 months as detailed below:

- Pre construction phase (Weeks -4 to -1) - the provision of the temporary car park which will be operational throughout Phase 1.
- Phase 1 (Weeks 1 to 52) - construction of the multi-storey car park and hotel.
- Phase 2 (Weeks 52 to 104) - The temporary car park will be removed at the commencement of Phase 2 when the new multi storey car park will be operational. Phase 2 involves the construction of the food store and associated car parking.
- Phase 3 (Weeks 104 to 130) involves the construction of the non food retail units, fit out and establishment of the public realm.

Assessment Methodology

Landscape and Visual

5.12. The landscape and visual assessment, completed by Camlin Lonsdale landscape architects has involved fieldwork, desk based data processing and analysis. The assessment has been conducted in accordance with the methodology proposed by the 'Guidelines for Landscape and Visual Impact Assessment' (GLVIA) prepared by the Landscape Institute and Institute of Environmental Assessment, 2002. The establishment of the baseline situation and initial assessment work was completed in September 2007, followed by more detailed visual impact assessments in January 2008, enabling the worse case scenario, of winter vegetation cover, to be assessed. Further desk based studies were conducted in November 2008 to assess the visual impacts associated with revisions to the proposals particularly at the west end following discussions with English Heritage. Further reassessments were undertaken in December 2008 and February 2009 to assess the visual impacts associated with further changes to the architectural elements to the north west of

the development area.

5.13. The assessment was conducted in the following stages, which is reflected in the structure of this Chapter. The assessment methodology is described in greater detail within **Appendix 5.1**.

- Description of the existing environment (baseline condition).
- Identification of the potential landscape and visual impacts during construction and once the development area becomes operational.
- Prediction of landscape and visual effects, and appraisal of their significance.
- Identification of appropriate mitigation measures.
- Assessment of predicted long term impacts following establishment of the mitigation measures.

5.14. To determine the significance of the development on the landscape resource the following factors were considered:

- Sensitivity of the landscape to the type of change proposed
- The nature of the effect. Whether the key characteristics of the existing landscape resource are reinforced, weakened or remain unchanged as a result of the proposed changes
- The quality of landscape elements and the recognition of this by designation at various levels, such as local, regional or national and the affect that the development has on the integrity of the designated area
- The magnitude of the effect and whether the change would be positive, adverse, temporary or permanent
- The type and rate of other changes that are likely to occur in the landscape resource of the area in the future.

5.15. The principal technique for the assessment of the visual impacts is from the detailed viewpoint analysis and the evaluation of various factors such as:

- Proximity of receptor to proposals
- Sensitivity of receptor to proposals
- Condition of existing landscape or view
- Magnitude of change to existing landscape or view
- The type and rate of other changes that are likely to occur on the visual amenity of the study area in the future

5.16. The view points to be assessed were discussed and agreed with Council Officers. Simple photomontages for a number of viewpoints around the site have been prepared to aid the assessment of the visual impact of the proposed development. The basic block massing for the proposed development has been superimposed on existing views to illustrate the magnitude of change at each particular viewpoint. These photomontages are used to aide the prediction of the likely scale, form and massing of the proposed buildings in comparison with the existing view of the site, but do not illustrate detailed building materials envisaged.

5.17. The view points used are taken from publicly accessible points and indicate the typical situation for areas surrounding the proposed development area. The view points assessed comprise the following locations.

View point Number	OS reference	Name
1	0582 7370	Station Road
2	0588 7370	Station Approach
3	0592 7375	Buxton Station Entrance
4	0592 7370	Station Road (bus stop)
5	0610 7371	Station Road (east)
6	0620 7371	Station Road roundabout
7	0623 7364	Bridge Street
8	0612 7359	Spring Gardens
9	0611 7364	Wye Street
10	0588 7355	Turner's Memorial
11	0587 7351	The Slopes (lower)
12	0576 7345	The Crescent
13	0585 7340	The Slopes (upper)
14	0599 7344	Hardwick Square
15	0694 7348	Haddon Court
16	0616 7344	Holker Road
17	0650 7375	Cliff Road
18	0540 7175	Solomon's Temple

5.18. Wherever possible, identified effects are quantified, but the nature of landscape and visual assessment requires interpretation informed by professional judgement. The significance of impacts and effects was judged using two criteria: the magnitude of the change and the sensitivity of the location or visual receptor affected by the change. It should be noted that landscape and visual impacts may be positive, neutral or negative.

5.19. Information gained in the landscape and visual impact assessment contributed to the development of the strategic masterplan and in particular the need for and approach to the creation of a strategic landscape framework. This is described in greater detail in the Design and Access Statement.

5.20. A glossary of the terms and definitions used within the landscape and visual impact assessment are set out at **Appendix 5.2**.

Built Heritage

5.21. In relation specifically to the potential impact on built heritage features of significance Indigo Planning has carried out site survey and desk studies to inform the assessment. The site and surrounding area was extensively walked on 31 August 2007. Relevant details based on the desk studies (including historic map regression) are set out in **Appendix 5.3** and the Archaeology section.

5.22. The relevant area for assessment was established from the site survey and desk studies taking into account site location, elevation, visibility, and the existence of listed buildings, registered parks and gardens, as well as conservation areas in proximity to the site. These studies informed the identification of relevant heritage features and their assessment for the baseline situation. They also informed the relevant viewpoints for consideration, being those where identified built heritage features have a direct visual interrelationship from public areas with the proposed development which might therefore have an impact on their setting. Significance of the relevant listed buildings identified (defined as national, regional, or local) has been assessed based on the surveys, general guidance including appropriate English Heritage Principles for Selection and Selection Guides, the rarity of examples present and professional interpretation. The area for assessment is shown on plan in **Appendix 5.3** and viewpoints are illustrated at **Appendix 5.4**.

5.23. Discussion between the Council's Design and Conservation officer and Indigo Planning concluded that, in view of the absence of any built heritage features on the site and consequently any potential impact on such features being limited to a possible measure of impact on the setting of some in proximity, it would be reasonable to prepare a conjoined report with the Landscape and Visual Assessment as much of the baseline descriptions of the site and its visual impact would be common to both assessments with only a very limited number of the viewpoints affected in relation to the Built Heritage assessment. This was proposed in the Scoping request to the Council and confirmed as appropriate in its response.

5.24. Discussion of the proposals with HPDC during the period of design development and emerging comments following consultation with English Heritage officers resulted in further consideration of the buildings affected and the impact of the proposed development on specific views. As a consequence the design of some parts of the proposed development, notably at the west end, has evolved further and been revised with a greater degree of detail provided to meet concerns raised by English Heritage officers. At a site visit with English Heritage in late 2008, the applicants were advised that the scheme, as evolved, was appropriate for the site. These latest revisions (as at February 2009) have been incorporated in this assessment.

5.25. Reference to and description of the relevant heritage features and potential impact of the development is included in following sections of this Chapter.

5.26. Potential visual impacts of the proposals on the setting and character of the identified built heritage features (slightly, moderately, substantially beneficial; no significant change; slightly, moderately, substantially adverse) are reported and the effect of these impacts (positive, neutral, negative) identified through professional judgement and based upon:

- for listed buildings and the registered park (The Slopes), the grade and significance, the proximity to the development site, the likely extent of intrusion by the development into views that might affect their setting; and,

- for the Buxton Conservation Areas the nature and extent of the special character of the area, its proximity to the development site and the likely extent of intrusion into views that might affect its setting.

Existing baseline situation

Site Context

5.27. Buxton is positioned within the High Peak borough, to the North West of Character Area 52 (White Peak) of the Joint Character Areas designated by Natural England. It lies at a boundary between the Limestone landscape of the White Peak to the south and east and the gritstone of the Dark Peak to the north and west.

5.28. Buxton is the largest town within the White Peak with much historic interest primarily related to its development as a spa town. The town has been associated for centuries with the curative properties of its thermal springs. The spa developed around the lowest point of the geological basin in which Buxton lies. It hosts an annual International Buxton Opera festival and fringe which attracts a large following of supporters. It is the principal service centre for the Peak District National Park and its fine historic buildings and their surroundings have made it a major focus for tourists.

5.29. The key historic heart of Buxton and the most important heritage buildings lie to the west of the site centred around the formal buildings and landscape setting established by the Dukes of Devonshire in the late 18th century. This development propelled Buxton from a small Pennine village into a much visited spa town Subsequent development and the coming of the railways in the 19th century led to further expansion with new hotels and spa tourist facilities developing principally to the east of this formal centre along the slopes of the River Wye (Spring Gardens). Although later 20th century development led to the removal of some of these earlier buildings much of the main historic centre with its formal landscaped composition remains. This lies beyond the development site as does the main route and buildings of Spring Gardens, separated by a 1960 built shopping precinct. The Conservation Areas within Buxton are also beyond the site boundaries.

5.30. The development of Buxton from the key period of its development can be seen in the map regression appended to the archaeological chapter of this ES (OS series 1839, 1879, 1890, 1922, 1977 are included in Appendix 10.1). The town has a very large number of listed buildings dating from the Georgian period onwards concentrated in the central area to the west of the site mainly focussed around the Grade I listed Crescent and the Grade II registered park The Slopes. (**Appendix 5.3** provides a plan of listed buildings in the area surrounding the development site).

Existing Environment

5.31. The existing landscape and visual resource of the site and its immediate environs including built heritage features has been assessed to establish baseline conditions against which the impacts of the proposed development can be evaluated objectively.

5.32. The evaluation of the landscape involved appraisal of the following elements:

- Landform: the underlying form of the land
- Vegetation: the extent and quality of vegetation within and immediately surrounding the site
- Landscape character: the overall impression of the landscape and its associated land uses

5.33. The evaluation of the existing visual and built heritage resource requires the appraisal of the following elements.

- Landscape elements: principal elements which form key visual features in the landscape. This covers landform, vegetation, landscape character, built heritage and surrounding land uses.
- Built heritage features: listed buildings, Buxton Conservation Areas, and The Slopes within the vicinity of the site.

- Visual receptors: identification of individuals/groups with views of the proposed development. This covers visibility of the site, visual receptors and view point assessment.

These elements are described below.

Landform

5.34. The development area exhibits an artificial landform comprising predominantly large flat plateaus within the site, ranging in height between 287.5m to the south east and 294.5m to the North West. These flat building plateaus within the naturally sloping topography of the environment surrounding the site are achieved by the presence of a large and extensive retaining wall to the north along Station Road which is 299.15m at its highest point, immediately north east of the site. The river Wye flows through the southern section of the development area. It has been culverted for much of its passage through the town centre, however a small stretch of approximately 36m remains open to the south east of the Spring Gardens Shopping Centre.

Vegetation

5.35. Due to the extensive nature of the existing uses within the development area, comprising predominantly surface car parking, vegetation is extremely sparse, limited to the following elements:

- mature shrub planting and juvenile trees associated with the retaining structures to the north west of the site,
- shrub planting beds associated with the northern entrance to the existing precinct to the south of the development area,
- a group of trees and shrubs along part of the eastern façade of the Waitrose building
- two isolated juvenile trees within the car park to the east of the development area
- an isolated semi mature *Sorbus aria* (Whitebeam) between the river Wye and New Wye Street which provides some local presence.

5.36. Planting within the existing public realm of Buxton town centre is extremely limited within the retail area and urban landscape associated with the Crescent. More extensive soft landscape is associated with the historic parkland of Pavilion Gardens, The Slopes and outlying residential areas. This vegetation helps to soften the impact of buildings within the vicinity, filter views and provide seasonal interest to these urban and suburban areas.

Landscape Character

5.37. The site is centrally located within Buxton town centre. The town has evolved over many centuries as a result of its location and its thermal springs and the supply of natural mineral water. Up until the 18th century Buxton was considered a minor settlement, concentrated on what is now known as Upper Buxton positioned on a limestone plateau. As the 19th century progressed the town's reputation for water treatment and hydrotherapy spread and the town became increasingly popular, especially with the establishment of the railway links from the south east (Midland Railway) and the north west (Stockport, Disley and Whaley Bridge Railway) in 1863 and 1864. The majority of the fine architectural buildings within the town centre date from this period onwards and are protected within conservation areas.

5.38. Early development of the site in the mid 19th century was for a brickworks at the west end in connection with building the former Royal Hotel, Winster Place (7-17 Spring Gardens). Subsequently the Midland Railway station, sidings and associated rail sheds and goods yards were constructed in the 1860's mainly on the North West part and, together with

construction of the station for the Stockport, Disley and Whaley Bridge (subsequently the LNW Railway) on the upper slopes above the site formed a large scale element that dominated the local landscape. The twin stations, established a significant local gateway to the town centre in this location. Land to the immediate north of the river Wye within the site remained largely undeveloped due to its low lying nature and consequent risk of flooding.

5.39. The closure and rationalisation of the railways in the 20th century resulted in the demolition of railway structures to the south of Station Road and enabled more recent developments to be developed in this important town centre location. They comprise:

- Spring Gardens Shopping Centre: A covered precinct constructed in the 1980's. Users of the precinct gain access from the surrounding surface car parks and from Spring Gardens. The precinct does not form a key architectural feature within the town centre but is used by a large volume of people. Once inside the precinct the receptors views are enclosed by the architectural structure of the centre.

- Surface level car parks: There are a number of surface level car parks and servicing areas within and in the immediate environs of the development area. The current landscape quality of these is poor. Views within the car park area are extensive but currently of poor quality.

- Larger scale industrial/retail units (Buxton Spa water plant/Aldi): A number of large scale buildings using modern construction materials have been erected to the north of Station Road and are visually prominent including in views from the conservation areas to the south. The bland architectural style together with the meaningless swathes of landscape in which they are set emphasise their in-compatibility to a town centre location. The poorly considered colour of the roof panels used in the Buxton Water complex renders them visible over a wide area within the town and the surrounding landscape as a visually incongruous element within the otherwise dark roofscape character of Buxton.

- Station Road: The road corridor follows the general alignment of the natural topography of the area and is elevated above artificial platforms currently being used for car parking within the development area. This leads to a degraded road corridor and a poor point of arrival at the town centre for visitors from the north and east.

5.40. The form and appearance of these elements creates a low grade environment providing a poor quality initial impression that detracts from the image and identity of the wider town centre and the setting of the conservation areas.

Built Heritage features

5.41. The site does not contain any statutorily listed buildings or any considered of historic or architectural importance and is not located within a conservation area. **Appendix 5.3** identifies the listed buildings, registered park, and conservation areas which may potentially be affected by the proposed development. It also includes a Bibliography for the research carried out to inform the assessment.

Listed Buildings and Registered Park

5.42. Listed buildings in proximity to the site but unlikely to be affected by the development other than from certain viewpoints where their setting or views out from the building may be affected, or where there may be potential for construction impact include;

- Buxton Railway Station, Buxton Road (Grade II) - locally significant,

- 7 bollards at the top of Station Approach (Grade II)- locally significant,

- Hogshaw Lane Viaduct (Grade II) – locally significant,

- 1-9 The Quadrant (Grade II).- locally significant,
- Grove Hotel and Grove Parade, 1, 2 and 3 Terrace Road (Grade II) - locally significant,
- The Crescent, The Crescent (Grade I) – nationally significant;
- 1-6 The Colonnade, The Quadrant (Grade II listed) – locally significant.

5.43. The Slopes is a Registered Park (Grade II) of local significance located within the Buxton Conservation Areas at the centre of the town. The assessment takes the special interest of this feature into account in considering the relevant viewpoints

5.44. The significance of each of these features is established in the light of criteria set out in para 5.26. The sensitivity of each to change and potential for any significant effect on their character or historic interest as a result of the proposals is moderated by their degree of proximity and visibility in relation to the site and the scale of proposed development. There is limited intervisibility between the site and the majority of these features, this generally being restricted to passing views to one side or views through a framework of other buildings. In the case of The Crescent English Heritage officers were particularly concerned to ensure that views out from the Assembly Room at first floor within the east flank of the building were not adversely affected by views of the proposed development to the east. **Appendix 5.3** provides statutory listing descriptions for each of the listed buildings and the Registered Park where a potential impact from the visual changes has been identified. The detail of each view as agreed with Council officers is considered in **Appendix 5.4** where the existing and predicted view is described and the likely visual effect of the development reported. The effect on the setting and character of the built heritage features is set out in a schedule later in this Chapter.

Conservation Areas

5.45. The Buxton Conservation Areas abut the development site at its west and east ends and in some discrete locations along the southern edge at the rear of Spring Gardens. Its core was originally designated in 1968 (Buxton Central) and other areas extending to the north and east were subsequently designated. In 2006 an appraisal was carried out that resulted in rationalisation of these conservation areas, modifying their boundaries including an eastward and northward extension of the Spring Gardens area (3), and providing a comprehensive appraisal that identifies 9 distinct Character Areas. The sub-areas are described and guidance for the protection of their character and appearance are set out in the Buxton Conservation Areas Appraisal. A Plan of the Buxton Conservation Areas and individual plans of the relevant Character Areas (1 – The Crescent, The Slopes and The Devonshire Royal Campus, 3 - Spring Gardens, and 6 - Hardwick) are included at **Appendix 5.3.** These Character Area plans identify significant viewpoints and glimpse views of interest as well as negative and neutral buildings. **Appendix 5.3** also includes brief descriptions of the three Character Areas relevant to this assessment.

<u>Surrounding Land Uses</u>

5.46. The site is positioned within the town centre of Buxton. Areas surrounding the town centre include areas of residential uses. The character of the residential area of Fairfields, positioned to the east of the town centre and development area comprises a combination of stone terraces which line the historic routes into the town and an estate of two storey semi-detached post-war houses with isolated modern infill development. The majority of public space within this area is screened from the development area due to the orientation of the streets and the consequent positioning of residential properties. Upper elevations from some properties may be able to see the site area. The site is visible from Cliff Street and certain aspects of Victoria Park Road. Sensitivity to change within the residential area is considered to be high.

5.47. Residential areas to the south of the development comprise stone built properties with some

infill development. Parts of these lie within the Hardwick Character Area of the BCA. The development area is not visible from the majority of residential buildings within this area due to the orientation of the buildings. There are however isolated cases where properties may see direct views across the site from upper storey windows.

5.48. Residential areas to the north of the development area comprise older stone built properties which line the historic routes into the town and a number of small post-war and more recent developments. An elevated modern infill development positioned on the former railway embankment is higher than the general building height within the area. Views towards the site are obstructed by intervening buildings and railway embankments, however the site may be visible from isolated upper storey windows. Sensitivity to change within the residential area is considered to be high.

5.49. A more modern industrial scale landscape associated with the re-development of the station goods yards in the 1980's occurs to the north of the site and includes the Buxton Spring Water plant complex and the Aldi supermarket and associated car parking. These elements together with the ring road (Station Road) and railway car park degrades the otherwise dense urban grain of the town centre and leads to somewhat incongruous bland landscapes elements in the otherwise characterful urban realm of the town centre.

5.50. The Town's location and relationship to the surrounding undulating topography makes Buxton visible from much of the surrounding landscape. The town is surrounded on three sides by designated Special Landscape Areas. The land to the north and east is however excluded from this designation. The Peak District National Park lies some 3 km to the west and east of the town centre. Views of the site from these elevated rural areas towards the development area are generally screened by intervening topography, woodland and built development. The spectacular views from the popular tourist destination of Solomon's Temple and elevated aspects of Grinlow incorporate views across the town of Buxton. The site at present is not a visually prominent element within the general grain of the urban fabric in views from these distant elevated locations.

Visibility of the site

5.51. The Buxton Station Road Design Frameworks, context analysis states that the sloping terrain and street pattern results in orientating views across and within the study area. The views analysis of this study highlighted the following:

- "*Panoramic views are possible from the western end of the railway station. These include views of the railway viaduct at the eastern edge of the study area, across Spring Gardens to the southern slopes of the valley, across The Slopes to the Town Hall (affected by particular season of the year), the rear of the Crescent to the Royal Devonshire University of Derby Campus;*

- *However, the quality of these views is variable and only those to the south and west are to be highlighted within the Area Design Framework;*

- *Views into and across the area from outside the study area are limited from the west and affected by the seasons in the case of The Slopes; views are also possible from streets on the southern valley slopes aligned at right angles to Spring Gardens; but are also of low quality;*

- *Within the study area Station Road presents a number, if not sequence of orientating views, as travelled in either an easterly or westerly direction;*

- *However, the quality of these views is generally poor given the quality and form of surrounding buildings and the open and unstructured*

nature of car parking sites; some views in particular on the approaches to the railway viaduct, could be improved via improvements to this structure including the use of creative lighting."

5.52. The description of the landscape character areas provided within The Buxton Station Road Design Framework covers a wider area than the application site and provides an introduction to the general nature of the views within the area. Views of the development area are generally restricted to its immediate environs and from isolated elevated positions within the wider landscape. Two factors combine to restrict the visibility of the site in views from surrounding areas.

- Existing built form: Existing buildings and structures that surround the site act as a visual barrier to more distant views of the site and consequently restrict the zone of visual influence in these areas. Views from the surrounding areas tend to be glimpse views of part of the site rather than the whole site being revealed within the view.

- Topographical nature of the site: The topographically featureless nature of the site in relation to the surrounding landscape results in the structures positioned to the edge of the development being visible to their immediate surroundings, but internal development areas being screened behind these perimeter buildings. The site is positioned at the base of surrounding slopes which reinforces the visual screening effect of the existing built form, but does render the proposed roof-scape important to views from elevated positions.

5.53. The combination of these factors restricts the visibility of the existing site from the wider landscape. The extent and degree of visibility is generally limited to the immediate environs of the site with glimpse views of part of the site visible from isolated positions within the middle distance. Distant views of the site are obtained from the elevated land known as Grinlow to the south west of the town. From these more distant views the development site is not evident as an element but the mass and colour of the recent industrial buildings associated with Buxton Water, positioned immediately north of the site, form an incongruous element with the finer grain of the overall settlement of Buxton.

Visual receptors

5.54. Visual receptors within the vicinity of the site comprise the following groups :

- *Residents:* The development site is visible from residential properties in the vicinity of the site. Sensitivity to change in the view from residential areas is considered to be high.

- *Amenity users:* Visitors to the historic spa town and its setting in close proximity to the Peak District National Park. Sensitivity to changes in the views experienced by these receptors is considered to be high.

- *Industrial/business users:* Industrial and commercial business users (for example: Buxton Water Plant and Buxton Press) occupy premises to the north of the site. Sensitivity to change of occupants of these buildings are considered to be low.

- *Road and rail users:* Users of the local road and rail network constitute the final group of visual receptor and sensitivity to change is considered to be moderate. Similarly the transient nature of the users of the surface level car parks in and surrounding the development area renders them moderately sensitive to change.

View point assessment

5.55. A number of view points have been identified in discussion with the Council's Design and Conservation Officer to assess the changes anticipated with the proposed development. These viewpoint assessments help inform the evaluation of the overall visual effects that may be associated with the proposed development. Specific viewpoint assessments are

included within **Appendix 5.4** and include those where there is a potential for impact on built heritage features.

Identification and Evaluation of Key Impacts

5.56. Transforming the existing landscape associated with the current surface level car parks into its anticipated use as a mixed-use development will involve a number of temporary and permanent landscape and visual impacts, including on built heritage features, as identified below.

Construction Phase

5.57. The construction phase will involve the removal of the limited vegetation on the site. This will be followed by the phased implementation of components of the proposed masterplan and new built development as indicated in Chapter 2. It will create significant temporary visual impacts, comprising items such as:

- Construction out of normal working hours resulting in illuminated nocturnal activity within the site area.
- Construction compounds – construction site offices and storage compounds.
- Traffic movement – a variable number of HGV deliveries to and from the site would be combined with a high level of vehicular activity within the site.
- Illumination – particularly during winter months the site may be illuminated in order to enable construction activities to be undertaken safely.
- Cranes – would be an integral part of the construction phase.

5.58. These construction activities may cause intrusive temporary visual impacts, which would exist at varying levels of intensity within the site and over the construction period but as they are only temporary will have no significant permanent visual impact on any heritage features.

5.59. Any construction impacts where there is the potential to have a physical effect on built heritage features in proximity to the site due to vibration are discussed as part of the Noise and Vibration section of this ES. In effect any such activities will be regulated if required such that no adverse physical impact to these features will occur.

Operational phase

5.60. The general nature of the permanent buildings associated with the development is described in Chapter 2 of the ES. The heights and massing of the proposed buildings are illustrated in **Appendix 5.4** with further detailed information for the impact assessment derived from the drawings and the Design and Access statement submitted with the application. The principal materials proposed comprise a mixed palette of traditional and contemporary materials of subdued colour that reflect the intrinsic character of the surrounding town buildings. It includes stone cladding (ashlar, pitched, and rusticated finish where appropriate to its surrounding context), ,welsh slate roofing, metal cladding panels and standing seam roof (zinc and aluminium),frameless glazing panels, buff coloured ceramic rainscreen cladding, pre-oxidised copper cladding, polyester powder coated cladding panels and louvres.

5.61. In general terms the proposed site may be divided into two distinct building blocks supported by a new public realm. The masterplan exploits the opportunity to create visual links with significant features within the wider landscape which aids its integration with the urban fabric of Buxton and with relevant heritage features beyond the site identified through the baseline assessment and where their character or historic interest may be affected. The buildings will be supported by an associated infrastructure of covered service yards and car parks which

will be contained as integral elements of the overall structures. The effect of the visual changes described on the built heritage features is considered in the schedule later in this chapter.

5.62. The roof-scape of the proposed building blocks will accommodate plant of varying sizes as described in greater detail in the Design and Access Statement. Their visual impact will be important in views from more elevated positions surrounding the development area and is described more fully in the relevant Viewpoint assessments in **Appendix 5.4**.

5.63. Due to the town centre location of the site and its existing use as a town centre car park, the development is not anticipated to create a significant increase in the volume of traffic on the surrounding road network and any associated visual impacts that this may create will therefore be minimal.

5.64. Minor modifications to the existing highway signage may be undertaken, as identified within the Ashley Helme Associates Car Parking Management and Access Strategy , but it is not anticipated that there will be an increase in the number of highway related signs within the town centre area in general. There may however be a slight increase in information signage at the entrance to the multi-storey car park facilities.

Landscape and Visual Mitigation Measures

5.65. The development of the masterplan has addressed the integration of the overall site with its surroundings and incorporates measures to minimise visual intrusion on sensitive receptors including the setting of conservation areas, listed buildings, and The Slopes. This is achieved primarily in the careful consideration of the uses, heights, massing, architectural detailing, and materials of the proposed buildings within the development area. Due to the urban nature of the proposed development and its setting predominantly screened by existing buildings, large areas of screen planting are not considered appropriate. Consequently the long term visual impacts will not generally be changed significantly from the impacts in that follow the completion of construction.

5.66. Temporary and permanent mitigation measures may be employed to reduce the landscape and visual impacts during the construction period as identified below:

Construction phase

- Position of construction compounds.
- The use of screen hoardings to visually contain areas of construction.
- Agree specific haul routes to minimise the effects of construction traffic on the wider landscape of Buxton and to control movement through the overall development site.
- The height, position and orientation of lighting should be considered to control visual impacts and minimise nocturnal light pollution from temporary light columns.

Operational Phase

5.67. The following elements were taken into account in the development of the detailed design for the development area:

- Integration within the urban grain of Buxton through visual and physical links
- Establishment of compatible building heights mass and uses to adjacent areas including built heritage features
- Establishment of a landscape framework appropriate to its town centre location.

- The appropriate use and screening of permanent light sources to minimise general night sky pollution and potential localised glare.

- The position of buildings, associated uses, and choice of materials in relation to the adjacent streetscape including the relevant listed buildings, Buxton Conservation Areas sub areas, and The Slopes registered park.

- The strategic placement of trees to filter views towards the site and provide a vegetative foil to the new built forms.

- The use of appropriate tree species to complement the local context and that are capable of growing in the specific urban conditions presented on site.

Predicted Effect on the Landscape

Capacity of the landscape to accommodate change

5.68. The sensitivity of the landscape to change is reflected in the degree to which the landscape is able to accommodate change without adverse effects on its character. The site, due to its position, surrounded by existing development and its current degraded nature, is considered capable of accommodating the development currently proposed. The development proposals enable the positive integration of this formerly disparate site with the overall urban grain of Buxton.

5.69. Despite the overall size of the development area, landscape impacts are confined to the removal of a small number of existing trees and areas of shrub planting. These losses would be compensated for in the longer term by the establishment of a comprehensive public realm framework and the placement of key strategic trees to establish a notable urban landscape at a key threshold to the town centre.

Changes to the landform

5.70. There will be minor, localised, changes to the landform of the site. There will however be a marked positive change in the perceived landscape with the apparent reinstatement of the topography of the site enabling a positive frontage to be established along Station Road. This will help to address the currently open, unstructured road corridor noted in the Station Road Design Framework.

Loss of vegetation

5.71. The greatest landscape impact of the proposed development will be the loss of the limited vegetation cover on the site. The development will involve removal of the small number of semi mature trees in the site associated with the surface car parks and an area of municipal shrub planting to the north of the site associated with the existing highway retaining walls. This will have localised significance restricted to the immediate surroundings of the vegetation to be removed.

5.72. Once implemented the scheme will introduce an improved landscape quality through the introduction of the new planting that will enable the creation of a new landscape framework of appropriate scale and character to its urban position. Although not extensive the placement of specific street trees will have a significant positive impact in raising the quality of the view the receptors will experience associated with this area of Buxton.

Impact on the Landscape Character

5.73. There will be a significant change in the landscape character of the site. The site will be changed from a series of poor quality areas of surface car parking to a major mixed use development set within the heart of Buxton. It is anticipated that this change will be ***moderately beneficial*** in the long term due to the current visually degraded condition of the

site, the development proposals' position and design response in relation to the town centre including the listed buildings and conservation areas within its vicinity, and the implementation of the proposed public realm framework.

5.74. The proposals will have a **significantly beneficial** impact on users of Station Road by establishing a positive edge to the road corridor and providing a distinctive feature at a key entrance point to the town centre.

5.75. The impact of the proposed development on the character of the majority of surrounding areas of the town will be minimal and primarily limited to minor changes in isolated views. The scale and massing of architectural elements within the north west area of the development area will have a slightly detrimental impact on views from the lower aspects of the Slopes which is positioned within the adjacent The Crescent, The Slopes and The Devonshire Royal Campus Conservation Area.

Predicted Visual Impacts

5.76. Most of the visual impacts associated with the development are predicted as being ***slightly*** *to* ***moderately beneficial*** as it will introduce elements of greater visual quality and interest into the view replacing the current poor quality and visually degraded character of the development site where it is in close proximity to the identified heritage features and where there may be an impact from the proposals. A table setting out the changes and resulting visual impacts assessed is included at **Appendix 5.4**. The zone of visual influence (for landscape assessment) and area of assessment (for built heritage) is largely confined to the immediate surroundings of the development area. Discrete sections of the site are visible in more distant views but are experienced as part of the overall urban landscape rather than a specific and dominant element within the view and relate to the landscape assessment.

5.77. The proposals would result in significant changes to the visual components within the development area. This would involve the replacement of the open, unstructured surface level car parks with significant buildings that will increase the density of the urban grain of the area and provide a new defined built edge to the centre. This will generally foreshorten views within the vicinity of the site. The visual quality of the resultant view in most of the viewpoints would be enhanced in the long term through the provision of improved architectural elements that positively engage with the town centre.

5.78. The greatest change will be in views in the immediate vicinity of the site. These views, in particular along Station Road will experience a dramatic change associated with the establishment of a positive edge to this important urban road corridor and with the creation of a more visually contained route, more appropriate to its town centre location. The architectural materials proposed will ensure compatibility with the historic elements within the town centre, whilst the contemporary detailing will introduce distinctive new buildings to the locality. It will create a memorable visual threshold to the town centre. The use of a limited number of well placed trees in this urban landscape will further add to the quality of its visual character.

5.79. However views from areas within the centre of Buxton (The Crescent, The Slopes and The Devonshire Campus Conservation Area) will be slightly detrimentally affected due to the height and mass associated with the architecture of the north west corner of the development area. It will be most detrimental in views from the lower aspects of The Slopes, where this architectural element will slightly affect the surrounding buildings in the conservation area.

5.80. Changes to the views of the site experienced from the middle distance will be less dramatic as the view contains intervening visual elements that reduces the impact of the overall site.

5.81. In the limited number of positions where the development area can be seen from more distant views, such as Solomon's Temple, the massing of the proposed development, through the careful design of the roofscape and its construction material would be seen as

an integral element of the overall urban fabric.

5.82. The visual impact of traffic on the surrounding road network will be neutral. It is not anticipated that there will be a significant increase in the volume of traffic visiting the town centre. Minor modifications to the existing highway signage will not create a significant visual impact.

Predicted Effects on Built Heritage Features

5.83. The development will not have a direct physical impact on the surrounding listed buildings, conservation areas, or registered park but the physical changes to the site and predicted visual changes to the development area have the potential to affect the character and settings of the identified built heritage features in proximity to the site.

5.84. Views of the proposed development will be relevant in relation to listed buildings at the west and east ends of the site and in the town centre where parts of the proposed development will be seen framed by some listed buildings. Views of the listed Buxton Station fanlight to the north of Station Road will be balanced by the new development on the site opposite particularly where the north west corner stands slightly forward of the main façade further along Station Road highlighting the gateway element at this point.. The fanlight's setting at this important entrance will be unaffected by the proposed new building opposite. At the east end the setting of the Hogshaw Viaduct and views of it from Station Road and Wye Street can be considerably enhanced through careful detailing and choice of materials for the new development along Station Road that will frame the view of this significant railway structure from both these approaches.

5.85. There are a number of views into and out of the surrounding conservation areas where the proposed development has a visual impact, potentially having an effect on the setting and character of the Buxton Conservation Areas Sub-Areas 1, 3, and 6. In addition The Slopes falls within Sub-Area 1 of the conservation area and views out from this registered park will similarly be affected by the visual impact of the revised proposals. The visual impacts and consequent effects of the proposals and any potential mitigation of adverse impacts or enhancement of the character and historic interest of identified heritage features or their setting are presented in the Schedule below using the definition of visual impacts identified in **Appendix 5.2** and the relevant viewpoints illustrated in **Appendix 5.4**.

BUILT HERITAGE FEATURE **Listed Buildings**	**VISUAL IMPACT OF PROPOSALS**	**EFFECT ON BUILT HERITAGE**	**POSSIBLE ENHANCEMENT/ MITIGATION**
Grade II listed station fanlight, Station Road - viewpoint 1	No significant change - Visible as part of a passing view travelling along Station Road with development of the site opposite providing an improved relationship with the town centre and the edge of the conservation area at this landmark gateway	Neutral/positive	None
Grade II listed bollards, Station	No significant change	Neutral	None

Road/Station Approach - viewpoint 2			
Grade II listed Hogshaw Viaduct (from Station Road – viewpoint 4	No significant change – current view across existing degraded car park/servicing area replaced by new development channelling view towards the viaduct as an evolving sequence along the route corridor with the viaduct as a focal point.	Neutral	None
Grade II listed Hogshaw Viaduct (from Station Road – viewpoint 9	No significant change – new development visible at the left side partially obscuring the current view of the viaduct across existing degraded car park/servicing area.	Neutral/positive subject to detailed design of the new 2 storey building to the left of the view	Detailed design of new 2 storey block has potential to further enhance the existing degraded view and setting of the viaduct
Grade II listed 1-9 The Quadrant - viewpoint 10 and 11	Moderately beneficial – new development of appropriate scale and design visible rising alongside the existing listed building screens the existing poor quality single storey building beyond.	Positive. Articulation, fenestration, and choice of materials of proposed building ensure it reflects the characteristics of the adjacent built form and relates appropriately to the historic surroundings.	None
Grade II listed Grove Hotel and Grove Parade, 1, 2 and 3 Terrace Road - viewpoint 10 and 11	No significant change – new development in proximity to the building is partly visible as a backdrop above existing poor quality single storey building. Trees screen views from the upper Slopes. Materials proposed are recessive and appropriate to the surrounding context.	Neutral. Bulk and height of the proposed building at the south west corner of the development minimised. Articulation, fenestration, and choice of materials ensure it reflects the characteristics of the adjacent built form and relates appropriately to the historic surroundings.	None

Grade I listed The Crescent Viewpoint 12 and internal views from first floor Assembly Room within east wing	Slightly detrimental - new development in north west corner visible above The Quadrant opposite in views from the Assembly Rooms first floor windows and beyond the east end of The Crescent. Overall articulation, fenestration detailing, and materials reflect the character of surrounding buildings. Proposed building in south west corner where view is channelled through existing buildings fronting Terrace Road and The Quadrant appropriate in terms of height and scale with detailing and materials reflective of characteristics of adjacent built form. Views of the proposed buildings from ground level in front of the listed building is largely screened by existing trees.	Negative/neutral. The proposed building at the north west corner will project into views to one side of and from the listed building above adjacent buildings. This effect will be mitigated during seasons when existing mature trees on the Lower Slopes are in leaf and the lower section of tree canopy will effectively obscure the limited views through to the new development beyond	Potential to reduce the effect further by care in detailed design to ensure the façade treatment, roofline, and use of materials fully respond to and integrate with those of surrounding buildings.
Grade II listed 1-6 The Colonnade, The Quadrant Viewpoint 11	No significant change	Neutral	None
Buxton Conservation Area Sub Areas			
The Crescent, The Slopes, The Devonshire royal Campus Character Area (BCA Sub Area 1) – viewpoint 2,	Slightly beneficial – new development in the north west corner improves the gateway element at this location in the conservation area. Its scale, massing, and articulation are appropriate and the use of traditional materials within a	Neutral/positive	None

	contemporary design aids its integration with adjacent built form in the conservation area. The proposed building will obscure views from the upper part of Station Approach across to the Hardwick Character Area and the identified landmark Trinity Church tower on the skyline although this structure will be revealed as the user descends Station Approach.		
The Crescent, The Slopes, The Devonshire Royal Campus Character Area (BCA Sub Area 1) – viewpoint 10	Moderately beneficial - new development of appropriate scale and design visible rising alongside the existing listed building screens the existing poor quality single storey building beyond.	Neutral/positive. Articulation, fenestration, and choice of materials of proposed building ensure it reflects the characteristics of the adjacent built form and relates appropriately to the historic surroundings.	None
The Crescent, The Slopes, The Devonshire Royal Campus Character Area (BCA Sub Area 1) – viewpoint 11	Slightly detrimental – new development in north west corner is visible from within this part of the conservation area rising slightly above and dominating the framing buildings in the foreground.. Overall articulation, fenestration detailing, and materials reflect the character of surrounding buildings. Proposed building in south west corner where view is channelled through existing buildings fronting Terrace Road and The Quadrant appropriate in terms of height and scale with detailing and materials reflective of	Negative/neutral. This effect will be mitigated during seasons when existing mature trees on the Lower Slopes and along Station Approach are in leaf particularly during summer months and will screen parts of the development.	Potential to reduce the effect further by care in detailed design to ensure the façade treatment, roofline, and use of materials fully respond to and integrate with those of surrounding buildings.....

	characteristics of adjacent built form.		
Spring Gardens Character Area (BCA Sub Area 3) – viewpoints 8 and 9	No significant change to glimpse views from Spring Gardens/Wye Street into the development site and the east end of the sub-area as new development replaces current views across existing degraded car park/servicing area. Materials proposed are appropriate to the surrounding context.	Neutral/potentially positive subject to detailing of the proposed new development visible in the views	Detailed design providing high quality detailing of new development can have a positive effect on the setting of the conservation area
Hardwick Character Area (BCA Sub Area 6) – viewpoints 14, 15, 16	No significant change to views out from the sub area likely to affect its setting. Roof form modelled as north lights and materials proposed are recessive and appropriate to the surrounding context.	Neutral	None
Grade II registered park The Slopes Viewpoints 11-13	Slightly detrimental – new development in north west corner is visible from within the lower and middle areas of The Slopes rising slightly above the framing buildings in the foreground and restricting views of the landscape and skyline beyond the town above the Buxton Water plant . Overall articulation, fenestration detailing, and materials reflect the character of surrounding buildings. Proposed building in south west corner where view is channelled through existing buildings fronting Terrace Road and The Quadrant appropriate in terms of height and scale with detailing and materials reflective of	Negative/neutral. Height of the proposed building at the north west corner will restrict views of the skyline although glimpses of the wooded ridge in the background will remain visible. This effect will be further mitigated during seasons when existing mature trees on the Lower Slopes and along Station Approach are in leaf particularly during summer months and will screen parts of the development and retain a visual link to the wider landscape setting of this central part of Buxton.	None

	characteristics of adjacent built form. Views of this part will be extensively screened by existing trees even in winter.		

5.86. The effects of the proposed development on the setting of listed buildings ranges from positive through neutral to negative. Where a negative/neutral effect has been identified, namely the views out from the first floor Assembly Rooms of The Crescent and its setting from the front of the building, there is potential to mitigate this through the detailing of the proposed development to ensure it integrates fully into the surrounding buildings' context. The view from within the Assembly Rooms is from a position not normally specifically assessed due to its internal location and limited accessibility. Further mitigation of the effect on the setting from the front will occur particularly during summer months when existing mature trees on the Lower Slopes are in leaf and the lower section of tree canopy will effectively obscure the limited views through to the new development beyond. In view of these factors and with the incorporation of potential mitigation at the detailed design stage identified to ensure the proposed development responds to and integrates with those of surrounding buildings the residual effect on the setting of the Crescent would be neutral. With the identified mitigation incorporated in the detailed design the overall conclusion of the assessment on the setting of the listed buildings is that it would be neutral.

5.87. Whilst there is some negative effect on the setting of parts of the conservation area in the viewpoints reported above in other parts it will be enhanced through replacement or screening of existing buildings or views that are negative elements of the conservation area setting. In those views where a negative effect has been identified this is reduced further by the screening that will occur particularly during summer months when existing mature trees are in leaf. Overall this assessment concludes that the conservation area setting will be preserved or enhanced as required by PPG15 with the potential for additional enhancement where the detailed design and use of materials, including the public realm, integrates the new development into the context of its surrounding buildings within the conservation area.

5.88. The effect on the setting of The Slopes has been identified as negative/neutral in one particular viewpoint. As with the consideration of the setting of the listed buildings and the conservation area this effect would be significantly reduced by the screening that will occur, particularly during summer months, when existing mature trees on the Lower Slopes and also along Station Approach are in leaf. The residual effect on the setting, where the proposed development is largely screened for most of the year, would be neutral and the special interest of the registered park would be protected, as advised by PPG15.

Cumulative impact

5.89. The cumulative effect of the external environment of the proposed development and other known developments within the vicinity have been considered and are not anticipated to create further landscape and visual impacts. Known development within the vicinity of the site is confined to the refurbishment of the historic and Grade I listed Crescent building complex.

5.90. Proposals associated with the external environment of the Crescent scheme are confined to minor modifications to the pump house roof and the removal of some areas of parking to the front of the Crescent building. These changes will improve the quality of the local landscape but will not have a significant effect on the wider area of the town centre.

5.91. Cumulative impacts of the Crescent and the Spring Gardens schemes, if any, will be a perceived improvement to the overall quality of the public realm within the town centre and to the setting of the listed buildings and conservation areas within this wider context.

Overall effect

5.92. The development accords with the planning policy for the area. The landscape and visual impact assessment has established that the proposed development outlined would change the landscape and visual baseline conditions during its construction and operational phases. It would introduce two new large scale structures to the existing degraded landscape associated with the surface level car parks to the north of the existing Spring Gardens Shopping Centre and the associated loss of a small number of semi mature trees. The proposed buildings and associated public realm offers the opportunity to redress the loss of vegetation and to significantly improve the visual quality of the public realm within the development area, introducing a public realm framework appropriate to its new use.

5.93. The development overall would have the effect of preserving the setting of surrounding built heritage features in accordance with the guidance in PPG15 and the local plan policies of the High Peak Local Plan. It has the potential to enhance the setting of the adjacent and nearby conservation areas and listed buildings subject to the detailed design of elements of the development and of the public realm as identified above.

5.94. Overall during construction and operational phases it was judged that direct impacts would have a moderately beneficial effect on the landscape resource.

5.95. Overall during construction and operational phases it was judged that the development would have a slightly beneficial effect on the visual resource.

5.96. Overall during construction and operational phases it has been concluded that there will be no direct physical impacts on the relevant heritage features and that predicted visual impacts will at least preserve and have the potential to enhance the character and setting of the Buxton Conservation Areas and listed buildings where there is a visual interrelationship between the development and the setting of these features.

5.97. The development area will complement surrounding land uses and can be integrated successfully within its surrounding town centre context including built heritage features in the vicinity of the site.

Appendices

5.1 Landscape and Visual Impact Assessment Methodology

5.2 Landscape and Visual Impact Assessment Glossary of Terms and Definitions

5.3 Built Heritage Features

5.4 Assessment of Specific Viewpoints

6. Transportation

Introduction

6.1. This chapter describes the impacts on transport and movement that are predicted from proposed redevelopment of the Site.

6.2. A Transport Assessment (TA) and Travel Plan (TP) have been prepared by Ashley Helme Associates (AHA) and accompany the planning application submitted to High Peak Borough Council (HPBC). The TA and TP are included in **Appendix 6.1** and **6.2** respectively.

6.3. The proposed development will generate additional travel demands by all modes of transport. The TA (**Appendix 6.1**) assesses the ability of the existing transport infrastructure to accommodate these additional travel demands. The starting point for assessment is to establish baseline conditions, i.e. the conditions that will prevail if the development proposal does not proceed. The transport impact of the development is established by comparison of the baseline conditions with those predicted when the development becomes operational.

6.4. The 'environment' effects of changes in volume on Air Quality and Noise are addressed in Chapters 7 and 8 respectively. These emissions assessments rely on transport data from different time periods than used in the TA. This chapter (and the TA) concentrates largely on peak hour conditions when transport networks generally experience the greatest traffic demands. However, air quality and noise assessments focus on changes in traffic over 18 and 24-hour periods. This chapter describes the traffic data used in the Air Quality and Noise assessments, setting out the origins of the data.

Planning Policy

6.5. A general thrust of current national and local policies is to promote and deliver sustainable transport objectives. This Chapter, in considering transportation effects, has paid due regard to the range of policy documents and considerations, including:

- PPS1 (Delivering Sustainable Development)
- PPS6 (Planning or Town Centres)
- PPG13 (Transport)
- 2004 Transport White Paper 'The Future of Transport: A Network for 2030'
- DfT 'Planning for Sustainable Development: Towards Better Practice'
- High Peak Local Plan Saved Policies
- Derbyshire Local Transport Plan 2006-2011
- South Pennines Integrated Transport Strategy (SPITS)

6.6. A detailed review of these documents is undertaken in Chapter 2 of the TA (**Appendix 6.1**) and in Chapter 3 of this ES.

Methodology and Assessment Criteria

6.7. This chapter focuses on the ability of the public transport and highway networks to accommodate the travel demands of the proposed development in so much as they represent a change from the existing situation.

Assessment Scenarios

6.8. 2005 is adopted as the baseline year for this assessment. The TA (**Appendix 6.1**) includes assessment of the impact of development generated traffic on the study network of junctions for 2012 (assumed development year of opening) and 2017 (future year).

Baseline Data Collection

6.9. The starting point of the assessment is to establish baseline transport conditions for all modes of travel. This requires the collection/gathering of a range data set out herein.

Data Sources

6.10. Traffic surveys were undertaken by AHA in 2005 to establish the PM peak hour and Saturday peak hour traffic flows on the local study network. The identified peak hour traffic flows on the local highway network are agreed with Derbyshire County Council (DCC).

6.11. Accident data for the study network, covering the period January 2004 to May 2007, were purchased from DCC.

6.12. Digital plan data were obtained from Ordnance Survey.

6.13. Neighbourhood statistics were derived from an interrogation of 2001 Census data.

6.14. Estimates of development generated traffic were derived from an interrogation of the TRICS database.

Highway Audit

6.15. AHA has undertaken an audit of the existing highway arrangements for the study network. A summary of the audit is presented in AHA report ref 960/1/A (**Appendix 6.3**) and includes the following information:

- Road markings,
- Waiting restrictions,
- Traffic sign audit,
- Roundabout geometry for study junctions.

Pedestrian Accessibility Audit

6.16. AHA has undertaken an audit of the existing pedestrian infrastructure for the identified study network of roads/junctions. This establishes the extent of footway network, areas of pedestrian priority and assisted and unassisted pedestrian crossing points. A summary of the pedestrian access audit is presented in AHA report ref 960/1/A (**Appendix 6.3**).

Cycle Accessibility Audit

6.17. AHA has undertaken an audit of the existing cycling infrastructure for the identified study network of roads/junctions. An audit of existing cycle storage facilities at the Spring Gardens Centre has been undertaken.

Public Transport

6.18. Public transport travel to/from the site is available by bus and rail. Baseline public transport accessibility has been established with reference to the following documents produced by the Institution of Highways & Transportation:

- Planning for Public Transport in Development, and
- Providing for Journeys on Foot.

Bus

6.19. An audit of all bus stops within a 5 and 10 minute walk of the site has been undertaken. A review of services calling at these stops has been undertaken to establish routes and frequency of service.

Rail

6.20. The site lies close to Buxton Rail Station. An audit of timetable information has been undertaken to establish service frequency, route and stations on-route.

Car Park Audit

6.21. AHA has undertaken an audit of the existing car parking arrangements at the Spring Gardens Centre, documenting the total number of spaces, spaces designated for mobility impaired visitors and the charging regime. A summary of the car park audit is presented in AHA report ref 960/1/A (**Appendix 6.3**).

6.22. In addition to Spring Gardens, there are eight other public car parks in Buxton. An audit of these car parks was undertaken to identify the total number of parking spaces and charging regime.

Junction Modelling

6.23. The DfT computer programme ARCADY has been used to analyse and predict the performance of the roundabout study junctions.

Significance Criteria

6.24. The nature of each residual transportation impact has been established, the significance of each impact is assessed as:

- **Negative (Minor, Moderate or Major),**
- **Neutral,**
- **Positive (Minor, Moderate or Major).**

Baseline Conditions

Local Highway Network

6.25. The site comprises land located between the public highways Station Road and New Wye Street. The identified TA study network of junctions is agreed with the highway authority and comprises:

- SJ1: Existing Spring Gardens Car Park Entry/New Wye Street (Priority Control)
- SJ2: Existing Spring Gardens Car Park Exit/New Wye Street (Priority Control)

- SJ3: New Wye Street/Car Park Entry/Exit (Priority Control)
- SJ4: New Wye Street/Station Road (Roundabout)
- SJ5: Bridge Street/Spring Gardens (Roundabout)
- SJ6: A6 Bakewell Road/A6 Fairfield Road (Roundabout)
- SJ7: Station Road/The Quadrant/St Johns Road (Roundabout)

6.26. A detailed description of the local highway network is set out in Chapter 3 of the TA (**Appendix 6.1**). A visual summary of the highway audit is presented in AHA report ref 960/1/A (**Appendix 6.3**).

Traffic Counts

6.27. AHA undertook traffic counts at the study junctions in 2005, as set out in Table 6.1.

Table 6.1: Traffic Counts

Day	Peak	Time	Dates
Friday	PM	1630-1830	21.10.05 & 04.11.05
Saturday	SAT	1100-1500	15.10.05 & 05.11.05

6.28. The identified peak hours for the study network of junctions are:

- PM 1630-1730
- Saturday 1200-1300

Traffic Flows

6.29. Table 6.2 presents the recorded 2005 PM peak hour and Saturday peak hour traffic flows on the study network of roads. Drg No 960/01 A in AHA report ref 960/1/A (**Appendix 6.3**) identifies the roads listed in Table 6.2.

Table 6.2: Baseline Traffic, PM Peak Hour & Saturday Peak Hour

Link		2-Way Traffic Flow (Vehicles)	
Name	**Location**	**PM**	**SAT**
St Johns Road	West of SJ 7	1066	1038
Station Road	North of SJ 7	1220	1287
The Quadrant	West of SJ 7	918	904
Station Road	West of SJ 4	1149	1465
Charles Street	North of SJ 4	223	197
Bridge Street	East of SJ 4	1134	1539
New Wye Street	South of SJ 4	381	673
Spring Gardens	West of SJ 5	310	217
Bridge Street	North of SJ 5	1186	1471
Spring Gardens	East of SJ 5	1325	1531
Sylvan Car Park	South of SJ 5	83	134
Spring Gardens	West of SJ 6	1339	1515
Fairfield Road	North of SJ 6	1889	1820
Bakewell Road	South of SJ 6	1332	1294

6.30. Table 6.3 presents estimates of Annual Average Daily Traffic (AADT) flows for 2005, 2007, 2012 and 2017 for the study network of roads. The AADT flows are estimated from the 2005

PM peak hour count using factors derived from an Automatic Traffic Count (ATC) for a location on Fairfield Road undertaken between 1-30 November 2007. The data was purchased from DCC. The. DfT NRFT Low Growth factors (adjusted by TEMPRO) are applied to the 2005 count data to estimate future year traffic flows.

Table 6.3: Baseline AADT Flows for 2005, 2007, 2012 and 2017

Link		Annual Average Daily Traffic			
Name	**Location**	**2005**	**2007**	**2012**	**2017**
St Johns Road	West of SJ 7	12422	12718	13447	14100
Station Road	North of SJ 7	14217	14555	15390	16138
The Quadrant	West of SJ 7	10698	10952	11581	12143
Station Road	West of SJ 4	13389	13708	14494	15198
Charles Street	North of SJ 4	2598	2660	2812	2949
Bridge Street	East of SJ 4	13214	13529	14304	14999
New Wye Street	South of SJ 4	4440	4545	4806	5040
Spring Gardens	West of SJ 5	3613	3699	3911	4101
Bridge Street	North of SJ 5	13821	14150	14961	15688
Spring Gardens	East of SJ 5	15440	15807	16714	17526
Sylvan Car Park	South of SJ 6	968	991	1048	1099
Spring Gardens	West of SJ 6	15603	15974	16890	17711
Fairfield Road	North of SJ 6	22013	22537	23829	24987
Bakewell Road	South of SJ 6	15522	15891	16803	17619

Highway Safety

6.31. The TA (**Appendix 6.1**) includes a review of accidents occurring in the vicinity of the site in the three year period covering January 2004 to May 2007. There are a total of 13 recorded accidents on the study network, as follows:

- New Wye Street: 2 accidents,
- Station Road: 3 accidents,
- The Quadrant: 1 accident,
- Bridge Street: 4 accidents,
- Spring Gardens: 2 accidents, and
- Holker Road: 1 accident.

All accidents are classified as Slight.

Highway Network Assessment

6.32. The DfT computer programme ARCADY is used to analyse and predict the performance of a roundabout junction. This predicts the RFC (ratio of traffic demand to capacity) and the associated queue, for each entry arm to the roundabout. ARCADY is used to model the performance of:

- SJ4: New Wye Street/Station Road
- SJ5: Bridge Street/Spring Gardens
- SJ6: A6 Bakewell Road/A6 Fairfield Road
- SJ7: Station Road/The Quadrant

6.33. ARCADY modelling is undertaken for the 2005 Base situation for the midweek PM and Saturday peak hours.

New Wye Street/Station Road

6.34. Table 6.4 summarises the ARCADY analysis results for the New Wye Street/Station Road roundabout junction.

Table 1.4: New Wye Street/Station Road

Peak Hour	Charles Street		Bridge Street		New Wye Street		Station Road	
	RFC	Queue	RFC	Queue	RFC	Queue	RFC	Queue
PM	0.076	0.1	0.469	0.9	0.268	0.4	0.290	0.4
SAT	0.115	0.1	0.559	1.3	0.374	0.6	0.478	0.9

6.35. The analysis predicts that the junction operates with high levels of spare capacity, and negligible queuing, in the 2005 PM peak hour and Saturday peak hour Base situations.

Bridge Street/Spring Gardens

6.36. Table 6.5 summarises the ARCADY analysis results for the Bridge Street/Spring Gardens roundabout junction.

Table 6.5: Bridge Street/Spring Gardens

Peak Hour	Bridge Street		Spring Gardens (E)		Sylvan CP		Spring Gardens (W)	
	RFC	Queue	RFC	Queue	RFC	Queue	RFC	Queue
PM	0.548	1.2	0.330	0.5	0.082	0.1	0.356	0.6
SAT	0.659	1.9	0.419	0.7	0.113	0.1	0.235	0.3

6.37. The analysis predicts that the junction operates with high levels of spare capacity, and negligible queuing, in the 2005 PM peak hour and Saturday peak hour Base situations.

A6 Bakewell Road/A6 Fairfield Road

6.38. Table 6.6 summarises the ARCADY analysis results for the Bakewell Road/Fairfield Road roundabout junction.

Table 1.6: Bakewell Road/Fairfield Road

Peak Hour	Fairfield Road		Bakewell Road		Spring Gardens	
	RFC	Queue	RFC	Queue	RFC	Queue
PM	0.538	1.2	0.475	0.9	0.503	1.0
SAT	0.545	1.2	0.422	0.7	0.545	1.2

6.39. The analysis predicts that the junction operates with spare capacity, and minimal queuing, in the 2005 PM peak hour and Saturday peak hour Base situations.

Station Road/The Quadrant/St Johns Road

6.40. Table 6.7 summarises the ARCADY analysis results for Station Road/The Quadrant/St Johns Road roundabout junction.

Table 6.7: Station Road/The Quadrant/St Johns Road

Peak Hour	Station Road		The Quadrant		St Johns Road	
	RFC	Queue	RFC	Queue	RFC	Queue
PM	0.248	0.3	0.539	1.2	0.478	0.9
SAT	0.258	0.3	0.534	1.1	0.471	0.9

6.41. The analysis predicts that the junction operates with high levels of spare capacity, and negligible queuing, in the 2005 PM peak hour and Saturday peak hour Base situations.

Pedestrians

6.42. The Site is bordered by public highway, which all include footways.

Pedestrian Catchment

6.43. The site lies in the heart of the town centre within an established shopping centre. The TA (**Appendix 6.1**) establishes walk isochrones for 5, 10 and 25 minute journeys from the site. This confirms that virtually all of the built-up area of Buxton is within a 25 minute walk of the site. An interrogation of the Neighbourhood Statistics from the 2001 Census identifies households within the three walk isochrone catchment areas, being:

- 5 minute walk: 780 households
- 10 minute walk: 2670 households
- 25 minute walk: 7099 households.

Socio-Economic

6.44. An interrogation of the Neighbourhood Statistics for the 2001 Census identifies the following car ownership characteristics:

- 38% of Buxton households within a 5 minute walk of the Site have no access to a car
- 31% of Buxton households within a 10 minute walk of the Site have no access to a car
- 28% of Buxton households within a 25 minute walk of the Site have no access to a car

Pedestrian Permeability

6.45. The site has excellent pedestrian permeability. The public highways surrounding the site are Spring Gardens, Bridge Street, Station Road, The Quadrant and Terrace Road. Spring Gardens is predominantly pedestrianised. There are a total of seven pelican/puffin crossings on the surrounding roads. A visual summary of the existing pedestrian access arrangements near to the site is presented on Drg No 960/06/A in AHA report ref 960/1/A (**Appendix 6.3**).

6.46. There is an existing pedestrian route through the Site between the Spring Gardens Centre and Station Road. However, this route crosses the existing service road and car park. There is a significant level difference between the existing car park and Station Road and this creates a physical barrier to pedestrian movement between the site and Station Road. There is an existing ramp (circa 35m long) between the car park and Station Road.

6.47. There is a good level of public realm signage in Buxton town centre.

Cycle

6.48. The site lies close to the National Cycle Route No 68 (referred to as the Pennine Cycleway). In Buxton town centre the route follows Compton Road, Spencer Road, Harrington Road and Manchester Road.

Cycle Catchment

6.49. The TA (**Appendix 6.1**) establishes the 2km and 5km isochrones for the site, reflecting typically 10 and 25 minute journeys. The isochrones comprise a substantial densely populated residential area, providing opportunity for employees and visitors to the site to cycle.

6.50. It is recognised that cycle journeys to/from the site may involve a gradient. However, this is the case that throughout much of the High Peak area, and Buxton specifically, many/most cycle journeys of about 5km in length involve some element of cycling on a gradient. In this, a cycle journey to the site is not materially different to many/most other locations within Buxton and the High Peak generally.

Taxis

6.51. There is a designated taxi rank on Station Approach (near the Site). The rank can accommodate circa 4-5 taxis and appears to be well used.

Public Transport

6.52. The practical options for public transport travel to/from the site are by bus and rail.

Buses

6.53. An audit of all bus stops within a 5 and 10 minute walk of the site has been undertaken and this is reported in the TA (**Appendix 6.1**). There are seven bus stops on highway immediately surrounding the Site (i.e. Station road, The Quadrant, Terrace Road and Bridge Street). Most of these stops meet the basic criteria set out by DCC in their 'Accessible Bus Stop Programme' by offering:

- Lay-by,
- Shelter with seating, lighting and timetable/route information, and
- Low floor access.

Existing Bus Routes and Services

6.54. An audit of the existing network of bus routes for services that call at bus stops near to the site has been undertaken and is reported in the TA (**Appendix 6.1**). In the typical weekday situation that are **7-8** buses calling at stops on Station Road and Market Place , and typically about 14-16 buses per hour taking into account buses travelling in both directions along the road.

Bus Catchment

6.55. The TA (**Appendix 6.1**) sets out the methodology for identifying the bus catchment area for the site. The bus catchment area covers a substantial area of Buxton and this demonstrates the good accessibility of the site by bus for a large area of population.

Rail

6.56. The site lies very close to Buxton Rail Station with good pedestrian linkage (assisted

crossing of Station Road). Rail services operate on an hourly basis between Buxton and Manchester. Nearby stations en-route include Dove Holes, Chapel-en-le-Frith, Whaley Bridge and Furness Vale.

Car Parking

6.57. The Spring Gardens Centre presently provides 427 car park spaces of which 26 are allocated for mobility impaired users. In addition to Spring Gardens, there are eight other public car parks in Buxton, as follows:

- Market Place: 52 spaces
- Kwik Save: 21 spaces
- Market Street: 87 spaces
- The Slopes: 65 spaces
- Sylvan Park: 68 spaces
- Bridge Street: 18 spaces
- South Street: 10 spaces
- Pavilion Gardens: 263 spaces.

Impact Assessment

Development Proposals

6.58. The proposed development comprises:

- Foodstore: 6174sm GFA,
- Non-food retail: 1556sm GFA,
- Hotel: 82 beds,
- Office: 430sm GFA,
- MSCP: providing an additional 202 spaces to the existing provision.

Potential Impacts

6.59. The potential transport-related impacts from the proposed development are:

- Effects of traffic movements generated by the proposed development on the local road network (long term)
- Effects of new infrastructure provision for the Site access
- Effects of traffic movements on highway safety
- Provisions for sustainable travel
- Effects of traffic movements generated on the local highway network during construction (short term)

Operational Demand Assessment

Generated Traffic

6.60. The TA (**Appendix 6.1**) sets out the methodology for estimating the traffic generated by the proposed development. Table 6.8 summarises the estimates of development generated traffic for the PM peak hour and Saturday peak hour situations.

Table 6.8: Peak Hour Generated Traffic

Peak Hour	PM		Saturday	
	ARR	DEP	ARR	DEP
Foodstore	496	509	542	566
Non-food retail	12	13	14	14
Retail total	508	522	556	580
30% discount for linked trips	-152	-157	-167	-174
Retail Net additional	356	365	389	406
Hotel	13	13	26	14
Office	4	10	0	0
Total Net Additional	+373	+388	+415	+420

6.61. Table 6.9 summarises the estimates of daily traffic generated by the proposed development.

Table 6.9: Daily Generated Traffic

Peak Hour	Midweek Generated Traffic	
	ARR	DEP
Foodstore	6183	6308
Non-food retail	156	159
30% discount for linked trips	-1902	-1940
Retail Net additional	4437	4527
Hotel	238	207
Office	46	42
Total Net Additional	4721	4776

Assessment Traffic Flows

6.62. Table 6.10 presents the estimated 2012 and 2017 Base and with development flows for the PM peak hour for the study network of roads.

Table 6.10: Assessment Traffic, 2012 and 2017, PM Peak Hour

Link		2012		2017	
Name	Location	Base	With Devt	Base	With Devt
St Johns Road	West of SJ 7	1153	1313	1210	1370
Station Road	North of SJ 7	1321	1609	1385	1673
The Quadrant	West of SJ 7	994	1122	1042	1170
Station Road	West of SJ 4	1244	1532	1304	1592
Charles Street	North of SJ 4	241	334	253	346
Bridge Street	East of SJ 4	1228	1622	1287	1681
New Wye Street	South of SJ 4	381	1156	381	1156
Spring Gardens	West of SJ 5	336	336	352	352
Bridge Street	North of SJ 5	1284	1678	1346	1740
Spring Gardens	East of SJ 5	1434	1828	1504	1898
Sylvan Car Park	South of SJ 6	83	83	83	83
Spring Gardens	West of SJ 6	1449	1843	1520	1914
Fairfield Road	North of SJ 6	2045	2323	2144	2422

Bakewell Road	South of SJ 6	1442	1558	1512	1628

6.63. Table 6.11 presents the estimated 2012 and 2017 Base and with development flows for the Saturday peak hour for the study network of roads.

Table 6.11: Assessment Traffic, 2012 and 2017, Saturday Peak Hour

Link		2012		2017	
Name	**Location**	**Base**	**With Devt**	**Base**	**With Devt**
St Johns Road	West of SJ 7	1126	1315	1186	1375
Station Road	North of SJ 7	1396	1739	1470	1813
The Quadrant	West of SJ 7	981	1135	1033	1187
Station Road	West of SJ 4	1590	1933	1673	2016
Charles Street	North of SJ 4	214	252	225	263
Bridge Street	East of SJ 4	1670	2126	1758	2214
New Wye Street	South of SJ 4	673	1510	673	1510
Spring Gardens	West of SJ 5	235	235	247	243
Bridge Street	North of SJ 5	1596	2052	1680	2136
Spring Gardens	East of SJ 5	1661	2117	1749	2205
Sylvan Car Park	South of SJ 6	134	134	134	134
Spring Gardens	West of SJ 6	1644	2100	1731	2187
Fairfield Road	North of SJ 6	1975	2285	2079	2389
Bakewell Road	South of SJ 6	1404	1550	1478	1624

6.64. Table 6.12 presents estimates of Annual Average Daily Traffic (AADT) flows for the 2012 and 2017 Base and With Development situations for the study network of roads.

Table 6.12: Assessment Traffic, 2012 and 2017 AADT

		Annual Average Daily Traffic			
Link		2012		2017	
Name	**Location**	**Base**	**With Devt**	**Base**	**With Devt**
St Johns Road	West of SJ 7	13447	15418	14100	16071
Station Road	North of SJ 7	15390	18945	16138	19693
The Quadrant	West of SJ 7	11581	13165	12143	13727
Station Road	West of SJ 4	14494	18049	15198	18753
Charles Street	North of SJ 4	2812	3965	2949	4102
Bridge Street	East of SJ 4	14304	19194	14999	19889
New Wye Street	South of SJ 4	4806	14405	5040	14639
Spring Gardens	West of SJ 5	3911	3911	4101	4101
Bridge Street	North of SJ 5	14961	19851	15688	20578
Spring Gardens	East of SJ 5	16714	21604	17526	22416
Sylvan Car Park	South of SJ 6	1048	1048	1099	1099
Spring Gardens	West of SJ 6	16890	21780	17711	22601
Fairfield Road	North of SJ 6	23829	27281	24987	28439
Bakewell Road	South of SJ 6	16803	18241	17619	19057

<u>New Wye Street/Station Road</u>

6.65. Table 6.13 summarises the ARCADY analysis results for the 2012 and 2017 PM peak hour situations. The With Development ARCADY model includes proposed highway improvement measures to New Wye Street. These works, identified in Chapter 4 of the TA (**Appendix 6.1**), comprise the widening of the existing single entry lane to the roundabout to two lanes.

Table 6.13: New Wye Street/Station Road, PM Peak Hour

Year	Situation	Charles Street		Bridge Street		New Wye Street		Station Road	
		RFC	Queue	RFC	Queue	RFC	Queue	RFC	Queue
2012	Base	0.083	0.1	0.504	1.0	0.277	0.4	0.312	0.5
	With Devt	0.141	0.2	0.708	2.4	0.583	1.4	0.421	0.7
2017	Base	0.088	0.1	0.526	1.1	0.283	0.4	0.326	0.5
	With Devt	0.148	0.2	0.732	2.7	0.595	1.5	0.437	0.8

6.66. The ARCADY analysis demonstrates that proposed highway improvement, to the New Wye Street roundabout entry, satisfactorily mitigates the traffic impact of the proposed development and leaves the junction operating in a similar manner to the Base situation.

6.67. Table 6.14 summarises the ARCADY analysis results for the 2012 and 2017 Saturday peak hour situations. The With Development ARCADY model includes proposed highway improvement measures to New Wye Street.

Table 6.14: New Wye Street/Station Road, Saturday Peak Hour

Year	Situation	Charles Street		Bridge Street		New Wye Street		Station Road	
		RFC	Queue	RFC	Queue	RFC	Queue	RFC	Queue
2012	Base	0.129	0.1	0.595	1.5	0.387	0.6	0.512	1.0
	With Devt	0.192	0.2	0.836	4.8	0.691	2.2	0.687	2.2
2017	Base	0.138	0.2	0.617	1.6	0.395	0.6	0.533	1.1
	With Devt	0.207	0.3	0.860	5.7	0.704	2.3	0.711	2.4

6.68. The ARCADY analysis demonstrates that proposed highway improvement, to the New Wye Street roundabout entry, satisfactorily mitigates the traffic impact of the proposed development and leaves the junction operating in a similar manner to the Base situation.

ASSESSMENT:-NEUTRAL

Bridge Street/Spring Gardens

6.69. Table 6.15 summarises the ARCADY analysis results for the 2012 and 2017 PM peak hour situations.

Table 6.15: Bridge Street/Spring Gardens, PM Peak Hour

Year	Situation	Bridge Street		Spring Gardens (E)		Sylvan CP		Spring Gardens (W)	
		RFC	Queue	RFC	Queue	RFC	Queue	RFC	Queue
2012	Base	0.587	1.4	0.356	0.6	0.085	0.1	0.396	0.7
	With Devt	0.707	2.3	0.495	1.0	0.106	0.1	0.475	0.9
2017	Base	0.613	1.5	0.372	0.6	0.087	0.1	0.424	0.7
	With Devt	0.730	2.6	0.511	1.0	0.109	0.1	0.511	1.0

6.70. The analysis predicts that the junction operates with spare capacity, and negligible queuing, in the 2012 and 2017 PM peak hour Base situations, and continues to operate in the same manner, with no material change, in the With Development situations.

6.71. Table 6.16 summarises the ARCADY analysis results for the 2012 and 2017 Saturday peak hour situations.

Table 6.16: Bridge Street/Spring Gardens, Saturday Peak Hour

Year	Situation	Bridge Street		Spring Gardens		Sylvan CP		Spring Gardens (W)	
		RFC	Queue	RFC	Queue	RFC	Queue	RFC	Queue
2012	Base	0.703	2.3	0.454	0.8	0.119	0.1	0.265	0.4
	With Devt	0.867	6.0	0.606	1.5	0.157	0.2	0.331	0.5
2017	Base	0.729	2.6	0.471	0.9	0.123	0.1	0.284	0.4
	With Devt	0.900	7.9	0.624	1.6	0.164	0.2	0.357	0.6

6.72. The analysis predicts that the junction operates with spare capacity, and negligible queuing, in the 2012 and 2017 Saturday peak hour Base situations, and continues to operate in the same manner, with no material change, in the With Development situations.

ASSESSMENT:-NEUTRAL

A6 Bakewell Road/A6 Fairfield Road

6.73. Table 6.17 summarises the ARCADY analysis results for the 2012 and 2017 PM peak hour situations.

Table 6.17: Bakewell Road/Fairfield Road, PM Peak Hour

Year	Situation	Fairfield Road		Bakewell Road		Spring Gardens	
		RFC	Queue	RFC	Queue	RFC	Queue
2012	Base	0.587	1.4	0.523	1.1	0.555	1.2
	With Devt	0.698	2.3	0.627	1.7	0.668	2.0
2017	Base	0.618	1.6	0.555	1.2	0.588	1.4
	With Devt	0.731	2.7	0.663	1.9	0.703	2.3

6.74. The analysis predicts that the junction operates with spare capacity, and negligible queuing, in the 2012 and 2017 PM peak hour Base situations, and continues to operate in the same manner, with no material change, in the With Development situations.

6.75. Table 6.18 summarises the ARCADY analysis results for the 2012 and 2017 Saturday peak hour situations.

Table 6.18: Bakewell Road/Fairfield Road, Saturday Peak Hour

Year	Situation	Fairfield Road		Bakewell Road		Spring Gardens	
		RFC	Queue	RFC	Queue	RFC	Queue
2012	Base	0.596	1.5	0.467	0.9	0.598	1.5
	With Devt	0.730	2.7	0.575	1.3	0.731	2.7
2017	Base	0.630	1.7	0.496	1.0	0.633	1.7
	With Devt	0.766	3.2	0.610	1.5	0.768	3.2

6.76. The analysis predicts that the junction operates with spare capacity, and negligible queuing, in the 2012 and 2017 Saturday peak hour Base situations, and continues to operate in the same manner, with no material change, in the With Development situations.

ASSESSMENT:-NEUTRAL

Station Road/The Quadrant/St Johns Road

6.77. Table 6.19 summarises the ARCADY analysis results for the 2012 and 2017 PM peak hour situations.

Table 6.19: Station Road/The Quadrant/St Johns Road, PM Peak Hour

Year	Situation	St Johns Road		Station Road		The Quadrant	
		RFC	Queue	RFC	Queue	RFC	Queue
2012	Base	0.271	0.4	0.576	1.4	0.515	1.1
	With Devt	0.310	0.4	0.673	2.1	0.589	1.4
2017	Base	0.285	0.4	0.600	1.5	0.541	1.2
	With Devt	0.325	0.5	0.694	2.3	0.614	1.6

6.78. The analysis predicts that the junction operates with spare capacity, and negligible queuing, in the 2012 and 2017 PM peak hour Base situations, and continues to operate in the same manner, with no material change, in the With Development situations.

6.79. Table 6.20 summarises the ARCADY analysis results for the 2012 and 2017 Saturday peak hour situations.

Table 6.20: Station Road/The Quadrant/St Johns Road, Saturday Peak Hour

Year	Situation	St Johns Road		Station Road		The Quadrant	
		RFC	Queue	RFC	Queue	RFC	Queue
2012	Base	0.282	0.4	0.570	1.3	0.508	1.0
	With Devt	0.344	0.5	0.669	2.0	0.595	1.5
2017	Base	0.297	0.4	0.594	1.5	0.532	1.1
	With Devt	0.360	0.6	0.689	2.2	0.618	1.6

6.80. The analysis predicts that the junction operates with spare capacity, and negligible queuing, in the 2012 and 2017 Saturday peak hour Base situations, and continues to operate in the same manner, with no material change, in the With Development situations.

ASSESSMENT:-NEUTRAL

Pedestrians

6.81. The proposed development improves pedestrian linkage between the site (and town centre) and Station Road. The existing pedestrian route between the Station Road and the Spring Gardens Centre is to be improved by offering mechanical assistance (escalator and travelator) at locations were there is a change in level. A clearly defined pedestrian route through the proposed car park area (at first floor level) is to be provided. Overall, the route significantly improves pedestrian priority and offers assistance to those with mobility impairment.

6.82. A new pedestrian route is also proposed between Station Road and New Wye Street. The new route is to be formed at first floor level between the existing Spring Gardens Centre and the proposed multi-storey car park. The route offers at-grade connection with Station Road at the northern end. At the southern end, the pedestrian route will connect with New Wye Street via a flight of stairs or lifts are available for those with mobility impairment.

ASSESSMENT:-MODERATE POSITIVE

Cycle

6.83. The proposed development is to significantly improve and increase cycle facilities at the site. A total of 37 cycle spaces are to be provided within the development together with locker storage. This provides positive encouragement to visitors of the proposed development (and town centre) to elect to travel by cycle.

ASSESSMENT:-MAJOR POSITIVE

Taxis

6.84. It is proposed that a new taxi stand is provided on Station Road. This will significantly increase taxi stand accommodation near to the site. This provides opportunity for visitors of the site to elect to walk or use public transport for their arrival journey and make their return journey by taxi.

ASSESSMENT:-MAJOR POSITIVE

Public Transport

Buses

6.85. As set out in paras 6.80 and 6.81 pedestrian linkage between the site and Station Road is to be improved. This will significantly improve the connectivity of the site (and town centre) with existing bus stops on Station Road. This provides positive encouragement to visitors of the proposed development (and town centre) to elect to travel by bus.

ASSESSMENT:-MODERATE POSITIVE

Rail

6.86. As set out in paras 6.80 and 6.81 pedestrian linkage between the Site (and town centre) and Station Road is to be improved. This will assist pedestrian movement to/from Buxton Rail Station.

6.87. As set out in para 6.83, a new taxi stand is to be provided on Station Road within a short walk of the rail station. This provides positive encouragement to residents of Buxton to elect to travel by train.

ASSESSMENT:-MODERATE POSITIVE

Car Parking

Mobility Impaired

6.88. The existing car park provides 26 spaces for those with mobility impairment (refer Drg No 960/04, AHA report ref 960/1/A, Appendix 6.3). The proposed development increases this provision to 49 spaces, representing an 88% increase.

ASSESSMENT:-MAJOR POSITIVE

Parking Restraint

6.89. Parking availability is known to influence travel choice. Car parking at the Spring Gardens Centre should not be viewed simply as development parking but rather as a town centre resource. For foodstores, the parking standards prescribed in the HPBC Local Plan allow a maximum of 1 space per 14sm GFA. For the proposed foodstore, this would equate to more than 433 additional car parking spaces at the centre and would increase public off-road parking accommodation in Buxton by over 40%. This would be a significant increase and could bring about a marked change in travel behaviour, i.e. more use of the private car with a consequent reduction in non-car travel. This would contrary to policy at both national and local level.

6.90. The proposed development provides only 202 additional car park spaces, representing about only half of the maximum parking that could be provided for the foodstore. This achieves an appropriate balance between:

- Providing sufficient car park spaces to meet development generated demand in a safe

manner, and

- Not over-providing to an extent that encourages unnecessary car travel and/or acts as a deterrent to use of alternative non-car modes.

ASSESSMENT:-MINOR POSITIVE

Linked Trips

6.91. There are a range destinations within Buxton that lie within a short walk of the Site. This leads to the conclusion that there will be linked trips between the foodstore and other town centre destinations. For example, some existing car trips to Buxton town centre will change to include a visit to the new foodstore. Similarly, a visit to the new foodstore may also be treated as an opportunity to undertake a visit to another town centre destination. This has the effect of reducing vehicle trips.

ASSESSMENT:-MINOR POSITIVE

Variable Message Signing

6.92. The existing surface car park at the Site is to be replaced by a fully enclosed multi-storey car park. Therefore, a visual inspection of space availability by visitors will not be possible. Consequently, as part of the development proposal, a Variable Message Signing (VMS) scheme is to be introduced. This is presented on Drg No 960/18/A of AHA report 960/7/A (Appendix 6.4).

6.93. The proposed VMS scheme has various advantages, including:

- Promotes effective and efficient use of development car parking,
- Is complimentary to the extensive passive car parking signing in the town centre,
- Provides a first stage VMS system for Buxton town centre, offering the Council the opportunity to extend this to other car parks in the future, if a requirement for this identified by the Council.

ASSESSMENT:-MINOR POSITIVE

Construction

6.94. The overall construction period is expected to last for 30 months and during this period the Site will generate traffic movements associated with demolition, remediation and construction. The main vehicle movements will be associated with:

- Workers, consultants, supervising staff and inspectors (likely to be by car), and
- Plant delivery/removal, materials delivery and waste removal (likely to be by HGV)

6.95. During the busiest period of construction, it is estimated that some 80 workers will be based on Site. Clearly, some of the workers will drive to the Site and it is estimated that worker traffic will comprise 60 vehicle arrivals in the AM peak hour and circa 60 vehicle departures in the PM peak hour. It is predicted that Site operations may generate 32 HGV movements per day during the busiest period of construction. Thus, the total estimated daily 2-way traffic, during the construction period, is 184 vehicles. The daily two-way traffic on Station Road is 10,350. Thus, construction traffic is unlikely to increase traffic flows on the surrounding network by more than 1.8%.

Mitigation Measures

6.96. A range of good practice measures will be implemented in order to minimise the impact of additional traffic movements generated by construction workers and delivery vehicles. These measures will include:

- Implementation of a construction strategy which will minimise the amount of waste generated (e.g. by precision building, use of pre-fabrication, re-use of materials on Site)
- Implementation of a waste management strategy during demolition and construction works
- Local sourcing of materials, labour and disposal sites to reduce the distance travelled by construction traffic, where possible
- The controlled routing of heavy vehicles to and from the development with routes agreed with the highway authority prior to construction commencing

6.97. Standard measures will also be implemented to minimise the impact of construction works on road users. These measures will include:

- Restricted speed limits, where necessary
- Use of warning signs in accordance with Chapter 8 of the Traffic Signs Manual
- Use of temporary traffic control, where necessary
- Deployment of road sweepers to reduce and remove dust/mud

6.98. There are no anticipated road or footpath closures required to facilitate construction

ASSESSMENT:-MINOR NEGATIVE

Opportunity for Further Mitigation

Travel Plan

6.99. A staff Travel Plan (TP) for the retail and hotel uses forms part of the development proposal. This is in accordance with national and local policies (e.g. PPG13) and the requirement of the Council. A TP is a management tool that aims, through a series of initiatives and targets, to create a formal transport strategy for businesses to promote 'greener', more sustainable travel choices that reduce reliance on the private car.

6.100. The objectives of the TP are to:

- Contribute to traffic reduction and other sustainable transport objectives set out in national, regional and local policies
- Improve accessibility to the Site by sustainable modes of transport and address traffic and parking issues
- Widen the choice of travel modes for all those travelling to/from the Site.

6.101. The TP identifies a range of measures that fall under the areas of promotion, physical measures, incentives, car parking restraint, and public transport infrastructure enhancement.

Conclusions

6.102. The proposed development comprises a total of 7730sm GFA of retail development together

with a hotel, office and extended car parking facilities at the existing Spring Gardens Centre in Buxton. The development proposal is expected to generate additional travel demands by all modes of transport.

6.103. The development extends and reinforces an existing retail destination in Buxton town centre. The location of the Site affords excellent opportunity for trips to be undertaken by non-car modes. The location also provides excellent opportunity for shared trips, which helps to reduce car travel.

Appendices

6.1 Transport Assessment Report (ref 960/3/C)

6.2 Travel Plan Report (ref 960/10/A)

6.3 Existing Highway and Parking Audit (ref 960/1/A)

6.4 Car Park Management & Access Strategy (ref 960/7/A)

7. Air Quality

Introduction

7.1. This chapter assesses the various air quality impacts associated with the development scheme. The assessment considers the impacts generated by the earthworks/enabling works, construction and operational phases of the proposed development. Impacts are considered at both existing air quality sensitive locations and also at the potentially sensitive elements of the development itself (i.e. the hotel).

Assessment Methodology and Significance Criteria

Consultation and Scope of Works

7.2. Prior to carrying out the air quality assessment as part of the ES a Scoping Report was prepared and submitted by Indigo Planning in September 2007.

7.3. The Scoping Report included the following comments relating to Air Quality:

> *'The impact of the development on air quality as a result of the proposals i.e. additional traffic and dust emissions, on existing receptors, will be assessed at all phases of development The assessment will concentrate on the assessment of dust during the earthworks and construction phases and the potential impact of vehicle emissions at operational phase'.*
>
> *'The changes in pollutant concentrations at existing sensitive receptor locations will be determined. The changes in traffic flow due to the development may cause an increase in pollutant concentrations and the impacts will be assessed against a set of significance criteria'.*
>
> *'In addition to assessing the impact of the development at existing receptors it will also be necessary to assess the pollutant concentrations at the development site; in particular for those areas where sensitive land uses are proposed (i.e. the hotel). The concentrations predicted will be assessed against the current National Air Quality Objectives'.*

7.4. The Council's Scoping Opinion (29 October 2007) confirmed that the scope of the works was satisfactory. The works for the air quality assessment has been developed further through discussion with Ian Nicholls, Environmental Health Officer, at High Peak Borough Council.

7.5. Impacts on local air quality will potentially occur during the earthworks and construction phases where activities taking place will have the potential to cause emissions to air, and during the operational phase of the development when there will be the potential for emissions from road traffic to affect baseline air pollutant concentrations.

7.6. The Council has not declared any Air Quality Management Areas in Buxton. However, due to the central location of the development and taking into account the detailed air quality assessment work which has been undertaken by the Council, it was agreed with the Council that a DMRB[1] assessment of nitrogen dioxide (NO_2) and particulate matter (PM_{10}) would not be sufficient. Detailed air quality modelling has been carried out therefore using the ADMS air dispersion model.

[1] DMRB Design manual for Roads and Bridges, Volume 11, Section 3, Part 1, Air Quality. Highways Agency May 2007.

7.7. The air quality assessment considers each of the proposed phases of the development. The main phases, and the potential air quality impacts associated with each, are as follows:

Earthworks/Enabling Works Phase

- Prior to construction of the new development, earthworks/enabling works will be carried out. This will involve the preparation of the ground to enable construction work to be carried out.

- The potential impacts associated with this phase are the creation and movement of dust, and additional exhaust emissions created by the vehicles and plant associated with the works

Construction Phase

- The development will proceed in 3 phases over approximately a 30 month period. The construction phase is anticipated to commence in 2010 and will be completed by 2012.

- The potential impacts associated with the construction phase are the creation and movement of dust, and additional exhaust emissions created by the vehicles and plant associated with the works.

Operational Phase

- The proposed redevelopment of the site will comprise a mixed-use development consisting of a hotel, a retail food store, multi-storey car park, several small retail outlets and offices. The most likely impact of the completed development will be due to road traffic emissions, from additional vehicle movements, on the surrounding road network. This will have the potential to affect air pollutant concentrations at existing sensitive receptors.

7.8. The scope of the works undertaken for each phase is as follows:

Earthworks/Enabling Works Phase

- To assess the impacts associated with the dust and PM_{10} releases during the earthworks/enabling works phase of development; a qualitative assessment has been undertaken.

Construction Phase

- To assess the impacts associated with dust and PM_{10} releases during the construction phase of the development, a qualitative assessment has been undertaken. As construction phasing and methods are preliminary only, given that a contractor is still to be appointed, the beneficial effects of standard mitigation measures, typically required through the planning system, have been assumed for the purposes of this assessment.

Operational Phase

- The prediction of the impacts of development traffic on local air quality has been undertaken using the ADMS Roads model. The air quality model has been used to predict nitrogen oxides (NO_x), nitrogen dioxide (NO_2) and particulate matter (PM_{10}) concentrations. The ADMS model has allowed air pollutant concentrations to be predicted at both the existing sensitive receptor locations and also at sensitive receptors proposed at the development site i.e. the hotel. A number of different scenarios have been modelled.

- The predicted operational impacts have been assessed against the air quality objectives and standards set out in the Air Quality (England) Regulations 2000 and Air Quality

(England) (Amendment) Regulations 2002. Changes in pollutant concentrations at existing sensitive receptors have also been assessed against a set of significance criteria.

Cumulative Impact Assessment

7.9. In addition to the assessment of the potential impacts on air quality associated with the construction and operational phases of the proposed development, the potential cumulative impacts of the Crescent development have been considered.

7.10. High Peak Borough Council have requested that cumulative impacts associated with the proposed development and the Crescent development be assessed, which involves the refurbishment and extension of the existing Crescent Building located approximately 100m to the south east of the proposed Spring Gardens Shopping Centre development.

7.11. A Transport Assessment for the Crescent development concluded that the number of vehicle movements likely to be generated by the development would not be significant. Similarly, as detailed in Section 6, Ashley Helme Associates, have confirmed that traffic from the Crescent scheme development would not be significant.

7.12. Pollutant concentrations, due to traffic associated with the Crescent development, are unlikely to significantly change from those predicted for the operational phase of the proposed Spring Gardens Shopping Centre development.

7.13. A cumulative air quality impact assessment of the completed Spring Gardens Shopping Centre and Crescent development has not therefore been necessary.

Assessment Methodology Adopted

Earthworks and Construction Phase – Assessment of Dust:

7.14. Earthworks and construction works have the potential to generate dust. The earthworks/enabling works may include topsoil and subsoil stripping, and movement and stockpiling of the materials. The construction works would include installation of utilities and roadways and construction of buildings.

7.15. The Environmental Protection Act 1990 lists the emission of dust from industrial, trade or business premises in sufficient quantity to be prejudicial to health or a nuisance as a 'statutory nuisance'. The local authority is placed under a duty to inspect, to detect any nuisance and to serve abatement notices where necessary. There are no UK statutory or recommended levels of dust deposition that constitute a statutory nuisance. Whether or not a nuisance exists is determined in the first instance by the Environmental Health Officer.

7.16. Dust contains particles in the range of sizes 1µm to 75µm in diameter. However, particles with a diameter of less than 10µm (PM_{10}) is the only fraction to be considered in the 2000 UK Government's National Air Quality Strategy. This is because the fine airborne particles are considered to be a more significant risk to health because they can be breathed deeply into the lungs. The finer fraction of dust is also more likely to become airborne and to travel beyond the boundary of a site.

7.17. Research has been undertaken by Arup Environmental for the Department of the Environment, who has prepared a report entitled The Environmental Effects of Dust from Surface Mineral Workings (HMSO 1995). The report provides background information and analysis of the impact of dust. The research found that larger dust particles greater than 30µm which have a relatively high mass and settling velocity, will generally deposit within 60-90m of point of release. Particles in the size range of 10-30µm will tend to fall out of the atmosphere within 100-250m of the point of release.

7.18. The level of public concern and potential for nuisance may be directly related to the number

of residential areas and their proximity to the site. The degree of nuisance experienced depends on the rate of deposition, and is discernible at two levels;

- Nuisance experienced when the dust cover is sufficient to be visible when contrasted to an adjacent clean surface, such as when a finger is wiped across the surface. This is particularly annoying when it occurs regularly over long periods; and

- Severe nuisance experienced when the dust cover is perceptible without a clean reference surface for comparison. This usually occurs over short periods during very dusty conditions.

7.19. The amount of dust that might cause complaint or nuisance in a particular circumstance is very difficult to determine and there are no statutory limits such as those applicable to suspended particulates or gaseous pollutants. The Environmental Effects of Surface Mineral Workings (HMSO 1991) however, gives some guidance as to the determination of nuisance from fugitive dust and suggests that complaints are likely when the rate of dust deposition is at 2 to 3 times the normal background level of dust deposition in the area.

7.20. Nuisance complaints are usually associated with periods of peak deposition, occurring during particular weather conditions. There is a "normal" level of dust deposition in every community and it is only when the rate of deposition is high relative to the norm that complaints tend to occur. The impact of dust on a community can be determined by five main factors:

- The short-term dustiness during periods of dry weather (climatic factors);

- The location of the potential dust source relative to the community;

- The effectiveness of dust control measures adopted by the site operator;

- The frequency or regularity with which these occur; and

- The duration of the site activities that contribute dust.

7.21. To assess the impacts associated with dust and PM_{10} releases during the earthworks and construction phase of the development, a qualitative assessment has been undertaken. As construction phasing and methods are preliminary only, given that a contractor is still to be appointed, the beneficial effects of standard mitigation measures, typically required through the planning system, have been assumed for the purposes of this assessment.

7.22. The existing sensitive receptors most likely to be affected by the activities of the earthworks and construction phase of the development are as follows:

- Residential properties, a hotel and student accommodation situated on Bridge Street located to the northeast, east and southeast of the site, from approximately 30m to approximately 110m from the site boundary.

- Residential properties located on the A6 Fairfield Road, located to the east of the site, approximately 100m from the site boundary.

- First floor residential dwellings located above retail units off Wye Street and Spring Gardens to the south of the site, approximately 10m from the site boundary.

- Residential properties, a hotel and student accommodation situated on The Quadrant and St John's Road to the west of the site, approximately 20m from the site boundary.

<u>Operational Phase – Modelling of Road Traffic Emissions:</u>

7.23. Prediction of the impacts of development traffic on local air quality has been undertaken

using the ADMS Roads model. The air quality model has been used to predict nitrogen dioxide (NO_2) and particulate matter (PM_{10}) concentrations as these are the pollutants most likely to exceed the objectives in this area.

7.24. The air quality modelling has been carried out for four different years. The details are as follows:

- The verification year 2006. This is the year used to verify the model. It is the most recent year for which traffic data, meteorological data and air quality monitoring data are all available.
- The base year: This is the current year i.e. 2008.
- The year of opening: The development will take place in 4 phases, and will be fully operational after all 4 phases are complete in 2012. The year 2012 has therefore been assessed.
- The design year: This is a future year when the proposed development will be fully operational. The year 2017 has been assessed.

7.25. The air quality modelling has therefore been carried out to estimate pollutant concentrations, due to road traffic emissions, for a total of 6 scenarios:

- Scenario 1: 2006 Verification Year
- Scenario 2: 2008 Baseline Year
- Scenario 3: 2012 Future Baseline Year Without Development (Opening Year)
- Scenario 4: 2012 With Development (Opening Year)
- Scenario 5: 2017 Future Baseline Year Without Development (Design Year)
- Scenario 6: 2017 With Development (Design Year)

Traffic Data

7.26. The ADMS Roads model requires average hourly traffic flow data. 24 hour AADT traffic flow figures have been obtained from Ashley Helme Associates Ltd, the traffic consultants for the proposed development. The 24 hour AADT flow has then been divided by 24 to provide the average hourly flow figure. A summary of the traffic flow links and data used for the air quality modelling is included in **Appendix 7.1**.

7.27. The traffic flow figures used relate to a slightly different previous iteration of the scheme to that submitted. That scheme included a slightly higher office content (784sqm GEA rather than the 430sqm proposed). The implications of this change however are negligible and it was not considered necessary to retest the assessment of air quality, as the findings and conclusions remain valid.

Meteorological Data

7.28. The 2006 data comes from the Leek Thornicliffe weather station; the nearest ADMS station to Buxton. The meteorological data provides hourly wind speed and wind direction information. The wind rose for this station is included in **Appendix 7.2**.

Existing Sensitive Receptors (ESR)

7.29. Existing sensitive receptor locations have been chosen along those routes most likely to be affected by traffic from the proposed development. Details of the existing sensitive receptor

locations are given in Table 7.1 and are shown on Figure 7.1. at **Appendix 7.6**.

Table 7.1: Existing Sensitive Air Quality Receptor Locations

Receptor Number	Address	Grid Reference	
		X	Y
ESR1	Flat 1, 5 Woodland View, Fairfield Road	406377	373618
ESR2	109 Spring Gardens	406302	373606
ESR3	Railway Hotel, 8 Bridge Street	406255	373639
ESR4	High Peak Halls, Bridge Street	406287	373665
ESR5	26 Bridge Street	406216	373723
ESR6	7-11 Bridge Street	406206	373640
ESR7	81-83 Bridge Street	406150	373627
ESR8	1, The Quadrant	405869	373621
ESR9	9, Buxton Centre, The Quadrant	405820	373652
ESR10	10 Cavendish Circus	405773	373610
ESR11	6a George mansions, St Johns Road	405734	373592
ESR12	Devonshire Royal Campus, Devonshire Road	405673	373615

7.30. The pollutant concentrations have been modelled at locations ESR 1 to ESR 12 for Scenarios 2 to 6. The impacts of the proposed development with regard to changes in air quality have been evaluated against the air quality significance criteria contained in **Appendix 7.3**.

7.31. The modelled concentrations have been corrected using the correction factor derived from the verification procedure described in paragraphs 7.34 to 7.40.

Proposed on-site sensitive receptors

7.32. The air pollutant concentrations for NO_2 and PM_{10} have been modelled at the proposed hotel and other areas of the site. The onsite receptor locations are detailed in Table 7.2 and are shown on Figure 7.2. at **Appendix 7.7**.

Table 7.2: Proposed Air Quality Receptor Locations

Receptor Number	Grid Reference	
	X	Y
PR1	405893	373679
PR2	405942	373696
PR3	406008	373712
PR4	405926	373646
PR5	406021	373680
PR6	406028	373699
PR7	406085	373717
PR8	406102	373708
PR9	406119	373713
PR10	406133	373700
PR11	406154	373698
PR12	406159	373684
PR13	406120	373687

PR14	406093	373676
PR15	406099	373662
PR16	406135	373660
PR17	406100	373649
PR18	406132	373651
PR19	406182	373671

7.33. The on-site NO_2 and PM_{10} concentrations have been modelled for 2012 and 2017 "with development" scenarios (i.e. Scenarios 4 and 6). It is only necessary to consider the" with development" scenarios for on-site receptors, and it is not necessary to consider the changes in pollutant concentrations at the development site.

7.34. The modelled concentrations have been corrected using the correction factor derived from the verification procedure described in paragraphs 7.34 to 7.40.

Model Validation, Verification and Adjustment

7.35. Local Air Quality Management Technical Guidance, 2003 (TG (03)) recognises that model validation generally refers to detailed studies that have been carried out by the model supplier or a regulatory agency. The ADMS model has been validated by the supplier CERC.

7.36. Model verification is required to check the performance of the model at a local level. For verification of the modelled results, measured air pollutant concentrations are required. High Peak Borough Council have a number of diffusion tubes monitoring NO_2; however only one NO_2 diffusion tube is located in the area of the proposed development site.

7.37. The verification of the ADMS Roads model has been undertaken by modelling concentrations at an existing NO_2 diffusion tube monitoring location and by comparing the modelled concentrations to the measured data. Nitrogen dioxide measurement data from 2006 was used for the purposes of verification. It was not possible to carry out verification fully in accordance with TG(03) as NO_x data is also required, but this was not available due to the absence of any background continuous analyser data, in the area.

7.38. It was not possible to carry out any verification for fine particulates (PM_{10}) as representative background monitoring data was not available in the modelled area. The PM_{10} concentrations referred to in this report are therefore uncorrected.

7.39. The verification uses nitrogen dioxide diffusion tube monitoring data provided by High Peak Borough Council. This information is summarised in Table 7.3.

Table 7.3: 2006 Nitrogen dioxide monitoring data for Verification Purposes

Location Type	**Location of Monitoring Station**	**Grid Reference**	**Measured Annual Mean Concentration 2006**
			NO_2 µg/m^3
NO_2 Diffusion Tube	Spring Gardens	SK061738	24.0

7.40. Model verification is carried out because models will contain a degree of error. By comparing the difference in the results from the model with the monitoring data for the same year (2006 for the purposes of this assessment) an evaluation of the ADMS model's performance can be made. It is recognised that verification using one diffusion tube location is not ideal and that performance could be improved with the use of further monitoring information.

7.41. To determine a correction factor the modelled nitrogen dioxide road concentrations have been compared with the monitored nitrogen dioxide road concentrations (i.e. at the verification location) and correction factor has been determined. Full details of the modelling verification are included in **Appendix 7.4**.

Significance Criteria

7.42. The significance of an environmental impact is determined not only by the magnitude of the impact but also by the sensitivity of the receptor, as shown in Table 7.4.

Table 7.4: Methodology for Determining Sensitivity

Sensitivity	Examples of Receptor
High	The receptor/resource has little ability to absorb change without fundamentally altering its present character, or is of international or national importance.
Moderate	The receptor/resource has moderate capacity to absorb change without significantly altering its present character, or is of high importance.
Low	The receptor/resource is tolerant of change without detriment to its character, is of low or local importance.

7.43. Each of the receptors considered in this noise assessment are of a residential nature, albeit temporary residences in the case of the hotel. These are considered to be moderately sensitive. Premises such as hospitals and nursing homes would be identified as highly sensitive, however there are no premises of this type in the area surrounding the site.

7.44. The significance of an environmental impact for both construction dust, road traffic dust and on site operational dust is determined by the interaction of magnitude and sensitivity. The Impact Significance Matrix used in this assessment is shown in Table 7.5.

Table 7.5: Impact Significance Matrix

Magnitude	Sensitivity		
	High	**Moderate**	**Low**
Major	Major Adverse/Beneficial	Major - Moderate Adverse/Beneficial	Moderate - Minor Adverse/Beneficial
Moderate	Major - Moderate Adverse/Beneficial	Moderate – Minor Adverse/Beneficial	Minor Adverse/Beneficial
Minor	Moderate - Minor Adverse/Beneficial	Minor Adverse/Beneficial	Minor - Negligible
Negligible / Not significant	Negligible	Negligible	Negligible

Earthworks/Construction Phase

7.45. The potential dust impacts have been assessed against a set of significance criteria as detailed in Table 7.6.

Table 7.6: Methodology for Assessing Magnitude of Particulate Emissions

Magnitude of Impact	Criteria for Impact Magnitude
Major	Major impact; issue justifies consideration as a determining factor in granting planning permission. Significant release of dust from the site. Reduction in visibility and rapid accumulation of

	dust on clean surfaces. Possible acute health effects on people with existing respiratory and/or cardiovascular disorders.
Moderate	Moderate impact, issue justifies consideration as a determining factor in granting planning permission. Visible release of dust from the site. No significant loss of visibility, but steady accumulation of dust observed on clean surfaces. Health effects are very unlikely.
Minor	Minor impact, issue need not be considered as a determining factor in granting planning permission. Air-borne dust occasionally visible over the site area. Slow accumulation of dust observed on clean surfaces, but not significantly quicker than on similar surfaces remote from, or upwind of, site activities. In comparison it would be similar to normal dust accumulation over the summer. No health effects associated with dust emission.
Negligible / Not significant	Negligible impact, issue need not be considered as a determining factor in granting planning permission. Very little change from baseline conditions. Change barely distinguishable approximating to a 'no change' situation.

Operational Phase

7.46. The impacts of the proposed development on concentrations of NO_2 and PM_{10} air quality have been evaluated against the air quality significance criteria contained in **Appendix 7.3**.

Planning Policy Context

National Planning Policy

National Air Quality Strategy and Air Quality Objectives

7.47. The UK National Air Quality Strategy (NAQS) was published in March 1997 fulfilling the requirement under the Environment Act 1995 for a national air quality strategy setting out policies for the management of ambient air quality. The Strategy sets objectives for eight pollutants, which may potentially occur in the UK at levels that give cause for concern. These pollutants are: nitrogen dioxide, sulphur dioxide, carbon monoxide, lead, fine particulates (PM_{10}), benzene, 1, 3–butadiene and ozone.

7.48. The Strategy was reviewed and a Review Report[2] and Consultation Document[3] published by the Department of the Environment, Transport and the Regions in 1999. A revised version (The Air Quality Strategy (AQS) 2000), which supersedes the 1997 Strategy was published in January 2000. The AQS 2000 strengthens the objectives for a number of pollutants with the exception of that for particulates, which was replaced with the less stringent EU limit value.

7.49. The objectives for the eight pollutants in the Strategy provide the basis of the implementation of Part IV of the Environment Act 1995. The Air Quality Strategy objectives for each

2 Department of the Environment, Transport and the Regions, January 1999. Report on the Review of the National Air Quality Strategy, Proposals to amend the Strategy.

3 Department of the Environment, Transport and the Regions 1999, The Air Quality Strategy for England, Scotland, Wales and Northern Ireland. A consultation document.

pollutant, except ozone, have been given statutory status in the Air Quality (England) Regulations, 2000[4]. The objectives have been amended by the Air Quality (England) (Amendment) Regulations 2002[5] ('the Regulations').

7.50. The Strategy's objectives for particles (PM_{10}), benzene and carbon monoxide were reviewed in September 2001, in particular, to take account of the latest health evidence and advice on the impact of particles on people's health. Following the review the UK Government and devolved administrations published a consultation paper on proposals for air quality objectives for particles, benzene, carbon monoxide and polyaromatic hydrocarbons[6].

7.51. In 2003, an Addendum[7] to the Air Quality Strategy 2000 was published. This Addendum incorporates the tighter air quality objectives for particles, benzene and carbon monoxide into the Air Quality Strategy. It further introduces an objective for polycyclic aromatic hydrocarbons (PAHs) in England, Scotland and Wales.

7.52. The Air Quality Framework Directive on ambient air quality assessment and management (96/62/EC) defines the policy framework within which limit values for twelve air pollutants have been set by four Daughter Directives. The 4th air quality Daughter Directive (2004/107/EC) relates to arsenic, cadmium, mercury, nickel and polycyclic aromatic hydrocarbons (PAHs) in ambient air. The aims of the Directive include establishing a target value for the concentration of arsenic, cadmium, nickel and benzo(a)pyrene in ambient air so as to avoid, prevent or reduce harmful effects on human health and on the environment as a whole. The requirements of the 4th Daughter Directive have been transposed into the Air Quality Standards (England) Regulations 2007[8]. These replace the 2003 Air Quality Limit Values Regulations.

7.53. In 2007 the Air Quality Strategy was revised. This latest strategy[9] does not remove any of the objectives set out in the previous strategy or its addendum, apart from replacing the provisional 2010 objective for PM_{10} in England, Wales and Northern Ireland with the exposure reduction approach for $PM_{2.5}$.

7.54. The current Air Quality Standards and objectives as set out in the Air Quality (England) Regulations 2000 and Regulations 2002 (as amended) are detailed in Table 7.7. Only PM_{10} and NO_2 are included as these are the pollutants considered in this assessment.

Table 7.7: Air Quality (England) Regulations 2000 and Amendment Regulations 2002 - Summary of Current Air Quality Standards and Objectives

Substance	Air quality objective levels	Date to be achieved and maintained thereafter
Nitrogen dioxide	200 micrograms per cubic metre, when expressed as an hourly mean, not to be exceeded more than 18 times a year	31 December 2005
	40 micrograms per cubic metre, when expressed as an annual mean	31 December 2005
PM_{10}	50 micrograms per cubic metre, when expressed	31 December 2004

4 The Air Quality (England) Regulations 2000. SI No 928.

5 The Air Quality (Amendment) Regulations 2002.

6 Department of Environment, Food and Rural Affairs, September 2001. A consultation document on proposals for air quality objectives for particles, benzene, carbon monoxide and polyaromatic hydrocarbons.

7 Department of Environment, Food and Rural Affairs, February 2003. The Air Quality Strategy for England, Scotland, Wales and Northern Ireland: Addendum.

8 Crown Copyright 2007, The Air Quality Regulations 2007, February 2007.

9 Department of Environment, Food and Rural Affairs, The Air Quality Strategy for England, Scotland, Wales and Northern Ireland. July 2007.

	as a 24 hour mean, not to be exceeded more than 35 times a year 40 micrograms per cubic metre or less, when expressed as an annual mean	 31 December 2004

7.55. Examples of where the Air Quality Objectives should/should not apply are included in Table 7.8. This table is taken from Local Air Quality Management Technical Guidance document LAQM.TG(03).

Table 7.8: Examples of where the Air Quality Objectives should/should not apply

Averaging Period	Objectives should apply at	Objectives should generally not apply at
Annual Mean	All background locations where members of the public might be regularly exposed. Building facades of residential properties, schools, hospitals, libraries, etc.	Building facades of offices or other places of work where members of the public do not have regular access. Gardens of residential properties. Kerbside sites or any other location where public exposure is expected to be short term.
24 hour (daily) mean 8 hour mean	All locations where the annual mean objectives would apply Gardens of residential properties[1]	Kerbside sites, or any other location where public exposure is expected to be short term.
1 hour mean	All locations where the annual mean and 24 and 8-hour objectives apply. Kerbside sites (e.g. pavements of busy shopping streets) Those parts of car parks and railway stations etc. which are not fully enclosed. Any outdoor locations to which the public might reasonably be expected to have access.	Kerbside sites where public would not be expected to have regular access.
15 min mean	All locations where members of the public might reasonably be exposed for a period of 15 minutes or longer.	
[1]: Such locations should represent parts of the garden where relevant public exposure is likely, for example where there are seating or play areas. It is unlikely that relevant public exposure would occur at the extremities of the garden boundary, or in front gardens although local judgement should always be applied.		

Local Air Quality Management and Guidance – National and Local

7.56. The Local Air Quality Management (LAQM) legislation in the Environment Act 1995 requires local authorities to conduct periodic reviews and assessments of air quality. The first round of review and assessment has now been completed. This followed a phased approach. All authorities were required to undertake the first stage and in areas identified in the first stage as having the potential to experience elevated levels of pollutants, an authority was required to undertake a more detailed second stage review.

7.57. Where it was predicted that one or more of the air quality objectives would be unlikely to be met by the end of 2005, local authorities were required to proceed to the third stage and if necessary, declare Air Quality Management Areas and make action plans for improvements in air quality in pursuit of the national air quality objectives.

7.58. Following the first round of review and assessment, in September 2001, Defra and the Devolved Administrations commissioned a detailed evaluation of the first round of air quality review and assessments undertaken by local authorities under Part IV of the Environment Act 1995. The evaluation report was published in March 2002 and one of the key recommendations was that the second round of air quality review and assessments should be carried out in two steps. Details of the two steps are provided in Policy Guidance document LAQM.PG(03) .

- An Updating and Screening Assessment for identifying those aspects that have changed since the first round of reviews and assessment. The Updating and Screening Assessment should include an explanation of the conclusion reached as to whether the local authority should proceed to a Detailed Assessment or not; and

- A detailed assessment of those pollutants and specific locations that have been identified as requiring further work – i.e. where members of the public are likely to be exposed over the averaging period of the Air Quality Objective.

7.59. Where a Detailed Assessment indicates that any of the air quality objectives are likely to be exceeded, an air quality management area (AQMA) must be designated, or the geographical boundaries of an existing AQMA must be confirmed.

7.60. A rolling programme of Updating and Screening Assessment and detailed assessment based on a three-year cycle, with interim annual progress reporting, has been laid down by DEFRA in its TG/03 policy guidance (DEFRA 2003).

Baseline Conditions

Background Dust Concentrations

7.61. There are no dust monitoring stations within the vicinity of the proposed development site to measure background dust levels. However, the Warren Spring Laboratory has assessed monitoring data over a number of years to determine typical dust deposition rates for different environments as given in Table 7.9.

Table 7.9: Typical UK Dust Deposition Rates

Location	**Dust Fall 1968/70 mg/m²/day**		**Dust Fall 1975/76 mg/m²/day**		**Dust Fall 1977/78 mg/m²/day**	
	Median	Range	Median	Range	Medium	Range
Rural	40	15-201	50	15-113	42	8-84
Town Outskirts	68	29-301	52	23-188	55	24-280
Town Centre	100	35-340	88	22-164	80	36-202
Industrial	206	54-504	92	58-259	100	30-266
BS Deposit Gauge						

Source: Digest of Environmental Pollution Statistics No. 2 1979

7.62. With regards to classifying the site to suggest dust deposition rate, the proposed development is in a town centre location. Long-term ambient dust levels are therefore expected to be in the region of 80 mg/m^2/day. However, in the short term, daily levels of over 200 mg/m^2/day could be experienced due, in particular, to adverse weather conditions and human activity.

7.63. Existing dust sources in the vicinity of the site include:

- Road traffic – exhaust particulates and emissions from the road surfaces.
- Some industrial and commercial activities.

Local Authority Review and Assessment

7.64. The first and second stages of the first round of review and assessment were completed by High Peak Borough Council in 2000. The report was issued in November 2000 and concluded that the air quality objectives would be met by the relevant dates and therefore no further assessment was necessary.

7.65. In July 2003 the Council produced an Updating and Screening Assessment (USA) report. The USA concluded that there were unlikely to be any exceedences of the air quality objectives and that further detailed assessment would not be required.

7.66. Following the 2003 USA the Council has produced Progress Reports in 2004, 2005 and 2007 (these report consider the most recent monitoring results and new local development that might affect air quality). Each of these reports concluded that there was no risk of the air quality objectives being exceeded.

7.67. To date the Council has not therefore declared any Air Quality Management Areas (AQMA) and consequently the site does not lie in an AQMA.

7.68. High Peak Borough Council carry out routine NO_2 diffusion tube monitoring at 13 sites within their catchment area, including the monitoring locations Spring Garden and Granby Road. The Spring Garden monitoring location is a roadside diffusion tube located immediately to the north of the site. The Granby Road monitoring location is an urban background location, situated approximately 480m to the southeast of the site.

7.69. The annual mean concentrations measured at the two monitoring sites from 2001 are shown in Table 7.10.

Table 7.10: NO_2 Air Pollutant Concentrations (Annual Mean)

Diffusion Tube Monitoring Location	Measured NO_2 Annual Mean Concentration µg/m^3					
	2001	2002	2003	2004	2005	2006
Spring Garden (SK061738)	44	31	30	32	27	24
Granby Road (SK066739)	21	13	17	17	13	11

7.70. The results confirm that for 2002 to 2006, both diffusion tubes recorded annual mean concentrations of NO_2 significantly below the objective concentrations of 40µg/m^3.

Background Air Pollutant Concentrations

7.71. The ADMS assessment needs to take into account background concentrations upon which the local, traffic derived pollution is superimposed. The data may be derived through local, long term, ambient measurements at background sites, remote from immediate sources of pollution or alternatively from default concentration maps, which are produced by the National Environmental Technology Centre (NETCEN) on behalf of the Department for Environment Food and Rural Affairs (DEFRA).

7.72. The nearest NO_2 background monitoring location to the site is at Granby Road, Fairfield (SK066739) where there is an NO_2 diffusion tube located. In addition to background NO_2 concentrations, the ADMS model also requires background monitoring information for the oxides of nitrogen (NO_x). As NO_x monitoring is not carried out at this monitoring location, it has not been possible to use this monitoring location to provide the background concentrations of NO_2. Therefore the background concentrations of NO_x and NO_2 used in this assessment have been taken from NETCEN.

7.73. There are no particulate matter monitoring stations which are considered representative, therefore the background concentrations of PM_{10} used in this assessment have been taken from NETCEN.

7.74. To obtain background concentrations for the years for which data are not available, the concentrations from the closest previous years have been adjusted using the Air Pollutant Adjustment Calculator (from the NETCEN website based on TG(03) Updated Guidance) for the pollutants NO_x, NO_2 and PM_{10}.

7.75. The annual average background concentrations for 2006, 2008, 2012 and 2017 used in the ADMS assessment are shown in Table 7.11.

Table 7.11: Background air pollutant concentrations (Annual Mean)

Pollutant	2006	2008	2012	2017
Nitrogen Dioxide ug/m^3	13.86	13.14	10.54	10.13
Nitrogen Oxides ug/m^3	16.55	15.19	13.12	12.12
Particles (PM_{10}) ug/m^3	18.61	17.85	17.09	16.87

Baseline ADMS Road Modelling Results.

7.76. The corrected and uncorrected baseline pollutant concentrations for the assessment in 2006, 2008, 2012 and 2017 are included in **Appendix 7.5**. The baseline assessment has only been carried out for existing sensitive receptors (ESR1 to ESR12).

Base Year 2008

7.77. The 2008 baseline annual mean NO_2 concentrations (corrected) are predicted to range from 12.45 to 25.35 ug/m^3, indicating that no exceedences of the air quality annual mean objectives are likely.

7.78. The 2008 baseline annual mean PM_{10} concentrations (uncorrected) are predicted to range from 17.91 to 18.16 ug/m^3, indicating that no exceedences of the air quality annual mean objectives are likely.

Future Baseline Year 2012

7.79. The 2012 baseline annual mean NO_2 concentrations (corrected) are predicted to range from 12.73 to 23.41 ug/m^3, indicating that no exceedences of the air quality annual mean objectives are likely.

7.80. The 2012 baseline annual mean PM_{10} concentrations (uncorrected) are predicted to range from 17.13 to 17.33 ug/m^3, indicating that no exceedences of the air quality annual mean objectives are likely.

Future Baseline Year 2017

7.81. The 2017 baseline annual mean NO_2 concentrations (corrected) are predicted to range from 10.63 to 19.97 ug/m^3, indicating that no exceedences of the air quality annual mean objectives are likely.

7.82. The 2017 baseline annual mean PM_{10} concentrations (uncorrected) are predicted to range from 16.91 to 17.07 ug/m^3, indicating that no exceedences of the air quality annual mean objectives are likely.

Identification and Evaluation of Key Impacts

Earthworks / Enabling Works Phase

Dust and Particulate Matter

7.83. During the earthworks/enabling works phase there will be the potential for various activities to temporarily generate nuisance dust and particulate matter (PM_{10}). The earthworks/enabling works will involve a number of activities which could potentially generate dust (nuisance dust and particulate matter). These include (but are not limited to):

- Break up of slabs and hardstanding
- Crushing of all artificial hard material
- Excavation and removal of contamination (if present)
- Backfill of excavations
- Levelling ground
- Trenching
- Vehicle movements on site and
- Windblown materials from the site.

7.84. With respect to potential nuisance dust, the dust generated during the earthworks/enabling works phase of the development would be likely to comprise mainly intermediate (10-30µm) to large (>30µm) sized particles. The DETR document 'Environmental Effects of Dust from Surface Mineral Workings' suggests that large sized particles will deposit within 100m of sources and intermediate sized particles are likely to deposit within 250-500m.

7.85. The site is located in a retail/residential area with residential properties located less than 100m, and between 100metres and 500 metres from the site. There is therefore the potential for a number of properties to be affected by dust if not adequately controlled.

Emissions from Plant and Vehicle Movements

7.86. Although particulate matter (PM_{10}) can form a fraction of dust, it is also released in vehicle exhaust emissions. Vehicles such as excavators, loading shovels and generators could act as a potential source of PM_{10} during the earthworks/enabling works phase. These smaller particles can travel up to 1km from the source but because dispersion takes place over large distances, the potential impact on existing background levels is not likely to be significant.

7.87. It is considered that the number of vehicles generated during the earthworks phase will not be significant relative to the existing traffic flows on the routes surrounding the development site; therefore an ADMS modelling exercise has not been carried out specifically for this phase of the development. The pollutant concentrations at existing sensitive receptor locations will not change significantly during the earthworks/enabling works phase and existing pollutant concentrations are likely to remain significantly below the Air Quality Objectives.

Construction Phase

7.88. The proposed development will be constructed in three phases. The activities proposed to be carried out in each of the phases are as follows:

- **Pre-Construction Phase:** This will include the provision of the temporary car park which will be operational throughout Phase 1.
- **Phase 1:** This will include the construction of the multi-storey car park and hotel.
- **Phase 2:** At the commencement of Phase 2, the temporary car park constructed in the Pre-Construction Phase will be removed as the new multi storey car park will be operational. This phase will also include the construction of the food store, offices and associated car parking.
- **Phase 3:** This will include the construction of the non-food retail units, simultaneous fit out of the hotel, food store and retail units and landscaping.

Dust and Particulate Matter

7.89. During each phase of the construction works there will be the potential for various activities to temporarily generate nuisance dust and particulate matter (PM_{10}). These include (but are not limited to) the construction of access roads, internal site roads, the car parking areas and individual buildings of the hotel, food store, non-food retail units and offices.

7.90. There will be a smaller potential for dust generation during this phase of works than during the earthworks /enabling works phase. It is likely that the activities being carried out during each phase of the construction works will be confined to specific zones of the site, although some vehicle and soil movements may take place in the other zones.

7.91. It is also likely that bricks and other construction materials will be stored on the site and during dry and windy periods dust emissions may occur from these materials.

7.92. There is the potential for dust generated during the construction phase to have a significant impact on the sensitive receptors located nearby. Mitigation measures will therefore need to be implemented to ensure that any residual impacts are not significant.

Emissions from Plant and Vehicle Movements

7.93. Although particulate matter (PM_{10}) can form a fraction of dust, it is also released in vehicle exhaust emissions. Vehicles such as excavators, loading shovels and generators could be a source of PM_{10} during the construction phase. These smaller particles can travel up to 1km from the source but because dispersion takes place over large distances, the potential

impact on existing background levels is not likely to be significant.

7.94. It is considered that the number of vehicles generated during the construction phase will not be significant relative to the existing traffic flows on the routes surrounding the development site; therefore an ADMS modelling exercise has not been carried out specifically for this phase of the development. The pollutant concentrations at existing sensitive receptor locations will not change significantly during the construction phase and pollutant concentrations are likely to remain significantly below Air Quality Objectives.

7.95. The potential impact of emissions from plant and vehicle movements associated with the construction phase of the development, at existing sensitive receptors, is considered to be negligible.

Operational Phase

Road Traffic Emissions – Existing Sensitive Receptor Locations

7.96. The results of the ADMS air quality assessment are included in **Appendix 7.5**. which shows the modelled air pollutant concentrations both without and with the development in place. Table 7.12 summarises the corrected modelled concentrations for NO_2 and Table 7.13 summarises the uncorrected modelled concentrations for PM_{10}.

Table 7.12: Summary of Results NO_2 – Existing Sensitive Air Quality Receptor Locations

Receptor	NO_2 Annual Mean ug/m^3 Without Development			NO_2 Annual Mean ug/m^3 With Development	
	2008 Base Year	2012 Future Base Year	2017 Future Base Year	2012 Opening Year - With Development	2017 Design Year - With Development
ESR1	25.35	23.41	19.97	25.21	21.56
ESR2	21.65	20.35	17.31	22.75	19.42
ESR3	17.71	17.04	14.36	18.97	16.00
ESR4	13.56	13.62	11.36	14.48	12.09
ESR5	14.10	14.09	11.80	15.34	12.95
ESR6	18.55	17.77	15.04	20.14	17.10
ESR7	13.99	14.04	11.80	16.46	13.97
ESR8	19.17	18.21	15.38	19.39	16.34
ESR9	21.54	20.22	17.15	21.82	18.51
ESR10	16.53	16.13	13.63	17.01	14.36
ESR11	16.77	16.33	13.84	17.25	14.57
ESR12	12.45	12.73	10.63	13.12	10.94

Table 7.13: Summary of Results PM_{10} – Existing Sensitive Air Quality Receptor Locations

Receptor	PM_{10} Annual Mean ug/m^3 without development			PM_{10} Annual Mean ug/m^3 With development	
	2008 Base Year	2012 Future Base Year	2017 Future Base Year	2012 Opening Year - With Development	2017 Design Year - With Development
ESR1	18.16	17.33	17.07	17.36	17.10
ESR2	18.08	17.27	17.03	17.32	17.07

ESR3	18.00	17.21	16.97	17.24	17.00
ESR4	17.92	17.15	16.92	17.16	16.93
ESR5	17.94	17.16	16.93	17.18	16.95
ESR6	18.02	17.22	16.99	17.27	17.03
ESR7	17.94	17.16	16.93	17.21	16.98
ESR8	18.03	17.23	16.99	17.25	17.01
ESR9	18.08	17.26	17.02	17.29	17.05
ESR10	17.99	17.20	16.96	17.21	16.98
ESR11	17.99	17.20	16.97	17.22	16.98
ESR12	17.91	17.13	16.91	17.14	16.91

7.97. The significance of the differences between the 'With Development' and 'Without Development' scenarios for 2012 and 2017 has been assessed in detail for nitrogen dioxide and particulate matter. Table 7.14 shows the differences in concentrations and the percentage differences for NO_2 and PM_{10}. Negative changes represent a beneficial impact and positive changes indicate an adverse impact.

Table 7.14: Differences in NO_2 and PM_{10} Annual Mean Concentrations ug/m^3 (percentage change +/-)

Receptor	Changes in 2012 NO_2. Annual Mean ug/m^3	Changes in 2012 PM_{10}. Annual Mean ug/m^3	Changes in 2017 NO_2. Annual Mean ug/m^3	Changes in 2017 PM_{10}. Annual Mean ug/m^3
ESR1	1.80 (+7.69%)	0.04 (+0.21%)	1.59 (+7.97%)	0.03 (+0.18%)
ESR2	2.40 (+11.80%)	0.05 (+0.28%)	2.11 (+12.21%)	0.04 (+0.24%)
ESR3	1.93 (+11.34%)	0.04 (+0.21%)	1.64 (+11.45%)	0.03 (+0.18%)
ESR4	0.86 (+6.32%)	0.02 (+0.09%)	0.73 (+6.43%)	0.01 (+0.08%)
ESR5	1.25 (+8.89%)	0.02 (+0.14%)	1.15 (+9.73%)	0.02 (+0.13%)
ESR6	2.38 (+13.37%)	0.05 (+0.28%)	2.06 (+13.71%)	0.04 (+0.24%)
ESR7	2.43 (+17.29%)	0.05 (+0.31%)	2.17 (+18.36%)	0.05 (+0.27%)
ESR8	1.17 (+6.45%)	0.02 (+0.12%)	0.97 (+6.28%)	0.02 (+0.10%)
ESR9	1.59 (+7.87%)	0.03 (+0.17%)	1.36 (+7.91%)	0.02 (+0.15%)
ESR10	0.89 (+5.50%)	0.02 (+0.10%)	0.73 (+5.36%)	0.01 (+0.08%)
ESR11	0.91 (+5.59%)	0.02 (+0.10%)	0.73 (+5.28%)	0.01 (+0.08%)
ESR12	0.39 (+3.07%)	0.01 (+0.04%)	0.31 (+2.95%)	0.01 (+0.03%)

2012 'With Development'

7.98. The 2012 'with development' annual mean concentrations (corrected) of NO_2 are predicted to range from 13.12 to 25.21 ug/m^3. The highest increase in annual mean concentrations at a sensitive receptor is predicted to be 2.43 ug/m^3 (+17.29%).

7.99. No exceedences of the annual mean air quality objective for NO_2 (40 ug/m^3) are predicted to occur at any of the existing sensitive receptors.

7.100. The 2012 'with development' annual mean concentrations (uncorrected) of PM_{10} are predicted to range from 17.14 to 17.36 ug/m^3. The highest increase in annual mean concentrations at a sensitive receptor is predicted to be 0.05 ug/m^3 (+0.37%).

7.101. No exceedences of the annual mean air quality objective for PM_{10} (40 ug/m^3) are predicted to occur at any of the existing sensitive receptors.

2017 'With Development'

7.102. The 2017 'with development' annual mean concentrations (corrected) of NO_2 are predicted

to range from 10.94 to 21.56 ug/m^3. The highest increase in annual mean concentrations at a sensitive receptor is predicted to be 2.17 ug/m^3 (+18.36%).

7.103. No exceedences of the annual mean air quality objective for NO_2 (40 ug/m^3) are predicted to occur at any of the existing sensitive receptors.

7.104. The 2017 'with development' annual mean concentrations (uncorrected) of PM_{10} are predicted to range from 16.91 to 17.10 ug/m^3. The highest increase in annual mean concentrations at a sensitive receptor is predicted to be 0.05 ug/m^3 (+0.27%).

7.105. No exceedences of the annual mean air quality objective for PM_{10} (40 ug/m^3) are predicted to occur at any of the existing sensitive receptors.

7.106. Using the air quality significance criteria detailed in **Appendix 7.3** the impacts can be assessed at each of the 12 receptors. The findings for 2012 and 2017, based on the greatest predicted increases for all 12 receptors, are summarised in Table 7.15.

Table 7.15: Impact Assessment for NO_2 and PM_{10} in 2012 and 2017

Pollutant	Likely significance of impact	
	2012 With Development	**2017 With Development**
NO_2	ESR2, ESR3, ESR6 and ESR7: Moderate Impact ESR1, ESR4, ESR5, ESR8, ESR9, ESR10, ESR11 and ESR12 : Minor Impact	ESR2, ESR3, ESR6 and ESR7: Moderate Impact ESR1, ESR4, ESR5, ESR8, ESR9, ESR10, ESR11 and ESR12 : Minor Impact
PM_{10}	ESR1 – ESR12: Negligible Impact	ESR1 – ESR12: Negligible Impact

7.107. As summarised in Table 7.15, in 2012 and 2017, the changes in concentrations of NO_2 with the development in place will be of moderate adverse impact at ESR2, ESR3, ESR6 and ESR7. Taking into account the sensitivity of these existing receptors, the changes in concentrations of NO_2 with the development in place will be of moderate impact.

7.108. As summarised in Table 7.15, in 2012 and 2017, the changes in concentrations in NO_2 at ESR1, ESR4 to ESR5 and ESR8 to ESR12 will be of minor adverse impact. Taking into account the sensitivity of these existing receptors, the changes in concentrations of NO_2 with the development in place will be of minor impact.

7.109. As the pollutant concentrations are significantly below the air quality objectives at all of the existing receptors i.e. the highest modelled NO_2 concentration was 25.21 ug/m^3, the changes in concentrations of NO_2 are not considered to be significant for any of the scenarios considered.

7.110. The changes in concentrations of PM_{10} for all 12 receptors will be negligible. It is therefore not considered necessary to recommend measures to mitigate vehicle exhaust emissions.

Road Traffic Emissions – Proposed on-site receptor locations

7.111. The ADMS modelling has also been completed for the proposed location of the on-site hotel. The corrected modelling results for the proposed location of the hotel are shown in Table 7.16.

Table 7.16: Corrected NO_2 and PM_{10} Modelling Results for Proposed Sensitive Receptors in 2010 and 2015. Impact Assessment for NO_2 and PM_{10} in 2012 and 2017

Receptor	2012 With Development		2017 With Development	
	NO_2 Annual mean (ug/m^3) with Development (corrected)	PM_{10} Annual mean (ug/m^3) with development (uncorrected)	NO_2 Annual mean (ug/m^3) with Development (corrected)	PM_{10} Annual mean (ug/m^3) with development (uncorrected)
PR1	16.54	17.20	13.94	16.97
PR2	18.94	17.25	16.08	17.01
PR3	26.57	17.41	22.84	17.14
PR4	13.91	17.15	11.59	16.92
PR5	14.77	17.17	12.35	16.94
PR6	17.56	17.22	14.83	16.98
PR7	30.92	17.50	26.78	17.23
PR8	20.88	17.29	17.75	17.04
PR9	26.23	17.40	22.55	17.14
PR10	19.54	17.26	16.60	17.02
PR11	23.22	17.34	19.92	17.08
PR12	21.63	17.31	18.56	17.07
PR13	16.44	17.20	13.84	16.97
PR14	14.79	17.17	12.40	16.94
PR15	14.35	17.16	12.04	16.93
PR16	17.33	17.23	14.72	16.99
PR17	14.17	17.16	11.88	16.93
PR18	18.34	17.25	15.66	17.01
PR19	23.02	17.34	19.76	17.09

2012 'With Development'

7.112. The 2012 'With Development' annual mean concentration (corrected) of NO_2 are predicted to range from 13.91 to 30.92ug/m^3. Therefore the air quality objective for NO_2 is not predicted to be exceeded at the proposed location of the hotel and across the site.

7.113. The 2012 'With Development' annual mean concentration (corrected) of PM_{10} is predicted to range from 17.15 to 17.50 ug/m^3. Therefore the air quality objective for PM_{10} is not predicted to be exceeded at the proposed location of the hotel and across the site.

2017 'With Development'

7.114. The 2017 'With Development' annual mean concentration (corrected) of NO_2 are predicted to range from 11.59 to 26.78ug/m^3. Therefore the air quality objective for NO_2 is not predicted to be exceeded at the proposed location of hotel and across the site.

7.115. The 2012 'With Development' annual mean concentration (corrected) of PM_{10} is predicted to range from 16.92 to 17.23 ug/m^3. Therefore the air quality objective for PM_{10} is not predicted to be exceeded at the proposed location of the hotel and across the site.

7.116. It is recognised that for the areas of the development outside buildings, assessment of pollutant concentrations against the 1 hour mean objective may be more appropriate as people would be exposed for only short periods of time (See Table 7.8). However, as the predicted concentrations across the site are significantly below the annual mean objective for NO_2 and PM_{10}, it is unlikely that the 1 hour mean concentrations would exceed the air quality objectives.

7.117. Also the ADMS modelling does not include on-site vehicle movements associated with the hotel, retail units, offices and car parking areas of the development. However given that the ambient pollutant concentrations will be below significantly below the objectives, the contribution to emissions from on-site vehicle activity is unlikely to be significant. It is not therefore necessary to recommend measures to mitigate vehicle exhaust emissions.

Mitigation Measures

Earthworks/Enabling Works Phase

Dust and Particulate Matter

7.118. The implementation of effective mitigation measures during the earthworks/enabling works phase will substantially reduce the potential for nuisance dust and particulates to be created. It is recommended that as part of the Contractor's responsibilities, the contractor is required to ensure that:

- Suitable precautions are implemented at all times to prevent off site migration of pollutants via airborne dust and vapours.
- Suitable precautions are taken to prevent the spread of mud and debris on public highways.

7.119. During the excavation works a number of measures could be employed to minimise dust generation and its migration off site.

- A series of 'Best Practicable Means' measures to be employed to minimise the potential for dust to be generated.
- Traffic to be restricted to defined routes across the site so as to reduce the area within which dust suppression measures are required.
- Mobile water bowsers and sprayers to be deployed on site where required to dampen unpaved haul roads to prevent dust emissions.
- Whilst materials are being exported and imported from and to the site, a road sweeper could be employed to ensure local highways are kept free from dust forming materials.

Plant and Vehicle emissions

7.120. Static and mobile plant engines and exhaust systems should be maintained so that exhaust emissions do not breach statutory emissions limits set for the vehicle/equipment type and mode of operation. Plant should be serviced regularly and should not be left running unnecessarily.

7.121. It is considered that the number of vehicle movements likely to be generated during the earthworks/enabling works phase is not anticipated to be significant relative to the existing traffic flows on the routes surrounding the development site and mitigation measures will not be required.

Residual Impacts

7.122. The implementation of effective mitigation measures during the earthworks/enabling works phase will substantially reduce the potential for nuisance dust and particulate matter to be generated and any residual impacts should not be significant.

7.123. The maintenance of site plant and vehicles should ensure that emissions are minimised and that the residual impacts are not significant. The residual impact of the earthworks/enabling works phase traffic emissions will also not be significant.

Construction Phase

Dust and Particulate Matter

7.124. The implementation of effective mitigation measures can substantially reduce the potential for nuisance dust and particulate matter to be generated.

7.125. A best practice dust mitigation plan would be written and implemented for the site. This would set out the practical measures that could be incorporated as part of a best working practice scheme. Examples of measures, which could be incorporated, are detailed in the BRE document 'Control of dust from construction and demolition activities'. They include:

- Dust from general traffic at the site during construction works would be controlled by regular damping down of on-site haul routes and by the use of the wheel wash at exits onto public roads.
- The site traffic would be restricted to watered or treated haul roads
- Minimisation of vehicle movements and limitation of vehicle speeds – the slower the vehicle speeds, the lower the dust generation.
- Minimisation of the duration of the material handling activity and the amount of handling. Material handling methods should also aim to minimise the generation of airborne dust.
- When transporting dusty materials and aggregates enclosed or sheeted vehicles should be used.
- Protecting surfaces and exposed material from winds until disturbed areas are sealed and stable.
- Exposed stored materials should be damped sown and stored as far from sensitive receptors as possible.
- Activities that generate large amounts of dust should be avoided during windy conditions.

7.126. Many of these measures would be implemented during the earthworks/enabling works phase and would continue on commencement of the phases of construction works.

7.127. It is recognised that the final design solutions will be developed with the input of the Contractor to maximise construction efficiencies, use of modern construction techniques and sustainable materials and to incorporate the particular skills and experience offered by the successful contractor.

7.128. The details of the proposed construction activities and mitigation measures should be discussed in some detail with the local authority, once a contractor for the works, has been appointed. A dust management plan should be agreed and implemented prior to the construction works occurring.

Plant and Vehicle Emissions

7.129. Static and mobile plant engines and exhaust systems should be maintained so that exhaust emissions do not breach statutory emissions limits set for the vehicle/equipment type and mode of operation. Plant should be serviced regularly and should not be left running unnecessarily. This would help to minimise any potential emissions.

7.130. It is considered that the number of vehicle movements likely to be generated during the construction phase is not significant relative to the existing traffic flows on the routes surrounding the development site and mitigation measures will not be required.

Residual Impacts

7.131. The implementation of effective mitigation measures during the construction phase will substantially reduce the potential for nuisance dust and particulate matter to be generated and any residual impacts should not be significant.

7.132. The maintenance of site plant and vehicles should ensure that emissions are minimised and that the residual impacts are not significant. The residual impact of construction phase traffic emissions will also not be significant.

Operational Phase

Road Traffic Emissions – Existing Sensitive Receptor Locations

7.133. ADMS air quality modelling has been carried out to assess the potential impact of the development at existing sensitive receptor locations.

7.134. The assessment indicates that all pollutant concentrations will be below the air quality objectives for NO_2 and PM_{10} at existing sensitive receptors.

7.135. As summarised in Table 7.15, in 2012 and 2017, the changes in concentrations of NO_2 with the development in place will be of moderate adverse impact at ESR2, ESR3, ESR6 and ESR7. Taking into account the sensitivity of these existing receptors, the changes in concentrations of NO_2 with the development in place will be of moderate impact.

7.136. As summarised in Table 7.15, in 2012 and 2017, the changes in concentrations in NO_2 at ESR1, ESR4 to ESR5 and ESR8 to ESR12 will be of minor adverse impact. Taking into account the sensitivity of these existing receptors, the changes in concentrations of NO_2 with the development in place will be of minor impact.

7.137. As the pollutant concentrations are significantly below the air quality objectives at all of the existing receptors, the changes in concentrations of NO_2 are not considered to be significant for any of the scenarios considered.

7.138. The changes in concentrations of PM_{10} will not be significant for any of the scenarios considered.

7.139. Because the predicted NO_2 and PM_{10} concentrations for all the scenarios are below the air quality objective of 40ug/m^3 it is not considered necessary to recommend measures to mitigate vehicle exhaust emissions.

7.140. Although it is not considered necessary to recommend measures to mitigate vehicle exhaust emissions, in support of the planning application and as part of the development proposals, Ashley Helme Associates have prepared a Travel Plan Framework for the development. The objectives of the travel plan are to contribute to reducing the traffic likely to be generated by the development and promote accessibility to the development by sustainable modes of transport. This in turn will have a beneficial impact on vehicle emissions.

7.141. The emphasis of the travel plan is placed on the encouragement of employees of the food store, hotel, retail units and offices to use sustainable transport choices. This includes the incorporation of following provisions within the development proposals:

- Secure cycling spaces.
- Shower facilities for staff within the food store.
- Ensuring the total number of car park spaces does not exceed the maximum standard of High Peak Borough Council.

- No designated/reserved staff car parking spaces.

7.142. In addition to the encouragement of employees to use sustainable transport choices, the occupants of the food store, hotel, retail units and offices are to promote sustainable travel awareness and transport choices to customers of the development. These include the opportunity to walk, cycle and/or travel to the site by bus.

7.143. It is considered that implementation of the travel plan will reduce the potential impact of the road traffic emissions likely to be generated by the development, at existing sensitive receptors.

Residual Impacts

7.144. The residual impacts of the operational phase traffic emissions will not be significant.

Road Traffic Emissions – Proposed On-Site Receptor Locations

7.145. ADMS air quality modelling has been carried out to assess the potential impact at the proposed sensitive areas of the development, i.e. the hotel. The assessment indicates that all pollutant concentrations at the proposed location of the hotel and across the site will be below the air quality objectives for NO_2 and PM_{10}.

7.146. Because the predicted NO_2 and PM_{10} concentrations are below the air quality objectives it is not considered necessary to recommend measures to mitigate vehicle exhaust emissions.

Residual Impacts

7.147. The residual impacts of the operational phase traffic emissions will not be significant.

Summary Findings

7.148. This Chapter has assessed the air quality impacts associated with the earthworks/enabling works, construction and operational phases of the proposed development.

7.149. The potential for dust and particulate matter to be generated during the earthworks/enabling works and construction phases has been assessed. The implementation of effective mitigation measures during these phases will substantially reduce the potential for nuisance dust and particulate matter to be generated and any residual impacts should not be significant. Overall, taking into account the sensitivity of the receptors and the predicted residual impacts, the impact of the earthworks/enabling works and construction phases is considered to be negligible.

7.150. The assessment has also considered the potential emissions from site plant and vehicles during the earthworks/enabling works and construction phases. It has also considered the potential emissions from traffic during each of these phases.

7.151. The assessment concludes that the maintenance of site plant and vehicles will ensure that emissions are minimised and that the residual impacts are not significant. The residual impact of earthworks/enabling works and construction phase traffic emissions will also not be significant.

7.152. ADMS air quality modelling has been carried out to assess the potential impact of emissions, from traffic generated by the development, at existing sensitive receptor locations. The assessment indicates that all pollutant concentrations will be below the air quality objectives for NO_2 and PM_{10}.

7.153. Taking into consideration the sensitivity of the existing receptors ESR2, ESR3, ESR6 and ESR7, the changes in concentrations of NO_2 were determined to be of moderate impact. Whereas the changes in concentrations of NO_2 at existing sensitive receptors ESR1, ESR4,

ESR5, ESR8 and ESR12, were determined to be of minor impact. However, the pollutant concentrations are significantly below the air quality objectives at all of the existing receptors. It is not therefore considered necessary to recommend measures to mitigate vehicle exhaust emissions.

7.154. The changes in concentrations of PM_{10} were determined as insignificant for each of the existing receptors and scenarios considered. It is not therefore considered necessary to recommend measures to mitigate vehicle exhaust emissions.

7.155. Although it is has not been considered necessary to recommend any specific mitigation measures to reduce the potential impacts of the operational phase of the development at existing sensitive receptors, a travel plan will be implemented as part of the development proposals. The implementation of the travel plan will in turn have a beneficial impact on mitigating vehicle emissions.

7.156. ADMS air quality modelling has also been carried out to assess the potential impact of emissions, from traffic generated by the development, at the proposed sensitive areas of the development. The assessment indicates that all pollutant concentrations at the proposed location of the hotel and across the site will be below the air quality objectives for NO_2 and PM_{10}.

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Appendices

Appendix 7.1: Traffic Flow Information Used for the ADMS Assessment

Appendix 7.2: Wind Rose

Appendix 7.3: Air Quality Significance Criteria

Appendix 7.4: Model Validation, Verification and Adjustment

Appendix 7.5: NO_2 and PM_{10} Concentrations Corrected and Uncorrected

Appendix 7.6: Figure 7.1

Appendix 7.6: Figure 7.2

8. Noise and Vibration Assessment

Introduction

8.1. This chapter addresses the various noise and vibration impacts associated with the proposed development. The assessment considers the impacts generated by the earth works/enabling works, construction phase and operational phase of the proposed development. Impacts are considered at both existing noise sensitive locations and also at the potentially sensitive elements of the development itself (i.e. the hotel).

Assessment Methodology and Significance Criteria

Consultation and Scope of Works

8.2. Prior to carrying out the noise assessment, as part of the EIA, a Scoping Report was prepared and submitted by Indigo in September 2007.

8.3. With respect to noise, the Scoping Report stated:

> *'The potential noise impact of the development will be assessed at all phases of the development including earthworks, construction and operation'.*
>
> *'The noise assessment for the earthworks and construction phases would need to consider the potential impact of the site works on existing sensitive receptor locations. The potential sources of noise would include plant on site and also construction vehicles moving to and from site'.*
>
> *'The noise assessment for the operational phase would need to consider both the suitability of the site for development (i.e. the hotel) and the potential noise impact of the operation of the development on existing receptor locations'.*
>
> *'A noise survey would be undertaken in those areas of the site where noise sensitive land uses are proposed. In addition, background noise monitoring would be carried out at existing receptor locations as required'.*

8.4. The scope of works for the noise assessment has been developed further through discussion with Ian Nicholls, Environmental Health Officer, at High Peak Borough Council.

8.5. Impacts on ambient noise levels at existing locations will potentially occur during the earthworks/enabling works, construction phase and operational phase where activities taking place will have the potential to generate noise. The potential impacts associated with the proposed development are:

- **Earthworks/enabling works and Construction Phase:** Impact of noise and vibration from earthworks and construction of the built development on existing, nearby sensitive receptor locations. Also, the impact of noise from additional traffic generated by the construction vehicles using the existing road network, on noise sensitive receptors.

- **Operational Phase – Road Traffic Noise and Existing Sensitive Receptors:** Impact of noise from additional traffic generated by the development, using the existing road network, on noise sensitive receptors.

- **Operational Phase – Existing Sensitive Receptors and Ancillary Noise:** The impact of ancillary type noise sources associated with the proposed development retail food store have been considered for sensitive receptor locations. The potential for vibration to be generated during the operational phase has also been considered.

- **Operational Phase – Proposed Sensitive Receptors and Noise:** It has also been necessary to consider the noise levels at the proposed noise sensitive areas of the site, i.e. the hotel. The potential for vibration to affect proposed sensitive receptors has also been considered.

8.6. In addition to the assessment of the potential noise impacts associated with the proposed development, the potential cumulative impacts of the Crescent and Thermal Spa development have been considered.

Assessment Methodology Adopted

Earthworks/Enabling Works and Construction Phase

Noise from Earthworks/Enabling Works and Construction Activities

8.7. The activities associated with the earthworks/enabling works and construction phases of the proposed development will have the potential to generate noise and create an impact on the surrounding area.

8.8. Guidance on the prediction and assessment of noise from development sites is given in British Standard 5228 Part 1 1997 “Noise and Vibration control on Construction and Open sites” (BS5228). Construction noise can have disturbing effects on the surrounding neighbourhood. The effects are varied and are complicated further by the nature of the site works, which will be characterised by noise sources, which will change location through the construction period.

8.9. BS5228 does not recommend any limits for noise from construction and open sites, but indicates that the duration of site operations is an important consideration. Higher noise levels may be acceptable if it is known that the levels will occur for a limited period.

8.10. The Existing Sensitive Receptors (ESRs) most likely to be affected by the earthworks and construction phase works of the development are detailed in Table 8.1:

Table 8.1: Existing Noise Sensitive Receptor Locations

Receptor	Direction from the Site	Distance from the Site
1. Wye Street / Spring Gardens	S	10m
2. Bridge Street	NE, E and SE	30m to 110m
3. The Quadrant / St John’s Road	W	20m

8.11. For the purpose of this noise assessment, the occupants of the residential properties are considered most likely to be sensitive to noise although it is recognised that some offices and retail premises on Wye Street and Spring Garden to the south of the site, could also potentially be affected by noise during the construction works.

8.12. The noise assessment for the construction phase details baseline daytime noise levels

recorded at the locations in Table 8.1 and outlines the main construction activities that could give rise to noise impacts at existing receptors in the vicinity of the site. It also sets out details of 'best practice' management and control measures to ensure that impacts are minimised as far as possible.

Noise from Construction Vehicles:

8.13. In addition to considering the impact of the proposed development construction works the noise impact of construction vehicles has also been considered. The existing receptors most likely to be affected by noise from the construction vehicles travelling to and from the development site are detailed in paragraphs 8.10 and 8.11 of this chapter.

Vibration from Earthworks/Enabling Works and Construction Activities:

8.14. Work involving heavy plant on an open site is likely to generate vibration, which may, in certain circumstances, propagate beyond the boundary of the site. In situations where particularly heavy plant, vibrating compaction equipment or piling rigs are being used close to the site boundary, nearby properties may experience ground-borne vibration.

8.15. The existing receptors most likely to be affected by vibration generated by the earthworks and construction phase works of the development are detailed in paragraphs 8.10 and 8.11 of this chapter. It should be noted that listed buildings are also situated in both the Spring Gardens and Quadrant locations. It is possible that these properties could be affected by groundborne vibration from any piling at the site.

8.16. It is not possible to mitigate vibration emissions from an open site. It is important therefore to examine the proposed working method to ascertain what, if any, operations would be likely to cause unacceptable levels of vibration at nearby sensitive locations. It is possible that these operations could be modified to reduce their vibration impacts.

Operational Phase

Road Traffic Noise and Existing Sensitive Receptors

8.17. The operational phase of the development will generate additional traffic movements on the existing road network. These additional vehicle movements have the potential to increase road traffic noise levels at existing receptors located adjacent to the main routes to and from the development.

8.18. The current and future traffic noise levels at a number of sensitive receptors; both with and without the development in place, have been predicted using the Department of Transports' Technical Memorandum 'Calculation of Road Traffic Noise' (CRTN), 1988. The memorandum was prepared to enable entitlement under the Noise Insulation Regulations 1975 to be determined but it is stated in the document that the guidance is equally appropriate to the calculation of traffic noise for land use planning purposes.

8.19. The procedures outlined in CRTN assume typical traffic and noise propagation conditions that are consistent with moderately adverse wind velocities and directions during specified periods. In CRTN, all noise levels can be expressed in terms of the index L10 (18 hour) dB(A). The value of L10 (18 hour) dB(A) is the noise level which is exceeded for just 10% of the time over an 18 hour period.

8.20. The data used in the road traffic noise assessment is detailed in the Traffic Assessment (TA) produced by Ashley Helme Associates Ltd, the traffic and transportation consultants for the proposed development. The TA includes the following existing highway links which are relevant to this assessment:

- New Wye Street

- Spring Gardens
- Bridge Street
- Station Road
- Charles Street
- The Quadrant
- St John's Road
- A6 Fairfield Road
- A6 Bakewell Road

8.21. The noise assessment requires 18-hour traffic flows for the routes likely to be affected by development traffic. The flows used in the noise assessment are included in **Appendix 8.1**. Detailed information regarding the assumptions made in determining the traffic data used in this assessment are set out in the Transport Assessment at **Appendix 6.1**.

8.22. The traffic flow data used relates to a slightly different previous iteration of the scheme to that submitted. That scheme included a marginally higher office content (784sqm GEA rather than the 430sqm proposed). The implications of this change however are negligible and it was not considered necessary to retest the assessment of noise and vibration, as the findings and conclusions remain valid.

8.23. For this noise assessment, CRTN has been used to determine the noise levels at each existing sensitive receptor, for a total of 5 scenarios.

- Scenario 1: 2008 Baseline year.
- Scenario 2: 2012 Future Baseline year (projected year for development completion), Without the Development.
- Scenario 3: 2012 (projected year for development completion) With the Development.
- Scenario 4: 2017 Future Baseline year (projected design year when the development will be fully operational) Without the Development.
- Scenario 5: 2017 (projected design year when the development will be fully operational) With the Development.

8.24. An assessment of the change in noise levels has been carried out at 12 existing, representative sensitive residential locations. The existing receptor locations (identified as CRTN1 to CRTN12) have been chosen along those routes most likely to be affected by traffic associated with the proposed development.

8.25. Details of the sensitive receptor locations are given in Table 8.2. The location of each existing sensitive receptor is shown on Figure 8.1 in **Appendix 8.3**.

Table 8.2: Existing Noise Sensitive Receptor Locations Considered for CRTN Predictions

CRTN Receptor Number	Address	Grid Reference	
		X	Y
CRTN 1	Flat 1, 5 Woodland View, Fairfield Road	406377	373618
CRTN 2	109 Spring Gardens	406302	373606
CRTN 3	Railway Hotel, 8 Bridge Street	406255	373639
CRTN 4	High Peak Halls, Bridge Street	406287	373665
CRTN 5	26 Bridge Street	406216	373723
CRTN 6	7-11 Bridge Street	406206	373640
CRTN 7	81-83 Bridge Street	406150	373627
CRTN 8	1, The Quadrant	405869	373621
CRTN 9	9, Buxton Centre, The Quadrant	405820	373652
CRTN 10	10 Cavendish Circus	405773	373610
CRTN 11	6a George mansions, St Johns Road	405734	373592
CRTN 12	Devonshire Royal Campus, Devonshire Road	405673	373615

8.26. Impacts will also be felt at receptors adjacent to and beyond those listed above. However impacts at these receptors will be less than at the listed receptors. With increasing distance from these road links, impacts will decline to zero.

Baseline Road Traffic Noise Measurements

8.27. In addition to the CRTN memorandum which can be used to establish the noise levels at the chosen receptors, a background noise survey has been carried out to provide supporting baseline noise level information for the existing receptors identified for the traffic noise assessment. Baseline CRTN noise measurements were obtained from two monitoring locations on Bridge Street i.e. to characterise background road traffic noise levels at those locations likely to be affected. The noise monitoring is discussed in detail in paragraphs 8.79 to 8.84 of this chapter.

Existing Sensitive Receptors and Ancillary Noise

8.28. The proposed development will have the potential to generate noise from sources other than road traffic. An overview of the potential ancillary noise sources has been carried out and an assessment of their likely significance has been made. Where appropriate, mitigation measures have been recommended.

8.29. Measures to mitigate noise will be included in the detailed design of these parts of the development to ensure that a significant noise impact is not created at existing noise sensitive receptor locations.

Existing Sensitive Receptors and Vibration

8.30. It is considered that the operational phase of the development is unlikely to produce any significant groundborne vibration. Vibration from the operation of the completed development has not therefore been considered.

Proposed Sensitive Receptors and Noise

8.31. In addition to assessing the noise impact of the development at existing receptors, an assessment is required to consider any potentially noise sensitive areas of the site i.e. the proposed hotel and offices.

8.32. The potential impacts of the existing and future sources of noise at the hotel location have been assessed with reference to the methodology set out in *Planning Policy Guidance Note 24: Planning and Noise*, 1994 (PPG24). PPG24 outlines the considerations to be taken into account in determining planning applications both for noise-sensitive development and for those activities which will generate noise.

8.33. In addition to the requirements of PPG24, the internal daytime and night-time noise levels within the hotel will need to meet the requirements of the *World Health Organisation (WHO) Guidelines for Community Noise*, 1999 and British Standard 8233:1999, *Sound Insulation and Noise Reduction for Buildings* – Code of Practice (BS8233).

8.34. The potential impacts of the existing and future sources of noise at the proposed offices have been assessed with reference to the requirements for internal daytime noise levels in offices areas set out in BS8233.

8.35. The guidance set out in PPG24, WHO Guidelines and BS8233 is discussed in greater detail in paragraphs 8.61 to 8.68 of this chapter.

Proposed Sensitive Receptors and Vibration:

8.36. It is considered that the road traffic on the existing road network immediately adjacent to the site and on the proposed site access roads is unlikely to produce any significant groundborne vibration at the site. The impact of vibration at proposed sensitive areas of the development has not therefore been considered.

Cumulative Impact Assessment

8.37. High Peak Borough Council have that requested the cumulative impacts associated with the proposed development and the Crescent and Thermal Spa development be assessed. The Crescent and Thermal Spa development involves the refurbishment and extension of the existing Crescent Building located approximately 100m to the south east of the proposed Spring Gardens Shopping Centre development.

8.38. A Transport Assessment for the Crescent and Thermal Spa development concluded that the number of vehicle movements likely to be generated by the development would not be significant. Similarly, Ashley Helme Associates, the transport consultants for the Spring Gardens development, have confirmed that traffic from the Crescent and Thermal Spa development would not be significant.

8.39. Road traffic noise, due to traffic associated with the Crescent and Spa development are unlikely to significantly change the noise levels predicted for the operational phase of the proposed Spring Gardens Shopping Centre development.

8.40. A cumulative noise impact assessment of the completed Spring Gardens Shopping Centre and Crescent and Thermal Spa developments has not therefore been necessary.

Significance Criteria

8.41. The significance of an environmental impact is determined not only by the magnitude of the impact but also by the sensitivity of the receptor, as shown in Table 8.3.

Table 8.3: Methodology for Determining Sensitivity

Sensitivity	Examples of Receptor
High	The receptor/resource has little ability to absorb change without fundamentally altering its present character, or is of international or national importance.
Moderate	The receptor/resource has moderate capacity to absorb change without significantly altering its present character, or is of high importance.
Low	The receptor/resource is tolerant of change without detriment to its character, is of low or local importance.

8.42. Each of the receptors considered in this noise assessment are of a residential nature, albeit temporary residences in the case of the hotel. The occupants of the residential properties are considered most likely to be sensitive to noise although it is recognised that some offices and retail premises on Wye Street and Spring Garden to the south of the site, could also be affected by noise during the construction and operational phases of the development.

8.43. Receptors of a residential nature are considered to be moderately sensitive. It is considered that premises such as hospitals and nursing homes would be identified as highly sensitive however there are no premises of this type in the area surrounding the site.

8.44. The significance of an environmental impact for both construction noise, road traffic noise and on site operational noise is determined by the interaction of magnitude and sensitivity. The Impact Significance Matrix used in this assessment is shown in Table 8.4.

Table 8.4: Impact Significance Matrix

Magnitude	Sensitivity		
	High	Moderate	Low
Major	Major Adverse/Beneficial	Major - Moderate Adverse/Beneficial	Moderate - Minor Adverse/Beneficial
Moderate	Major - Moderate Adverse/Beneficial	Moderate – Minor Adverse/Beneficial	Minor Adverse/Beneficial
Minor	Moderate - Minor Adverse/Beneficial	Minor Adverse/Beneficial	Minor - Negligible
Negligible / Not significant	Negligible	Negligible	Negligible

Earthworks/Enabling Works and Construction Phase

Noise from Earthworks/Enabling Works and Construction Phase

8.45. On construction sites, noise limits for site preparation and construction works are generally set with reference to the need to avoid speech interference in occupied buildings adjacent to the site. The Department of the Environment's Advisory Leaflet 72 (AL72) gives advice on maximum levels of construction site noise during daytime hours (which are taken in that document to be 07.00 to 19.00 hours). The advice is that the noise levels outside the nearest window of an occupied room closest to the site boundary should not exceed:

- 75 dB(A) in urban areas near main roads in heavy industrial areas; or

- 70 dB(A) in rural, suburban and urban areas away from main roads and industrial noise.

8.46. The noise levels are façade $L_{Aeq,T}$ noise levels, one metre outside occupied rooms closest to the site boundary. Given the location of the proposed development site, a daytime construction limit of 70dB(A) can be used as an indicator above which a significant noise impact may be registered.

8.47. It should be noted that the advice on noise limits in AL72 is based on research which was carried out in 1963 when building facades typically attenuated external noise levels by 15-20dB. It was found that speech was not unduly interfered with inside the building when exterior levels were at 70dB(A). Modern buildings by comparison typically achieve 28-33 dB attenuation; this has effectively tightened the standard by 13dB over the intervening period.

8.48. Local authorities quite often have their own procedures for control of construction activities that are proposed in their area. High Peak Borough Council do not have any set construction noise limits, however it would be normal practice for them to restrict working hours and to rely upon the Control of Pollution Act 1974 (COPA 1974).

8.49. Under Section 60 of this Act the local authority has the power to serve a notice which could impose requirements as to the way in which works are to be carried out. This could specify times of operation, maximum levels of noise which should be emitted and the type of plant which should or should not be used. This is a commonly used means of enforcement of reasonable levels of construction noise.

8.50. However it might be preferable for the chosen contractor to obtain prior consent under Section 61 of COPA 1974. Section 61, enables anyone who intends to carry out works to apply to the local authority for consent. Under Section 61 the local authorities and those responsible for construction work, have an opportunity to settle any problems relating to the potential noise before work starts.

8.51. For the purposes of this noise assessment it is possible to estimate the degree of impact from the site works (demolition, earthworks and construction), according to the suggested standards, by reference to the time periods during which noise levels may occur in excess of the quoted values. These levels can be seen in Table 8.5.

Table 8.5: Construction Noise Assessment Significance Criteria

Magnitude of Impact	Criteria for assessing Construction Noise Impact
Major	Noise levels exceed the limit of 70 dB(A) suggested in the AL72 for the duration of the construction works.
Moderate	Noise levels exceed the limit of 70 dB(A) suggested in AL72 for periods of more than one month, but for significantly less than the whole duration of the construction works.
Minor	Noise levels exceed the limit of 70 dB(A) suggested in AL72 for periods of less than one month.
Negligible / Not significant	Noise levels do not exceed the limit of 70 dB(A) suggested in AL72 during any period.

Vibration from Earthworks/Enabling Works and Construction Activities:

8.52. British Standard BS5228 Part 1, 1997 "*Noise and vibration Control on Construction and Open Sites*" indicates that vibration can have disturbing effects on the surrounding neighbourhood, especially where particularly sensitive operations may be taking place. The significance of vibration levels which may be experienced adjacent to a site is dependent

upon the nature of the source.

8.53. Human perception of vibration is extremely sensitive. People can detect and be annoyed by vibration before there is any risk of structural damage. Cases where damage to a building has been attributed to the effects of vibration alone are extremely rare, even when vibration has been considered to be intolerable by the occupants.

8.54. It is not possible to establish exact vibration damage thresholds that may be applied in all situations. The likelihood of vibration induced damage or nuisance will depend upon the nature of the source, the characteristics of the intervening solid and drift geology and the response pattern of the structures around the site. Most of these variables are too complex to quantify accurately and thresholds of damage, or nuisance, are therefore conservative estimates based on a knowledge of engineering.

8.55. Where ground vibration is of a relatively continuous nature, there is a greater likelihood of structural damage occurring, compared to transient vibration; for example that caused by transiting vehicles.

8.56. The threshold of perception is generally accepted to be between a peak particle velocity (PPV) of 0.2 and 0.3mm/sec. In an urban situation it is unlikely that such vibration levels would be noticed. The Highways Agency Research report No. 53 "*Ground Vibration caused by Civil Engineering Works*" 1986 (Transport and Road Research Laboratory 53, TRL 53) suggests that, when vibration levels from an unusual source exceed the human threshold of perception, complaints may occur. The onset of complaints due to continuous vibration is probable when the PPV exceeds 3mm/sec.

8.57. TRL 53 states that structural damage may take place at a PPV in excess of 10mm/sec. BS5228 1997 also quotes 10mm/sec as a conservative threshold for a minor or cosmetic (i.e. non-structural) damage. British Standard BS7385 1993 "*Guide to Evaluation and measurement for Vibration in Buildings: Part 2 Guide to damage levels from Groundbourne vibration*" (BS7385) suggests that the onset of cosmetic damage is 15mm/sec (15 mm/s at 4 Hz increasing to 20 mm/s at 15 Hz for residential or light commercial type buildings).

8.58. British Standard BS6472, 1992 "*Guide to* Evaluation *of human Exposure to vibration in Buildings (1 Hz to 80 Hz)*" (BS6472) suggests that adverse comments or complaints due to continuous vibration are rare in residential situations below a PPV of 0.8mm/sec.

8.59. Continuous vibration is defined as "vibration which continues uninterrupted for either a daytime period of 16 hours or a night-time period of 8 hours". The proposed earthworks and construction works at the site will not cause continuous vibration as defined in BS6472.

8.60. The adverse residual impacts are assessed against the categories set out in Table 8.6.

Table 8.6: Construction Vibration Significance Criteria

Magnitude of Impact	Criteria for assessing Construction Noise Impact
Major	Continuous vibration levels at receptors that are above the threshold of the possible onset of cosmetic damage to plasterwork in buildings; PPV 10mm per second.
Moderate	Continuous vibration levels at receptors, which are double the threshold of complaint; PPV 5mm per second, but below 10mm per second.
Minor	Vibration levels at receptors, which are above the threshold of complaint for continuous vibration; 2-3mm per second, but below 5mm per second.
Negligible / Not significant	Vibration levels at receptors, which are below the threshold of complaint for continuous vibration, 2-3mm per second, and below 5mm per second.

Operational Phase

Road Traffic Noise and Existing Sensitive Receptors

8.61. The changes in road traffic noise levels have been assessed against a set of significance criteria. The criteria shown in Table 8.7 are based upon guidance contained within the Design Manual for Roads and Bridges, Volume 11, Section 3, Part 7,1994 (DMRB). The criteria do not relate to the actual existing noise levels (i.e. traffic noise due to the current residential development) but only the predicted changes.

Table 8.7: Road Traffic Assessment Significance Criteria

Magnitude of Impact	Criteria for assessing Operational Noise
Major	A > 10.0 dB increase in traffic noise (equating to a doubling in the loudness of noise).
Moderate	A 5.0 – 10.0 dB increase in traffic noise (equating to a clearly perceptible increase in the loudness of the noise).
Minor	A 3.0 – 5.0 dB increase in traffic noise (equating to an increase in the loudness of the noise which is at or about the threshold of perception).
Negligible / Not significant	A 0.1 – 2.9 dB increase in traffic noise (equating to no perceptible increase in traffic noise).

Assessment Criteria for Proposed Sensitive Receptors

8.62. There are no residential dwellings proposed as part of the development; however the development will include of a hotel which, with regard to noise, is of a residential nature.

8.63. The potential impacts of the existing and future sources of noise on the proposed residential area of the development have been assessed with reference to PPG24, WHO Guidelines and BS8233.

8.64. PPG24 gives guidance to local authorities in England on the use of their planning powers to minimise the adverse impact of noise and builds on the advice previously contained in DoE Circular 10/73. It:

- Outlines the considerations to be taken into account in determining planning applications both for noise sensitive developments and for those activities which will generate noise.
- Introduces the concept of noise exposure categories for residential development, encourages their use and recommends appropriate levels for exposure to different sources of noise; and
- Advises on the use of conditions to minimise the impact of noise.

8.65. PPG 24 introduces the concept of Noise Exposure Categories (NECs) to help local authorities in their consideration of applications for residential development near transport related noise sources.

8.66. The recommended noise levels in PPG 24 are based upon the World Health Organisation (WHO) Environmental Health Criteria 12 1980. In light of the fact that WHO published new guidelines in 1999 (Guidelines for Community Noise) PPG24 is now in the process of being revised to produce PPS 24 (Planning Policy Statement 24). It is anticipated that this new

statement will reflect the more stringent noise level requirements as set out in the WHO Guidelines for Community Noise 1999. Similar noise limits are set out in BS8233.

8.67. Therefore in addition to the requirements of PPG24 and in accordance with the requirements of WHO Guidelines for Community Noise and BS8233, the following internal daytime and night-time noise levels will need to be met within sensitive rooms of the hotel:

- Internal noise level of 30 dB L_{Aeq} in bedrooms.
- Individual noise events in bedrooms should not normally exceed 45 dB L_{AMAX}.
- Internal noise level of 45 dB L_{Aeq} in all other areas of the hotel[10].

8.68. BS8233 also gives recommendations for the control of noise in and around buildings and suggests appropriate criteria and internal noise limits for different area types, including an open plan office or an individual office. In order to achieve good conditions for work in an office area, noise levels should be in the order of 45dB L_{Aeq}.

8.69. To assess the current levels of noise across the site, Wardell Armstrong LLP carried out an attended noise survey. Where necessary, mitigation measures will be recommended to ensure that the internal noise levels within sensitive rooms of the development meet the requirements of the WHO Guidelines for Community Noise, BS8233 and the generic specification for hotels respectively.

Baseline Conditions

Baseline Ambient Noise Levels at Receptors Likely to be Affected by Construction Phase Activities and Operational Phase On-Site Activities

8.70. In addition to the potential increase in road traffic noise, the proposed enabling works/earthworks, construction and operational phases of development, have the potential to increase the ambient noise levels at existing sensitive receptors in the immediate vicinity of the site. Baseline noise monitoring was therefore carried out at locations representative of Wye Street, Bridge Street and The Quadrant to characterise existing ambient noise levels at these receptors.

8.71. On the 11th October 2007, Wardell Armstrong LLP carried out attended background noise monitoring during the daytime period, at the following locations:

- Monitoring Location 1 – Wye Street: This monitoring location is considered to be representative of the first floor residential dwellings, located above the commercial premises on Wye Street/Spring Gardens to the south of the site.
- Monitoring Location 2 – Bridge Street: This monitoring location is considered to be representative of the first floor residential dwellings, located above the commercial premises on Spring Gardens to the southeast of the site.
- Monitoring Location 3 – The Quadrant: This monitoring location is considered to be representative of the first floor residential dwellings, located above the commercial premises to the southwest of the site.

8.72. The monitoring locations are shown on Figure 8.2 in **Appendix 8.4**.

8.73. All noise measurements were made using a precision grade, integrating sound level meter mounted vertically on a tripod 1.2 metres above the ground and more than 3.5 metres away

[10] Based on the Premier Travel Inn: Generic Specification for a Turnkey Development, 7th Sept 2006 Edition Rev B

from any other reflecting surface. All measurements were made under dry, calm weather conditions. The sound level meters were calibrated to a reference level of 94dB at 1kHz both before, and on completion of, the noise surveys.

8.74. The attended background noise measurements were taken over 10-minute periods during the survey. 'A' weighted L_{eq} and L90 values, together with maximum and minimum sound pressure levels were recorded in each monitoring period. Monitoring was carried out between 0730 and 1000 hours.

8.75. The existing ambient daytime monitoring results at the existing sensitive receptor locations are summarised in Table 8.8. The measured noise levels are set out in full in **Appendix 8.2**.

Table 8.8: Summary of Noise Measurements at Existing Sensitive Receptors

Existing Sensitive Receptor Monitoring Locations	**Average Measured Noise Levels** **Figures in dB $L_{Aeq\ 10\ minutes}$**
1. Wye Street	58.8
2. Bridge Street	63.1
3. The Quadrant	60.7

8.76. Observations made during the survey indicate that the noise levels at these monitoring locations are currently high due to nearby existing traffic movements along the local road network.

Baseline Road Traffic Noise Levels at Existing Sensitive Receptors

CRTN Predictions

8.77. In accordance with the method specified in CRTN, noise prediction calculations have been carried out for the 12 receptors identified in Table 8.8. The prediction calculations indicate the baseline noise levels at the façade of each receptor, in 2008, 2012 and 2017. The results of the prediction calculations are shown in Table 8.9.

Table 8.9: Results of the Predicted Baseline Road Traffic Noise Levels

Receptor	**Predicted $L_{10\ 18\ hour}$ dB(A) at the façade of the Receptor**		
	2008	**2012**	**2017**
CRTN 1	76.6	76.8	77.0
CRTN 2	72.4	72.5	72.7
CRTN 3	71.9	72.1	72.3
CRTN 4	66.0	66.2	66.4
CRTN 5	66.1	66.3	66.5
CRTN 6	74.7	74.9	75.1
CRTN 7	67.9	68.0	68.2
CRTN 8	69.8	69.9	70.1
CRTN 9	71.4	71.5	71.7
CRTN 10	70.1	70.3	70.5
CRTN 11	70.8	71.1	71.3
CRTN 12	65.7	65.9	66.1

8.78. In accordance with CRTN, the predicted level of road traffic noise at the façade of the existing receptors has been determined based on the number and composition of vehicles

travelling along the local road links (i.e. the number and proportion of HGVs and LGVs), together with the speed of vehicles, distance of the receptor from the edge of the carriageway and angle of view of the road link. Further details of the CRTN predictions are included in Appendix 8.1.

8.79. The results of the baseline modelling indicate that noise levels increase between 2008 and 2017, and that the increases in noise due to the growth in traffic (without the development taking place) would be up to 0.4dB(A).

CRTN Noise Measurements

8.80. On the 10th and 11th October 2007, Wardell Armstrong LLP carried out attended noise monitoring at the following locations, to assess the levels of road traffic noise:

- CRTN Monitoring Location 1 – G & T Motors: Located adjacent to Bridge Street/Charles Street, approximately 4m from the carriageway. This monitoring location is considered to be representative of CRTN5, No 26 Bridge Street, as detailed in Table 8.1. However it should be noted that the measurements have been taken at a distance closer to the carriageway than that of the building façade of the receptor, and are therefore free-field.

- CRTN Monitoring Location 2 – High Peak Halls: Located adjacent to Bridge Street, approximately 4m from the carriageway. This monitoring location is considered to be representative of CRTN4, High Peak Halls, as detailed in Table 8.1. However it should be noted that the measurements taken have been taken at a distance closer to the carriageway than that of the building façade of the receptor, and are therefore free-field.

8.81. The monitoring locations are shown on Figure 8.2 in **Appendix 8.4**.

8.82. The daytime noise measurements at these locations were carried out in accordance with the shortened measurement procedure in CRTN 1988. This requires that traffic noise is measured over 3 consecutive hours between 10.00 and 17.00 hours. The $L_{10\ (18\ hour)}$ is then calculated from the $L_{10\ (3\ hour)}$.

8.83. All noise measurements were made using a precision grade, integrating sound level meter mounted vertically on a tripod 1.2 metres above the ground and more than 3.5 metres away from any other reflecting surface. The attended measurements were made under dry, calm weather conditions. The sound level meters were calibrated to a reference level of 94dB at 1kHz both before, and on completion of, the noise surveys.

8.84. 'A' weighted L_{10} values were recorded to comply with the requirements of CRTN. 'A' weighted L_{eq} and L_{90} values, together with maximum and minimum sound pressure levels were also recorded to provide additional information.

8.85. The CRTN results are summarised in Table 8.10. The measured noise levels are set out in full in **Appendix 8.2**.

Table 8.10: Summary of CRTN Noise Measurements

CRTN Monitoring Location	Measured $L_{10\ 18\ hour}$ dB(A) (Free-field)
1. G & T Motors (CRTN5)	68.7
2. High Peak Halls (CRTN4)	64.0

8.86. The monitoring locations are positioned closer to the edge of the adjacent carriageways than the building façade of the representative existing receptor. The building façade would therefore experience a lower traffic noise level. However, the presence of the façade causes

an increase in the noise level due to reflection. Calculations demonstrate that the additional "façade effect" is approximately equal to, and opposite, the effects if the increased distance. Therefore the measured noise levels are similar to the façade noise levels.

Proposed Sensitive Receptors and Noise

8.87. On the 2nd and 3rd October 2007, Wardell Armstrong LLP carried out attended noise monitoring at two monitoring locations on the site to assess the levels of road traffic noise. The monitoring locations are considered to be representative of the proposed noise sensitive areas of the development, i.e. the hotel, as shown on Figure 8.2 in **Appendix 8.4**.

8.88. The majority of the site currently operates as a car park for the existing Spring Gardens Shopping Centre. It was not considered appropriate to measure noise levels at the site during the daytime period due to the number of on-site vehicle movements in the immediate vicinity of the monitoring locations on the site. The proposed hotel will not be subject to the noise once the site is redeveloped, as these movements will take place within the building of proposed multi-storey car park.

8.89. All noise measurements were made using a precision grade, integrating sound level meter mounted vertically on a tripod 1.2 metres above the ground and more than 3.5 metres away from any other reflecting surface.

8.90. All measurements were made under dry, calm weather conditions. The sound level meters were calibrated to a reference level of 94dB at 1kHz both before, and on completion of, the noise surveys.

8.91. The attended background noise measurements were taken over a 10-minute periods during the survey. 'A' weighted L_{eq} values were recorded to comply with the requirements of the WHO Guidelines and BS8233, together with maximum and minimum sound pressure levels in each monitoring period. Monitoring was carried out between 0550 and 0635 hours and 2325 and 0050 hours.

8.92. The monitoring results at the on-site monitoring locations are summarised in Table 8.11. The measured noise levels are set out in full in **Appendix 8.2**.

Table 8.11: Summary of On-Site Noise Measurements at Proposed Sensitive Receptors

On-Site Monitoring Location	Average Measured Noise Levels Figures in dB $L_{Aeq\ 10\ minutes}$	Range of Measured Maximum Noise Levels Figures in dB L_{AMAX}
On-Site Monitoring Location 1	61.9	70.1 – 84.0
On-Site Monitoring Location 2	54.1	63.1 – 79.1

Baseline Vibration Survey:

8.93. It has not been considered necessary to carry out a vibration survey to establish the current levels of vibration on the site or at existing sensitive receptors. Given the location of the site and lack of existing sources of vibration, other than vehicles on the local road network, levels are likely to be low and not perceptible. Vehicles travelling along the local road network are only likely to be detectable (by instrumentation) above the background within approximately 10m of the source.

Identification and Evaluation of Key Impacts

Enabling works/earthworks phase and Construction Phase

8.94. The proposed development will be constructed in four phases. The activities proposed to be carried out in each of the phases are as follows:

- **Pre-Construction Phase:** This will include the provision of the temporary car park which will be operational throughout Phase 1.
- **Phase 1:** This will include the construction of the multi-storey car park and hotel.
- **Phase 2:** At the commencement of Phase 2, the temporary car park constructed in the Pre-Construction Phase will be removed as the new multi storey car park will be operational. This phase will also include the construction of the food store, offices and associated car parking.
- **Phase 3:** This will include the construction of the non-food retail units, simultaneous fit out of the hotel, food store and retail units and landscaping.

Noise from Enabling Works/Earthworks and Construction Activities

8.95. During the enabling works/earthworks phase and construction phase, any work carried out at the proposed development is likely to generate noise that may propagate beyond the proposed development boundary.

8.96. The levels of noise received at properties close to the proposed development depend on the sound power levels of the machines used, the distance to the properties, the presence of screening or reflecting surfaces and the ability of the intervening ground to absorb the propagating noise.

8.97. The significance of noise received adjacent to a site is dependent upon the nature of the source of the noise. Earthworks and construction works are temporary occurrences, which are necessary to bring land into use. It would not be appropriate therefore to assess the noise from such works according to standards of amenity; instead levels based on reasonable tolerance should be used.

8.98. During the enabling works/earthworks and construction phases there will be the potential for various activities to temporarily generate noise, at the existing sensitive receptors surrounding the site, as detailed in paragraphs 8.10 and 8.11 of this chapter. These include (but are not limited to):

- Site preparation i.e. ground excavation, levelling of ground, trenching, trench filling, unloading and levelling of hardcore and compacting filling.
- Construction of the proposed redevelopment including piling, construction of access roads, fabrication processes e.g. planing, sanding, routing, cutting, drilling and laying foundations.

8.99. To provide some indication of the short-term noise levels which may be experienced at existing sensitive receptors, the noise levels from types of plant typically involved in the construction phase have been considered. This plant would typically be involved in the noisier construction activities such as earthworks and highway construction. The quieter construction activities such as roof cladding and brick work / frame construction would not be significant in comparison.

8.100. Table 8.12 details the sound pressure levels at a number of pieces of plant (measured at 10 metres).

Table 8.12: Sound Pressure Level L_{Aeq} dB of Construction Plant likely to be used at the Proposed Development

Plant	L_{Aeq} dB at 10 metres
Tracked Excavator	77
Diesel Generator	60
Bulldozer	86
Articulated dump truck	81
Vibratory Roller	77
Dump truck	86
22 Tonne Tower Crane	76
Total noise level	90.3

8.101. The noise levels detailed in Table 8.12 have been distance corrected to give an indication of the level of noise which could potentially be generated by the construction plant likely to be used during the construction phases of the development, at the nearest existing receptor locations.

8.102. The noise levels detailed in Table 8.12 are free-field noise levels. To allow comparison with AL(72), and to allow for the reflection of noise from the building facades of the existing sensitive receptors, 2.5dB(A) must be added to the predicted noise levels.

8.103. The noise levels likely to be generated by the construction plant during the construction phase as received at the building facades of the existing receptors, are summarised in Table 8.13

Table 8.13: Predicted Noise Levels of Construction Plant likely to be used at the Proposed Development at Existing Sensitive Receptors

Receptor	Distance from the Site	Predicted L_{Aeq} dB (A) Noise Level at the Building Façade of the Existing Sensitive Receptor
1. Wye Street / Spring Gardens	10m	92.8
2. Bridge Street	30m	88.0
	110m	82.4
3. The Quadrant / St John's Road	20m	89.8

8.104. The noise levels shown in Table 8.11 do not take into account any barrier attenuation or on time corrections. As the existing building of the Spring Garden Shopping Centre will remain, this will provide some screening of the noise from the construction works at the following

receptors:

- Residential receptors on Wye Street and Spring Gardens, during Construction Phase 2.
- Residential receptors on Bridge Street and Fairfield Road, during Construction Phase 2.
- Residential receptors on the Quadrant, Station Road and St Johns Street, during Construction Phases 1 and 3.

8.105. It is likely that when enabling activities associated works/earthworks and construction phases of the development are in the immediate vicinity of the existing sensitive receptors, the noise levels generated will potentially exceed the recommendations in AL(72). This will potentially cause a moderate impact, i.e. noise levels may exceed the limit of 70dB(A) suggested in AL(72) for periods of more than one month but for significantly less than the whole duration of the construction work.

8.106. The receptors are moderately sensitive and in accordance with the Impact Significance Matrix in Table 8.4 the impact would be moderate-minor adverse without the implementation of mitigation.

8.107. High Peak Borough Council could recommend a noise limit for the construction phases of the development, taking into consideration the existing ambient noise levels as established by the baseline noise monitoring which has been carried out.

8.108. It is therefore recommended that mitigation measures be put in place to minimise the noise levels likely to be generated during the enabling works/earthworks and construction phases of the development. These would include measures that would minimise noise from construction works, together with the implementation of 'best working' practice. Details can be found in the mitigation section of this chapter.

Noise from Construction Vehicles

8.109. The number of vehicles generated during the earthworks and construction phases will not be significant relative to the existing traffic flows on the routes surrounding the development site; therefore the level of road traffic noise at existing sensitive receptor locations is unlikely to change significantly due to construction vehicles during the construction phase of the development.

Vibration from Construction Activities

8.110. The earthworks and construction works have the potential to increase vibration levels at existing properties during the proposed working hours.

8.111. Activities associated with the construction phase of the proposed development, such as foundation construction, will have the potential to generate significant levels of vibration.

8.112. Wardell Armstrong's archives contain field trial measurements of ground vibrations associated with generically similar plant to those proposed for the development site. The representative, measured levels, made by Wardell Armstrong using a Vibrock B801 Digital Seismograph, are set out in Table 8.14.

Table 8.14: Measured Vibration Levels of Plant under Normal Operating Conditions (Figures in ppv mm per second)

Plant Type	Distance from Source		
	10m	20m	30m
25-30 tonne excavator	0.175	0.075	Background
25 tonne dumptruck (Volvo A25) Loaded Empty	 1.000 0.225	 0.150 0.050	 Background Background
Dozer	1.050	0.400	Background
Vibrating Roller Drum Vibrator on Vibrator off	 4.470 0.500	 3.270 0.150	 2.350 0.050
Loading Shovel	1.025	0.150	Background

Source: Wardell Armstrong

Note: All values expressed as Peak Particle Velocity (mm per second)

8.113. The nearest sensitive properties to the proposed excavation and construction works, as detailed in paragraphs 8.10 and 8.11 of this chapter, will be those located off Wye Street/Spring Gardens. These properties include the listed buildings at Spring Gardens and The Quadrant. In the worst case, earthworks and construction works in the south-eastern part of the site may potentially take place at a distance of approximately 10 metres from residential properties on Wye Street.

8.114. At this distance, vibration due to the operation of a loaded dumptruck, a dozer and a vibratory roller is likely to be perceptible. However the vibration levels are highly unlikely to be above the threshold of complaint or structural damage. The existing residential properties would therefore experience a minor impact, i.e. vibration levels which are above the threshold of complaint for continuous vibration; 2-3mm per second but below 5mm per second. This should occur only briefly during the works.

8.115. The receptors are moderately sensitive and in accordance with the Impact Significance Matrix in Table 8.4 the impact would be minor adverse without the implementation of mitigation.

8.116. In addition to the earthworks and construction works described above, it is possible that piling will be required. At this time the type(s) of piling, which would be used at various locations, across the site, is not known and it is likely that the contractor responsible for undertaking the works at the site would decide the method of piling.

8.117. British Standard BS5228 Part 4: 1992 “Noise and Vibration Control on Construction and Open Sites. Code of practice for noise and vibration control to piling operations” recognises that the most common form of vibration associated with piling is the intermittent type derived from conventional driven piling. The intensity of vibration disturbance, which may be registered at a receptor, will be a function of many factors. These are set out in BS5228 Part 4 and include:

- Energy per blow or cycle
- Disturbance between source and receptor
- Ground conditions at the site e.g. soft or hard driving and location of water table

- Soil structure interaction i.e. nature of connection between soil and structure being monitored

- Construction of structure and location of measuring points e.g. soil surface, building foundation and internal structural element.

8.118. At this stage detailed information regarding the above is not known and the type of piling has not been confirmed. To minimise the potential for vibration to be generated by piling it is recommended that careful consideration be given to the type of piling to be used. For example auger bored piles would be preferable to driven piles with regards to a reduced potential for noise and vibration to be generated. However, it is recognised that the piling process will need to be selected on the basis of the strata to be encountered, the loads to be supported and the economics of the system.

8.119. Once the precise building locations, ground conditions for each location and subsequent suggested type of piling are confirmed, vibration levels could be estimated and recommendations for control made as appropriate.

8.120. The receptors most likely to be affected by piling are the residential properties on Wye Street/Spring Gardens. The listed buildings at Spring Gardens and The Quadrant may also potentially be affected. It is possible that the Local Authority would consider setting a boundary condition at the nearest properties. For example, for non-continuous sources of vibration a PPV limit of 3mm/sec may be set for periods of earthworks and construction works, including piling. This limit would ensure that the vibration impact at the nearest sensitive properties and listed buildings would be no more than minor adverse. It should also ensure that complaints due to vibration and cosmetic and structural damage do not occur.

Operational Phase

Road Traffic Noise and Existing Sensitive Receptors

8.121. The CRTN assessment has been carried out to assess any potential changes in road traffic noise at existing receptor locations due to the operation of the development.

8.122. The predicted 2012 (Opening Year) and 2017 (Design Year) "with development" noise levels are shown in Table 8.15 for each of the receptors considered. Taking into consideration the findings of the CRTN noise measurements these predicted noise levels are considered reasonably representative.

Table 8.15: CRTN Predictions for "With Development" Scenarios 2012 and 2017

Receptor	Predicted $L_{10\ 18\ hour}$ dB(A) at the façade of the Receptor	
	2012 Opening Year – With Development	2017 Design year – With Development
CRTN 1	77.4	77.6
CRTN 2	73.6	73.8
CRTN 3	73.3	73.5
CRTN 4	67.3	67.5
CRTN 5	67.6	67.7
CRTN 6	76.1	76.3
CRTN 7	69.5	69.6
CRTN 8	70.5	70.7
CRTN 9	72.2	72.4
CRTN 10	70.9	71.0
CRTN 11	71.7	71.9
CRTN 12	66.4	66.6

8.123. The changes in noise levels at each of the receptors considered, have been assessed by

comparing the noise levels predicted for the 2012 and 2017 "Without Development" Scenarios and the 2012 and 2017 "With Development" Scenarios. The results are shown in Table 8.16.

Table 8.16: Changes in predicted Road Traffic noise levels in 2012 and 2017

Receptor	Predicted Change in $L_{10\ 18\ hour}$ dB(A) at the façade of the Receptor	
	2012 Opening Year – With Development	2017 Design year – With Development
CRTN 1	+0.6	+0.6
CRTN 2	+1.1	+1.1
CRTN 3	+1.2	+1.2
CRTN 4	+1.1	+1.1
CRTN 5	+1.3	+1.2
CRTN 6	+1.2	+1.2
CRTN 7	+1.5	+1.4
CRTN 8	+0.6	+0.6
CRTN 9	+0.7	+0.7
CRTN 10	+0.6	+0.5
CRTN 11	+0.6	+0.6
CRTN 12	+0.5	+0.5

8.124. The changes in noise levels have been assessed against the significance criteria contained in Table 8.6. The results show that the highest increase will be +1.5dB(A) at CRTN 7, therefore there will be no perceptible increase in road traffic noise at receptors CRTN 1 to CRTN 12. It is therefore considered that the impact of the increase in road traffic noise, at the existing receptors which are most likely to be affected, will be insignificant.

8.125. The existing receptors are moderately sensitive and in accordance with the Impact Significance Matrix in Table 8.4 the impact would be negligible. Mitigation measures are not therefore required.

Existing Sensitive Receptors and Ancillary Noise

8.126. It is likely that noise will be generated by operational activities and noise sources associated with the proposed development. These will include air handling units and activities associated with the delivery of goods for the food store and other commercial units (retail and hotel).

8.127. The proposed layout indicates that there will be two ancillary plant rooms located centrally on the roof of the food store, with a further ancillary plant room located to the western edge on the roof of the hotel. The plant rooms will be enclosed.

8.128. Existing sensitive receptors surrounding the site may potentially have a direct line of sight with the proposed ancillary plant rooms associated with the food store and hotel. Table 8.17 details the distance between the existing sensitive receptors and the plant rooms to which they may have a direct line of sight.

Table 8.17: Distance between Existing Sensitive Receptors and Proposed Ancillary Plant Rooms of the Food Store and Hotel

Existing Sensitive Receptor	Distance from the Proposed Ancillary Plant Room (Figures in Metres)		
	Food Store Plant Room 1	Food Store Plant Room 2	Hotel Plant Room
1. Wye Street/Spring Gardens	80m	75m	65m
2. Bridge Street	No direct line of sight.	No direct line of sight.	No direct line of sight.
3. The Quadrant / St John's Road	55m	110m	No direct line of sight

8.129. With regards to the type of air handling units to be installed, this will be subject to future discussions between the appropriate engineering companies and occupants of the proposed food store and commercial units. The proposed air handling units will be of high specification and routinely maintained to ensure that noise emissions are minimised. Where necessary, measures to mitigate noise will be included in the detailed design of the development to ensure that a significant noise impact is not created at existing noise sensitive receptor locations.

8.130. The proposed layout indicates that the delivery areas of goods for the food store will be on the ground floor, in the south-eastern part of the building footprint of the store and immediately to the north of the existing Spring Gardens Shopping Centre. Additional floors of the food store will be constructed above the proposed delivery area thereby enclosing the delivery area. It is therefore considered that the level of noise likely to be generated by the activities associated with the delivery of goods to the food store will be insignificant at the existing sensitive receptors on the Quadrant.

8.131. In addition to the delivery area for the food store, a small area located immediately to the west of New Wye Street has been designated for deliveries to the proposed retail units in this area of the site. Due to the size of the proposed retail units and distance of the delivery area from the existing sensitive receptors on Wye Street/Spring Gardens, it is considered that the level of noise likely to be generated by the activities associated with the delivery of goods to the retail units will be insignificant.

8.132. Baseline noise monitoring has been carried out and, taking into account the comments above, it is considered highly unlikely that the nearby receptors would experience a perceptible increase in the noise levels due to ancillary noise. The impact would therefore not be significant.

8.133. The existing receptors are moderately sensitive and in accordance with the Impact Significance Matrix in Table 8.4 the impact would be negligible.

Proposed Sensitive Receptors and Noise

8.134. The site layout drawing indicates that the proposed sensitive areas of the development, i.e. the hotel and offices will be located in the north-eastern part and the north-western part of the site respectively.

8.135. The proposed area for the hotel is bound by Station Road to the north and New Wye Street to the southeast. Road traffic along Station Road, New Wye Street and Bridge Street is considered to be the significant source of noise likely to generate an impact at the hotel.

8.136. Due to the vehicle movements associated with the existing Spring Gardens Shopping Centre car park, in the immediate vicinity of the on-site monitoring locations, representative on-site noise measurements could only be taken during the night-time period. The results from the

on-site, night-time noise measurements are included in full in Appendix 8.2 and summarised in Table 8.9. The noise levels measured at these locations are considered to be representative of the building facades of the proposed hotel.

8.137. In addition to the night-time noise survey, CRTN prediction calculations have been carried out to provide daytime noise levels representative of the proposed building façade of the hotel nearest to the local road network and once the development is operational. The calculations have been based upon the traffic flow information provided by Ashley Helme Associates and are detailed in **Appendix 8.1**.

8.138. Companies that operate hotels often have their own internal noise guidelines to be achieved. For the purpose of this assessment it is taken that the building façade of the hotel will need to attenuate sufficiently to achieve 30dB L_{Aeq} and 45dB L_{AMAX} in bedrooms and 45dB L_{Aeq} in all other areas of the hotel during the daytime and night-time periods.

8.139. Further information is provided below:

Daytime Noise Levels at the Proposed Facades of the Hotel:

8.140. Once developed, the proposed hotel located immediately adjacent to Station Road/New Wye Street would be subject to noise from road traffic.

8.141. Prediction calculations have been carried out to determine the level of road traffic noise at the building façade of the proposed hotel, nearest to and with a direct line of sight of Station Road and New Wye Street. The results of the prediction calculations can be compared to the assessment criteria by making small adjustments to the predicted noise levels, in accordance with a method set out in PPG24. The $L_{A10\ 18\text{-}hour}$ value can be converted to an $L_{Aeq\ 16\text{-}hour}$ value by subtracting 2dB(A).

8.142. Before internal noise levels can be calculated 2.5dB(A) must be added to the noise levels to allow for the reflection of noise from the proposed building facades when the hotel is in place.

8.143. Daytime noise levels at the façades of the hotel nearest to and with a direct line of sight of the local road network are summarised in Table 8.18.

Table 8.18: Predicted Daytime Noise Level at the Proposed Façades of the Hotel in 2012

Façade of the Proposed Hotel	**Predicted $L_{Aeq\ 16\ hour}$ dB(A) at the façades of the Hotel 2012 Opening Year – With Development**
North Facing Façade (Nearest to Station Road)	75.2
East Facing Façade (Nearest to New Wye Street)	70.7

8.144. The levels of noise attenuation that the facades of the hotel, nearest to and with a direct line of sight of the local road network, will need, to achieve the required internal noise levels during the daytime period, are summarised in Table 8.19:

Table 8.19: Daytime Noise Attenuation requirements at the Proposed Façades of the Hotel to Achieve the Required Internal L_{Aeq} Noise Levels

Façade of the Proposed Hotel		Internal Noise Level to be Achieve (Figures in dB $L_{Aeq\ 16\text{-}hour}$)	Daytime Noise Attenuation Requirements at the Proposed Façade of the Hotel
North Facing Façade	Bedroom	30dB L_{Aeq}	45.2 dB(A)
	All Other Areas of the Hotel	45dB L_{Aeq}	30.2 dB(A)
East Facing Façade	Bedroom	30dB L_{Aeq}	40.7 dB(A)
	All Other Areas of the Hotel	45dB L_{Aeq}	25.7 dB(A)

Night-time Noise Levels at the Proposed Facades of the Hotel:

8.145. Night-time noise measurements were carried out at two monitoring locations on the site. Observations made during the survey indicate that vehicle movements on the local road network were the dominant source of noise across the site.

8.146. The measured noise levels are representative of free-field conditions. Before internal noise levels can be calculated 2.5dB(A) must be added to the noise levels to allow for the reflection of noise from the proposed building facades when the hotel is in place.

8.147. Night-time noise levels at the building facade of the hotel are detailed in Table 8.20:

Table 8.20: Summary of the Average Night-time Noise Levels at the Proposed Façades of the Hotel

Façade of the Proposed Hotel	Night-time Noise Level at the Proposed Façades of the Hotel (Figures in dB $L_{Aeq\ 8\text{-}hour}$)
North Facing Façade i.e. On-Site monitoring Location 1	64.4
East Facing Façade i.e. On-Site Monitoring Location 2	56.6

8.148. The levels of noise attenuation that the facades of the hotel nearest to and with a direct line of sight of the local road network will need to achieve the required internal noise levels during the night-time period, are summarised in Table 8.21:

Table 8.21: Night-time Noise Attenuation Requirements at the Proposed Façades of the Hotel to Achieve the Required Internal L_{Aeq} Noise Levels

Façade of the Proposed Hotel		Internal Noise Level to be Achieved (Figures in dB $L_{Aeq\ 16\text{-}hour}$)	Night-time Noise Attenuation Requirements at the Proposed Façade of the Hotel
North Facing Façade	Bedroom	30dB L_{Aeq}	34.4 dB(A)
	All Other Areas of the Hotel	45dB L_{Aeq}	19.4 dB(A)
East Facing Façade	Bedroom	30dB L_{Aeq}	26.6 dB(A)
	All Other Areas of the Hotel	45dB L_{Aeq}	11.6 dB(A)

8.149. During the night-time noise survey, the maximum noise levels recorded were due to passing vehicles. Based on the highest maximum noise levels recorded during the night-time noise survey, the maximum noise levels at the proposed façade of the hotel are detailed in Table 8.22:

Table 8.22: Summary of the Maximum Night-time Noise Levels at the Proposed Façades of the Hotel

Façade of the Proposed Hotel	Maximum Night-time Noise Levels at the Proposed Façades of the Hotel (Figures in dB L_{AMAX})
North Facing Façade i.e. On-Site monitoring Location 1	86.5
East Facing Façade i.e. On-Site Monitoring Location 2	81.6

8.150. The levels of noise attenuation that the facades of the hotel nearest to and with a direct line of sight of the local road network will need to achieve the required internal noise level of 45dB L_{AMAX} in bedrooms, in is summarised in Table 8.23:

Table 8.23: Night-time Noise Attenuation Requirements at the Proposed Façades of the Hotel to Achieve the Required Internal L_{AMAX} Noise Levels (Applies to Bedrooms Only)

Façade of the Proposed Hotel	Night-time Noise Attenuation Requirements at the Proposed Façades of the Hotel (Figures in dB(A))
North Facing Façade	41.5
East Facing Façade	36.6

8.151. The noise attenuation required to reduce the daytime L_{Aeq} noise levels in bedrooms and all other areas of the hotel is greater than that required to mitigate the night-time L_{Aeq}s and

L_{AMAX}s. However, the glazing recommended will ensure that all internal noise criteria are met during both the daytime and night-time period.

Daytime Noise Levels at the Proposed Facades of the Offices:

8.152. Once developed, the proposed offices will be located on the third floor of the retail food store bound by Station Approach to the west. It is considered that the proposed offices are likely to be subject to noise from road traffic on the local road network, together with the noise generated by the existing Spring Gardens Shopping Centre and the proposed development.

8.153. The proposed offices will be designed to ensure that the building façade attenuates sufficiently to achieve the internal noise limit of 45dB L_{Aeq} in accordance with BS8233.

8.154. Noise attenuation for the proposed hotel and offices is discussed further in the mitigation section of this chapter.

Mitigation Measures

Enabling works/earthworks Phase and Construction Phase

Noise from Earthworks/Enabling Works and Construction Activities

8.155. To reduce the potential impact of noise levels generated by the construction phase of the development at existing receptor locations in the immediate vicinity of the site, mitigation measures will be put in place.

8.156. In addition, best working practice will be implemented during each phase of the enabling works, earthworks and construction works at the site. The construction works will follow the guidelines in British Standard 5228: Part 1: 1997 and the guidance in BRE Controlling particles, vapour and noise pollution from construction sites, Parts 1 to 5, 2003.

8.157. The following measures will be put in place to minimise noise emissions:

- When works are taking place within close proximity to those sensitive receptors identified, screening of noise sources by temporary screen maybe employed.
- All plant and machinery should be regularly maintained to control noise emissions, with particular emphasis on lubrication of bearings and the integrity of silencers.
- Site staff should be aware that they are working adjacent to a residential area and avoid all unnecessary noise due to misuse of tools and equipment, unnecessary shouting and radios.
- A further measure to reduce noise levels at the sensitive receptors would include, as far as possible, the avoidance of two noisy operations occurring simultaneously in close proximity to the same sensitive receptor.
- Adherence to any time limits imposed on noisy works by the Local Authority.
- Implement set working hours during the week and at weekends.
- Ensure engines are turned off when possible.
- Should earthworks/enabling works and construction activities need to be carried out during night-time hours, the local authority could include a planning condition which requests advance notice and details of any night working to provided.

8.158. The implementation of these measures should help to ensure that the impact of noise from construction activities is minimised.

Residual Impacts

8.159. Once the best working practices are implemented, the residual impacts will be generally negligible with only brief periods of minor impacts.

Vibration from Earthworks/Enabling Works and Construction Activities

8.160. At this stage it is not proposed to introduce any specific vibration mitigation measures to any receptors. However, as with noise from earthworks and construction works, working practices should be implemented to prevent unnecessary vibration at all receptor as much as possible. To keep groundborne vibration to a minimum the following measures, as referred to in BS5228 Part 1, should be put in place:

- Substitution: Where reasonably practicable plant and or methods of work likely to cause significant levels of vibration at the receptors identified, should be replaced by less intrusive plant/methods of working.

- Vibration Isolation of plant at source: This may prove a viable option where the plant is stationary (e.g. a compressor, generator) and located close to a receptor.

8.161. In relation to piling, should it be required, there are a number of measures which can be implemented, depending upon the type of piling chosen. BS5228 Part 4 indicates that mitigation might include: Use of alternative methods, removal of obstructions, provision of cut-off trenches, reduction of energy input per blow, reduction of resistance to penetration. Continuous flight augering would cause minimal vibration even very close to the piling operation.

8.162. As the construction programme and methodologies become more defined it is suggested that earthworks and construction vibration be reconsidered and that a detailed strategy for control be implemented. This would ensure that there are no residual vibration impacts at both nearby existing sensitive properties and listed buildings at Spring Gardens and The Quadrant.

Operational Phase

Road Traffic Noise and Existing Sensitive Receptors

8.163. The noise levels predicted at the existing receptor locations, for the 2012 and 2017 baseline and “With Development” scenarios have been compared and the results show that the increase in road traffic will be insignificant. Mitigation measures are therefore not necessary.

Residual Impacts

8.164. The residual impacts of the increase in road traffic noise during the operational phase of the development will not be significant.

Existing Sensitive Receptors and Ancillary Noise

8.165. Measures to mitigate noise from sources associated with the operational phase of the development, for example the air handling units and activities associated with the delivery of goods to the food store and retail units, will be included in the detailed design of the development to ensure a significant noise impact is not created at existing sensitive receptors.

Residual Impacts

8.166. The residual impacts of the noise likely to be generated by the proposed on-site activities during the operational phase of the development will not be significant.

Proposed Sensitive Receptors and Noise

8.167. The noise attenuation provided by the overall façade of the proposed noise sensitive developments, i.e. the hotel and offices, should be considered. Subject to the provision of a detailed design for the hotel and offices it would be reasonable to assume that the proposed development design includes glazing to bedrooms, all other areas of the hotel and areas of the offices comprising about 25% of the façade area. To calculate the overall attenuation provided by this percentage of glazing in a brick or block façade, a non- uniform partition calculation can be used.

8.168. The calculation combines the different degrees of attenuation of the wall element and the window element. A façade element comprising a solid brick or blockwork, will attenuate by between 45-50 dB (BRE Digest 338 “Insulation against external noise”) whereas standard thermal glazing will attenuate traffic noise between 26-29dB(A) (BRE Digest 379 “Double glazing for heat and sound insulation”). The overall noise attenuation provided by this combination is between 31.9dB(A) and 34.9dB(A).

8.169. Based on the noise prediction calculations and noise survey results, the proposed facades of the hotel located nearest to and with a direct line of sight of the local road network, will require higher specification glazing in order to achieve an internal noise level of 30dB L_{Aeq} and 45dB L_{AMAX} in bedrooms during the daytime and night-time, with windows closed.

8.170. For all other areas of the hotel, it is considered that standard double glazing will be sufficient to achieve the internal noise levels during the daytime and night-time, with windows closed.

8.171. To remove the need to open a window and hence maintain the attenuation provided by the glazing, acoustic ventilation will need to be installed. The acoustic ventilation proposed at the site will, as a minimum, comply with Building Regulations 2000 Approved Document F1 Means of Ventilation and British Standard BS5925 1991: “Code of Practice for Ventilation Principles and Designing for Natural Ventilation”.

8.172. At this stage it is likely that standard double glazing would be sufficient to achieve an internal noise level of 45dB L_{Aeq} during the daytime at the offices, with windows closed. To remove the need to open a window and hence maintain the attenuation provided by the glazing, acoustic ventilation may need to be installed.

8.173. The exact glazing and ventilation specifications for the hotel and offices will therefore need to be confirmed once the building construction and glazing/façade areas are known. However, the implementation of glazing together with appropriate ventilation should ensure that the required internal noise limits are met, during both the daytime and night-time period.

Residual Impacts

8.174. Once the mitigation measures have been implemented, the residual impacts of the existing and future noise sources on the proposed sensitive areas of the development will not be significant.

Summary Findings

Enabling works/earthworks Phase and Construction Phase

Noise from Earthworks/Enabling Works and Construction Phase:

8.175. The activities carried out during the construction phase of the development will have the potential to generate short term increases in noise levels above those recommended in (AL)72. Give the distances between the site and the nearest noise sensitive receptors it is likely that the noise levels would exceed the recommendations in (AL)72 for a short period of time, when the construction works are being carried out in the immediate vicinity of these receptors.

8.176. To ensure the recommendations in (AL)72 are not exceeded at existing sensitive receptors, mitigation measures would be put in place. These will include the implementation of temporary screening, best working practice, and restrictions on working hours.

8.177. Overall, taking into account the sensitivity of the receptors and the predicted residual impacts, the noise impacts of earthworks/enabling works and construction phases is considered to be generally negligible with only brief periods of minor adverse impacts.

8.178. It is possible that following discussions with High Peak Borough Council, mitigation measures and controls could be included under a COPA 74 Section 61 Agreement.

Vibration from Earthworks/Enabling Works and Construction Phase

8.179. The use of heavy plant associated with the earthworks and construction works has the potential to give rise to groundborne vibration. The nearest sensitive properties to the proposed construction works of the development are located off Wye Street/Spring Gardens, with some works potentially being carried out at a distance of 10 metres from these existing sensitive receptors. Some existing sensitive receptors may therefore experience a minor impact. However this would occur only temporarily.

8.180. To minimise the potential levels of vibration generated by the activities associated with the earthworks/enabling works and construction phases of the development at existing sensitive receptors, best working practice would be put in place where possible.

8.181. Overall, taking into account the sensitivity of the receptors and the predicted residual impacts, the vibration from earthworks/enabling works and construction phase is considered to be generally negligible with only brief periods of minor adverse impacts.

8.182. In addition to earthworks and enabling works it is possible that piling will be required. At this stage detailed information regarding the type of piling has not been confirmed. To minimise the potential for vibration to be generated by piling it is recommended that careful consideration be given to the type of piling to be used. For example auger bored piles would be preferable to driven piles with regards to a reduced potential for noise and vibration to be generated. However, it is recognised that the piling process will need to be selected on the basis of the strata to be encountered, the loads to be supported and the economics of the system.

8.183. Once the precise building locations, ground conditions for each location and subsequent suggested type of piling are confirmed, vibration levels could be estimated and recommendations for control made as appropriate.

8.184. The receptors most likely to be affected by piling are the residential properties on Wye Street/Spring Gardens. The listed buildings at Spring Gardens and The Quadrant may also potentially be affected. It is possible that the Local Authority would consider setting a boundary condition at the nearest properties. For example, for non-continuous sources of vibration a PPV limit of 3mm/sec may be set for periods of earthworks and construction works, including piling. This limit would ensure that the vibration impact at the nearest sensitive properties and listed buildings would be no more than minor adverse. It should also ensure that complaints due to vibration and cosmetic and structural damage do not occur.

Operational Phase

Road Traffic Noise and Existing Sensitive Receptors

8.185. The changes in road traffic noise due to the development generated traffic have been assessed at a number of existing sensitive receptors. The assessment confirms that in accordance with the significance criteria included in this chapter, the increase in road traffic noise in 2012 and 2017, at the existing sensitive receptors CRTN 1 to CRTN 12, will be imperceptible and the impact will be insignificant.

8.186. The existing receptors are moderately sensitive and in accordance with the Impact Significance Matrix in Table 8.4 the noise impact road traffic noise, due to traffic associated with the development, would be negligible. Mitigation measures are not therefore required.

Existing Sensitive Receptors and Ancillary Noise

8.187. Once operational, the proposed development will have the potential to generate noise from a number of ancillary sources. These include air handling units and activities associated with the delivery of goods for the food store and other commercial units (retail and hotel).

8.188. Measures to mitigate noise will be included in the detailed design of these parts of the development to ensure that a significant noise impact is not created at existing noise sensitive receptor locations.

8.189. Overall, taking into account the sensitivity of the receptors and the predicted residual impacts, the potential noise impact from ancillary type noise sources associated with the proposed development would be negligible.

Proposed Sensitive Receptors and Noise

8.190. A noise survey and prediction calculations have been carried out to determine the noise levels at the noise sensitive areas of the site once the development is operational, i.e. the hotel and offices.

8.191. The results of the noise survey and prediction calculations indicate that mitigation measures will need to be implemented to ensure that the required internal daytime and night-time noise levels are achieved at the hotel.

8.192. The results of the noise survey and prediction calculations indicate that mitigation measures will need to be implemented to ensure that the required internal daytime noise level are achieved at the offices.

8.193. Recommendations for mitigation are made in this report and a detailed noise mitigation scheme specifying mitigation will be produced once detailed design information for the hotel and offices is available. The implementation of this scheme would ensure that the required internal daytime and night-time noise levels, caused by external noise, are achieved at the noise sensitive areas of the development.

References

8.194. The following sources of information were used in the preparation of this assessment:

Noise

- British Standard BS 5228 Part 1 1997 “Noise and Vibration Control on Construction and Open Sites”.
- The Department of the Environment’s Advisory Leaflet (AL)72.
- Department of the Environment, Planning Policy Guidance Note 24 (PPG24): “Planning and Noise”, 1994.
- British Standard BS 8233: 1999 “Sound Insulation and Noise Reduction for Buildings – Code of Practice”.
- World Health Organisation, Guidelines for Community Noise, 1999.
- “Calculation of Road Traffic Noise” Department of Transport 1988 (CRTN).

- BRE Controlling particles, vapour and noise pollution from construction sites, parts 1 to 5, 2003.

- The Control of Pollution Act, 1974.

- Update of noise database for prediction of noise on construction and open sites, 2005, Defra.

Vibration

- British Standard BS 5228 Part 4 1992 “Noise and Vibration Control on Construction and Open Sites. Code of practice for noise and vibration control to piling operations”.

- Association of Noise Consultants, Measurement and Assessment of Groundborne Noise and Vibration, 2001.

- Highways Agency Research report No. 53 “Ground Vibration caused by Civil Engineering Works” 1986, Transport and Road Research Laboratory.

- British Standard BS6472, 1992 “Guide to Evaluation of human Exposure to vibration in Buildings (1 Hz to 80 Hz)”.

- British Standard BS7385 1993 “Guide to Evaluation and measurement for Vibration in Buildings: Part 2 Guide to damage levels from Groundbourne vibration”

- The Environmental Protection Act 1990.

Appendices

Appendix 8.1: Traffic Flow Information and CRTN Calculations

Appendix 8.2: Noise Monitoring Results

Appendix 8.3: Figure 8.1

Appendix 8.4: Figure 8.2

9. Hydrology: Water Resources, Flood Risk, Drainage and Ground Water

Introduction

9.1. This chapter considers the hydrological, drainage, and flood risk issues associated with the proposed redevelopment of the Spring Gardens Shopping Centre in Buxton, which incorporates a retail food store, office accommodation, a new hotel and multi-storey car park, new public realm and small retail provision. The purpose of this assessment is to identify surface water and groundwater features and characteristics on site and in the vicinity of the proposed development; to identify the impact potential of the development proposals; to review the efficiency of the proposed mitigation measures; and to identify the significance of the residual impacts.

Policies and Guidelines

National Policies

9.2. Planning Policy Statement 25: Development and Flood Risk (PPS 25) was issued by the Department for Communities and Local Government (DCLG) in December 2006. PPS 25 reclassifies the Flood Zones as being "Low probability" (Flood Zone 1), "Medium probability" (Flood Zone 2), and "High probability" (Flood Zone 3). Flood Zone 3 is further divided into 3a and 3b with Zone 3b being defined as the "Functional Floodplain". PPS25 requires a risk based approach to flood risk to be adopted at all levels of planning.

9.3. PPS25 advises that a strategic approach should be adopted in keeping with Government aims to ensure that new development is sustainable. PPS25 requires that a risk based approach to flood risk is adopted at all levels of planning. It introduces:

- The concept of classification of the vulnerability of development to flood risk;
- The need to conform to the requirements of the "Exception Test" in circumstances where new development is proposed in a higher risk Flood Zone than is defined as "appropriate" within PPS25;
- The need to apply Strategic Flood Risk Assessment (SFRA) to decisions taken at all levels of planning, i.e. the need for assessment at the Regional Spatial Strategy and Local Development Framework level.

9.4. Additionally PPS25 introduces the concept of Flood Risk Reduction, particularly in circumstances where development has been sanctioned on the basis of the "Exception Test".

Regional and Local Policies

9.5. The relevant National, Regional and Local Policy relating to Hydrology and Flood Risk is provided in further detail in Section 3.

Approach to Assessment

9.6. The methodology involves an initial review of the baseline conditions relating to the hydrological environment. The second phase of this assessment considers the impact potential of the construction and operational conditions associated with the scheme. These impacts exclusively relate to the potential for degradation or improvement to the hydrological environment and the risk to receptors on and off site as a result of changes arising from the

development. The third phase describes a series of mitigation measures that have been identified to ameliorate the adverse impacts of the proposed development.

9.7. Table 9.1 indicates the assessment methodology that is used to assess the level of each impact identified.

Table 9.1: Table of Assessment of Significance

	Strength of Impact			
Magnitude of potential impact	**High**	**Medium**	**Low**	**Negligible**
High	Highly Significant	Significant	Moderately Significant	Slightly Significant
Medium	Significant	Significant	Moderately Significant	Slightly Significant
Low	Moderately Significant	Moderately Significant	Slightly Significant	Slightly Significant
Negligible	Slightly Significant	Slightly Significant	Slightly Significant	Not Significant

9.8. Table 9.2 summarises the main consultations undertaken as part of the EIA process.

Table 9.2: Consultation

Date	Details
27/08/2007	Site visit and meeting with EA regarding Buxton Spring Gardens FRA
07/03/2008	Telephone consultation with EA in relation to flood compensation.
10/03/2008	Phonecall and exchange of correspondence with EA in relation to potential raising of retail unit levels.

Baseline Conditions

9.9. The following information has been researched in order to provide input to this Chapter:

- High Peak Borough Council Local Development Plan;
- Planning Policy Statement 25 – Development and Flood Risk;
- OS mapping at 1:50,000 scale;
- EA Flood Zone Mapping;
- EA River Wye Strategic Flood Risk Mapping hydraulic model flood levels;
- Archaeological Desk Based Assessment including historical land use maps;
- Hydrological Information obtained from the Flood Estimation Handbook CD ROM;
- Buxton Crescent and Spa, Flood Risk Assessment, (including survey of culverts under Spring Gardens) May 2005, Faber Maunsell;
- The Derbyshire Derwent CAMS (2006); and
- http://www.cressbrook.co.uk/features/wye.php (28/09/2007).

9.10. For the purpose of this assessment the reference year is set to be approximately mid 2012

at which time completion of the proposed development is expected. Climate change is the driver behind any expected changes in baseline conditions with regard to flood risk and surface water. Increased global temperatures are expected to result in rising sea level, increased rainfall volumes and changes in temporal and spatial weather patterns. Nevertheless, increased risk to the current site would be small between the present day and 2012 and as such baseline conditions on the site for 2012 can be treated as the existing.

9.11. The site lies within the catchment of the River Wye and is located in the centre of Buxton. The River Wye rises on Axe Edge, above Buxton, and flows eastwards through Buxton and Bakewell to join the River Derwent at Rowsley. At the confluence with the River Derwent, the River Wye has a catchment area of approximately 628km^2. Land use within the catchment is mainly rural moorland which experiences very high annual rainfall, in excess of 1450mm. The distinctive carboniferous limestone landscape of the White Peak is characterised by wooded gorges and limestone cliffs of the Dales and Matlock. The limestone geology of the River Wye catchment is permeable and has a low runoff response to rainfall however the upper catchment of the Wye around Axe Edge is located on a different geology and can result in rapid runoff and a quick catchment response in the River Wye at Buxton.

9.12. As the river flows through Buxton it is predominately in culvert. The oldest sections of the culvert date back to the 1780s and carry the river from an open section in the Pavilion Gardens, beneath The Crescent building. More recently the culvert was extended to pass under the adjacent road and the existing Spring Gardens Shopping Centre. Downstream of Buxton the River Wye grows into a significant river.

9.13. The River Wye flows in culvert directly upstream of the current site. It opens out briefly for a distance of 52m adjacent to the existing Spring Gardens site before entering another culvert for a further 56m to pass under the south east area of the site at NGR SK 061736. The catchment area of the River Wye to the entrance of this culvert (in the Pavilion Gardens) is 9.59km^2. The River Wye is currently classified as 'main river' by the EA. As such, the EA have powers over maintenance of, and discharges to, the watercourse.

9.14. The Nun Brook and Hogshaw Brook flowing from the north of Buxton meet the River Wye approximately 230m downstream of the site. This is where the River Wye emerges from the last culvert beneath Buxton.

9.15. The River Wye has been the subject of a detailed hydraulic study undertaken by the Environment Agency. This included a detailed survey of the culvert network including capacity calculations. The results from the EA hydraulic model of the River Wye have been used to prepare this assessment.

9.16. A plan of the site showing the key Hydrological features is included in Appendix F of the Spring Gardens Flood Risk Assessment (FRA) at **Appendix 9.1**.

Topography

9.17. The site is currently used as a car park for the Spring Gardens Shopping centre. Ground levels are at approximately 287m AOD and there is a slope across the site from the northern boundary towards the River Wye. Bank levels along the open section of the River Wye adjacent to the site are approximately 285m AOD. The bank levels downstream at the confluence with the Hogshaw Brook are 283.3m AOD with ground levels at 285.4m AOD.

9.18. Buxton lies in a natural basin scooped out by glaciers, on leaving this basin the river has had to carve a long series of gorges which characterise the section between Buxton and Ashford-in-the-Water. The river downstream of the site follows a deep-cut valley which is often lined with cliffs and is sometimes spectacularly narrow as it runs through a series of gorges. The Wye passes several mills, notably Litton Mill and Cressbrook Mill before entering Monsal Dale where the valley widens out. The valley further widens at Bakewell and is joined by the River Lathkill before flowing on to Rowsley and the confluence with the River Derwent.

Hydrometric Data and Monitoring

9.19. The existing EA hydraulic model that was built originally in 1998 has more recently been updated for use in the River Wye SFRM (Strategic Flood Risk Mapping) study. The model has not been calibrated by the EA due to a lack of gauged flow data or gauging stations in the upper Wye catchment. Flows used in the EA model were derived from a hydrological model study for the sub catchments which drain to the Wye.

9.20. The nearest level gauge to the Spring Gardens Site is 1km downstream, to the south west of Buxton, at SK 06507298. The gauge has been operational since 1st February 2002 with good quality data, but there have been no significant flood events on the River Wye since October 1998 and November 2000 to provide any useful flood level analysis from this gauge.

9.21. Rain gauges within the River Wye catchment are located at Chapel Reservoir, Tideswell and Ashford Hall. The Flood Estimation Handbook (FEH) CD ROM gives the SAAR (Standard Average Annual Rainfall) to be 1358mm/year.

9.22. During consultations with the EA for the Buxton Crescent and SPA study, a 1 in 100year event flow was agreed of 15m^3/s and a climate change flow of 18m^3/s. The culvert to the rear of the Crescent was established to have a capacity of 15m^3/s.

9.23. The hydraulic grade line through the culvert for the 1 in 100 year flood flow of 15m^3/s is likely to cause flooding to a level of at least 290mAOD in the area of the Crescent with flow backing up via soughs, manholes and gulleys being the most likely cause of flooding in the area of the Crescent. This prediction is consistent with observed historic levels. The Crescent is located upstream of the Spring Gardens site.

Ground Conditions

9.24. The site is located in an area with high groundwater and many springs. Buxton is well known for its spring water and there are a number of formal and informal springs within the town centre.

9.25. The site lies within a source protection zone. The site partly lies in Zone 2 (Outer Protection Zone) and Zone 3 (Total Catchment). The catchment of the River Derwent including the River Wye is managed by a Catchment Abstraction Management Strategy (CAMS).

9.26. The major aquifers in the Derwent catchment are the Carboniferous Limestone which outcrops to the west of the catchment and which is anticipated to underlay the Spring Gardens area. The aquifer has historically been heavily utilised for drinking water and for use in the town's recreational and medicinal spa baths and there continues to be a major industrial use of the spring waters by commercial mineral water producers. Although use of the spring water for recreation is currently limited there are plans to reintroduce a spa to the town.

9.27. There are currently no springs or resurgences evident on site itself. A review of the historical mapping for the area has shown the original course of the River Wye was to the north of the current alignment and indicate that the river was straightened and culverted beneath the Spring Gardens area between 1967 and 1977.

9.28. The geological mapping of the area suggests that the natural ground conditions on the site are likely to be of a highly permeable nature (limestone). However, the natural soils and geology are almost entirely obscured on the site by the impermeable tarmac surfacing on the existing car park area and as a result the baseline runoff levels are expected to be fairly high. The baseline runoff characteristics are discussed later in this chapter.

Environmental Designations (surface and ground water)

9.29. The Wye Valley is designated as a SSSI for its conservation value and several sites have

been nominated for protection under the European Habitats and Birds Directives. Water dependant sites include the alkaline fens of the Wye Valley which support many plants which are scarce in the UK. The majority of the Wye Valley SSSI is currently in a 'favourable condition' (Natural England condition survey). The current favourable conditions can be expected to rely at least in part on good water quality and an appropriate flow regime in the River Wye.

Flood Risk

9.30. Current potential flood risk to the site is from the River Wye and from surface water or sewer flooding. There are no records of groundwater flooding on the site and it is likely that any rising groundwater would be prevented from affecting the site by the current impermeable man made surfaces such as tarmac.

River Wye – Flood Risk

9.31. Environment Agency Flood Zone Mapping shows the site to be partially located within Flood Zones 2 and 3. Flood Zone 2 is defined as being the area potentially at 'Medium Probability' of flooding disregarding the effects of any flood defences. Flood Zones are classified within Table D.1 of PPS25. Flood Zone 2 comprises land assessed as having between a 1 in 100 and 1 in 1000 annual probability of river flooding (1% - 0.1%). Flood Zone 3 is defined as being the area potentially at 'High Probability' of flooding disregarding the effects of any flood defences. Flood Zone 3 comprises land assessed as having a 1 in 100 or greater annual probability of river (>1%) flooding in any year.

9.32. Initial consultations with the EA have indicated that the flood envelope defined in the Flood Zone Mapping for the 1 in 1000 year return period is likely to be an overestimate of the true risk to the site. The 1 in 1000 year flood outline quoted by the EA is not taken from the detailed hydraulic model and is from a basic "JFLOW" or spreading model where generalised flood levels have been spread across a basic topography of the area.

9.33. The EA have carried out a more detailed study of flood risk on the River Wye through Buxton. Water levels from this detailed modelling for the 1 in 100 year event and the 1 in 100 year event were obtained from the EA and are shown in Table 9.3. No levels are available for the 1 in 100 year event including climate change or the 1 in 1000 year event.

Table 9.3: Water levels from the Environment Agency SFRM model.

Cross section	Location	1 in 100 year (m AOD)
WY 130u	Cross section upstream of culvert	293.25
WY 129.4 K-A	Large culvert section under Crescent & Spring Gardens, average levels	290.04
WY 129.4	Downstream of culvert	287.94
WY 129.3	Upstream of Wye Street culvert	287.77
WY 129.2 D-A	Wye Street culvert average levels	287.44
WY 129.2	Downstream of Wye Street culvert	287.16
WY 129.1	Upstream of Bridge Street culvert	286.10
WY 129 D-B1	Bridge Street culvert average levels	285.66

9.34. There are four main flooding mechanisms by which the site may be affected. These mechanisms are:

- Overtopping of the river at Pavilion Gardens and overland flow through the town centre.
- Overtopping along the short open section adjacent to the site due to high flows.
- Possible culvert blockage downstream of the site causing overtopping on the open section.
- Surcharging of the culvert adjacent to the site and flooding through surface water sewers connected to the culvert.

9.35. Flooding of Pavilion Gardens has been identified as a source of flooding by previous studies in very extreme events (greater than 1 in 100). Overland flow paths from overtopping of the river here indicate flows may travel around the north side of Old Court House along George Street or straight through The Crescent development then along Spring Gardens to enter the river downstream of the 435m culverted section.

9.36. According to the flood risk study undertaken at Buxton Crescent it is not thought that flooding and levels at the confluence of Hogshaw Brook and the River Wye would have an impact on the capacity of the culvert or flood levels in the vicinity of the Crescent. The report did not state if the confluence would influence the culvert beneath Spring Gardens.

9.37. The major historical flooding in Buxton was thought to be due to a blocked culvert which has since been repaired. Changes to the configuration of the downstream culverts during the last 12 years could have reduced the risk of blockage. River wall works may have also resulted in an improved channel and may have a reduced the potential flooding. Given the size of the culverts through Buxton, blockage or partial blockage is unlikely.

9.38. Historic records of flooding confirm flooding a significant flood event in 1998. During this event Devonshire Bakery (on the main shopping street in Spring Gardens) indicated that water rose 18 inches (450mm) above ground level. During the Buxton Crescent and Spa study local knowledge was gained from business owners in the area. “No one approached had observed flooding originating from high river flows overtopping from the Pavilion Gardens, suggesting that the main mechanism of flooding has been overflowing from drains, with low cover levels, connected directly to the culvert.”[11]

9.39. It is thought that many of the surface water drains on site connect directly to the culvert. Where ground levels are below the maximum potential “head” within the culvert there is the possibility of manhole surcharging and flooding of lower parts of the site through this route. We are not aware that this has been observed on site.

Surface Water and Drainage

9.40. The potable water and drainage company for the site is Severn Trent Water. A plan of the surface water sewers is shown in Appendix D of the FRA.

9.41. The combined sewer to the west of the site flows south along Station Approach, onto The Quadrant and east along Spring Gardens where it is joined by the combined sewer from the east of the site. The sewer then flows south east towards the treatment works on the Bakewell Road. In the event of these sewers surcharging, the local topography suggests water would be likely to flow east along Spring Gardens away from the site.

9.42. Surface water runoff from the existing car park drains to grates across the site. Two rows of drains run parallel to the north of the existing Spring Gardens Centre and these drain

[11] Buxton Crescent and Spa, Flood Risk Assessment, May 2005, Faber Maunsell

underneath the shopping centre, to the long culverted section of the River Wye that enters the site from the west. The existing car park that lies to the east of the existing buildings on site drains to the culvert beneath New Wye Street.

9.43. In the event of the sewer system surcharging, according to ground levels the surface water would be likely to run off the site towards the south east corner of the site and along Wye Street. Road levels indicate that water would continue downhill towards the A6 Bakewell Road or into the River Wye. Water levels on site due to surcharging are likely to be directly linked to water levels in the River Wye.

9.44. The majority of the site is currently used as a car park and is an impermeable surface. Ponding of surface water is unlikely to occur on the site as levels fall gradually towards the river. Surface water flow paths on site are in a southerly direction towards the River Wye.

Constraints and Limitations to the Baseline Assessment

9.45. Upstream of the development site, The Buxton Crescent and Thermal Spa Project is another major development in Buxton, which involves the refurbishment and extension of the Crescent building located circa 100m south west of Spring Gardens Shopping Centre. The majority of the works are internal, though the scheme does involve the demolition of one building to be replaced by a new structure of a slightly greater floor space. To date no work has commenced on site, but ground investigations are expected to commence in the near future. An FRA has been produced for this development advising that floor levels remain as existing and that flood risk is not increased off site as a result of the development. The Crescent development should therefore have no impact on the baseline hydrological situation at the Spring Gardens site.

9.46. The EA have indicated that the extent of Flood Zone 3 shown on the latest flood maps is taken from historic flood extents and that the recorded flooding may have been caused by surface water flooding rather than direct overflow from the River Wye. It is probable that surface water sewers in the area drain directly into the culvert and flooding is observed when levels in the culvert are high and cause overflowing in nearby drains with lower cover levels. This suggests flooding of the site is possible even if the river does not overflow its banks directly.

9.47. The 1 in 1000 year flood outline quoted by the EA is not taken from the detailed hydraulic model and is from a basic “JFLOW” or spreading model where generalised flood levels have been spread across a basic topography of the area. As the course of the River Wye has been significantly altered historically and the levels around it changed significantly it is not thought the Zone 2 Flood Zone is accurate at this location.

Assessment of Impacts

Construction Impacts

9.48. The impacts from the construction stage are considered temporary, and are not expected to continue to the operational stage of the development. Three main impacts are considered:

- Impact on the floodplain,
- Impact on the watercourse,
- Impact on groundwater.

<u>Impact on the Floodplain</u>

9.49. The erection of temporary buildings, foundations and stockpiles, within the floodplain, has the potential to alter flow paths within the site during times of flood potentially displacing overland flow. This has the potential to cause flooding to other areas within the allocated

site and to downstream receptors with the potential for increased flow in the River Wye as a result of reduced capacity on the floodplain. This impact is considered to be **moderately significant** as the 1 in 100 year flood outline is not extensive in the area.

Impact on the Watercourse

9.50. Flooding of excavations by surface water and construction runoff are likely to have an impact on water quality with the potential to cause damage to general river quality and the River Wye SSSI. The potential for larger items to be carried off site increases with storm intensity.

9.51. There is likely to be a decrease in surface water runoff during construction reducing flows in the River Wye due to the removal of existing tarmac reducing the area of impermeable surfaces.

9.52. Construction activities including the presence of diesel engines from site vehicles have the potential to increase the contaminant load of surface runoff with hydrocarbons, polluting the River Wye.

9.53. These impacts are considered to be moderately significant with the potential to influence the present favourable condition of the SSSI which relies on water quality and an appropriate flow regime.

Impacts on Groundwater

9.54. There is likely to be an increase in flow to groundwater during construction due to the removal of existing tarmac surfaces.

9.55. The release of sediment and construction dust to groundwater have the potential to impact on the major aquifer and commercial supply.

9.56. Construction activities including the presence of diesel engines from site vehicles have the potential to increase the contaminant load of runoff with hydrocarbons and there is potential for groundwater to be impacted.

9.57. These impacts are considered to be significant.

Operational Impacts

Impact on the Floodplain

9.58. There is a potential loss of floodplain storage as a proportion of the development falls within the 1 in 100 year floodplain outline, although the flood outline is not extensive it still can have the potential to increase flood risk elsewhere unless it is mitigated against. This impact is considered to be significant.

9.59. There is a potential of disruption of surface water flow paths across the site to the river through obstruction from new buildings and potential to push surface water elsewhere. The proposed development may impede surface water runoff from the existing situation. This is considered slightly significant.

Impact on Watercourse

9.60. There is the potential of increase in contaminated runoff from oils and hydrocarbons from the site due to the increased car use from the redevelopment which may have an impact on the River Wye water quality. This impact is considered to be slightly significant.

9.61. The new development has the potential to increase the chance of causing obstructions or blockages in the culverted sections due to the increase of public access increasing the risk of flooding to the site from the River Wye due to backing up of the watercourse. This has

been highlighted as a cause of flooding from historical reports where a culvert backed up as a result of a blockage. This impact is considered to be moderately significant.

9.62. As the site is currently 100% tarmac and hard standing there will be no net increase in surface water runoff due to the development.

Impact on Groundwater

9.63. The disruption of groundwater flow paths will only be significant if the proposed foundations are relatively deep requiring excavation of the existing ground surface or piling. Deep foundations or piles have the potential of opening contaminant pathways into the aquifer below the site and of disrupting local horizontal flow paths within the aquifer if these are present. There are no records of groundwater level or flow directions available on the site, however given the relative proximity of the River Wye and the site's location towards the bottom of the River Wye Valley it is likely groundwater levels are relatively close to the surface.

9.64. It is not thought that the soils under the Spring Gardens site are significantly contaminated and if this is confirmed the impact on groundwater as a result of the opening of contaminant pathways is considered moderately significant.

Mitigation

Construction Phase

Impact on the Floodplain

9.65. The impact on surface water flow paths due to construction will be managed by the implementation of a Construction Management Plan outlining correct management of materials on site, this plan will guide the location of stockpiles and temporary site compounds and buildings away from the area of the site identified as at risk of flooding in the 1 in 100 year event. The Construction Management Plan will also identify the predominant surface water flow paths as from north to south across the site and will advise the avoidance of placing stockpiles and temporary buildings in locations where they would disrupt surface water flow paths. The adoption of an appropriate construction methodology in line with the Construction Management Plan will mitigate the impact of altering local surface water flow paths.

Impact on Watercourse

9.66. The Construction Management Plan will also ensure the correct management of stockpiled topsoil, excavation material and stockpiled construction materials and will ensure that sediment loads are limited in any overland flow generated. The Plan will specify that stockpiled materials brought onto site and stored for periods of more than a few days are covered and sealed to reduce the risk of contamination of the watercourse with sediment.

9.67. The impact of the potential increase in contamination to the River Wye from oils and hydrocarbons can be mitigated by fitting oil interceptors within the new surface water drainage system early in the construction phase and prior to the commencement of any major works. These interceptors collect any potential contaminants allowing them to be removed from site and disposed of appropriately. During the initial stages of construction and if the permanent oil interceptors are not yet in place, temporary facilities for the collection and if necessary treatment of any surface water runoff from the site will be provided.

Impact on Groundwater

9.68. Removing impermeable areas during construction has the potentially significant impact of opening pathways for contaminants to infiltrate to groundwater. The site is currently

effectively sealed by a layer of tarmac hard standing across almost the entire site area. The Construction Management Plan will outline mitigation measures to remove or limit this potential. Measures will take the form of limiting the time that pathways to the underlying aquifer are unsealed by providing temporary impermeable membranes where the "natural" ground surface is exposed. It may be appropriate to undertake significant removal of the existing tarmac and replacement by either a temporary or permanent impermeable surface at times when a number of days of dry weather are forecast. These actions will mitigate the impact of potential groundwater contamination due to the opening of a groundwater pathway. Alternatively this can be mitigated altogether by avoiding the removal of the existing impermeable surfaces during the construction phase and leaving the existing tarmac surface in place below the new surfacing proposed for the site.

9.69. If piling or deep foundations are required for the new construction the potential impacts will be mitigated by use of industry best practice guidance, specifically the use of methods outlined in the document "Piling and Penetrative Ground Improvement Methods on Land Affected by Contamination: Guidance on Pollution Prevention, National Groundwater and Contaminated Land Centre Report NC/99/73" and the Environment Agency document "Policy and Practice for the Protection of Groundwater". It is not thought that the soils below the site are contaminated and this in conjunction with the use of methods to control pollution and surface water flows on site during construction will significantly reduce the potential impacts on groundwater quality during the construction phase.

Operational Phase

Impact on the Floodplain

9.70. A proportion of the development site is within the 100 year flood plain as a proportion of the retail units will be within the floodplain in this area. The EA have agreed that retail units 1 and 2 have 287.375mAOD, unit 3 has 287.815mAOD and unit 4 has 287.800mAOD finished floor levels (FFL's). Access and egress routes from the retail units are agreed to be at a minimum level of 287.47mAOD, 300mm below the 1 in 100 year flood level. This indicates that units 1 and 2 will be at risk of flooding during a 1 in 100 year flood event. The EA suggest to modify landscaping between the retail units in the public open space above the line of the culverted section of the River Wye in order to channel extreme flood flows in the direction of the watercourse and away from the adjacent retail units. Once past these units the gradient suggests the water will flow down New Wye Street away from the developed site and other buildings in the area providing an acceptable level of mitigation. Retail units 1 and 2 will be allowed to flood in the most extreme events after development and as such the loss of floodplain storage is limited. It is recommended that retail units 1 and 2 incorporate flood resilient materials and construction methods in their construction from floor level up to at least the 1 in 100 year flood level (287.77mAOD). Any resilience measures taken will significantly reduce the recovery time of the units following flooding potentially allowing re-occupancy to take place earlier than if the measures aren't undertaken. The EA have agreed there is no requirement to provide compensatory flood storage.

9.71. Maintenance of the proposed surface water oil interceptors throughout the lifetime of the development is essential to ensure their continued use to filter out any potential contaminants from entering the River Wye. A programme for maintenance of the interceptors and other elements of the on site drainage will be implemented by the site management.

9.72. As the potential increase in culvert blockage material impact is moderately significant a maintenance regime will be implemented to manage the clearance of debris and obstructions in the river. In addition the site management will undertake an annual inspection of the culvert and river channel within their ownership and will identify and implement any works considered necessary to maintain the channel and culvert.

Impact on Groundwater

9.73. Following completion of the development an impermeable surface across the site will be in

place preventing any potential of contamination of groundwater through infiltration and the current baseline situation will be reintroduced. Where (and if) it is necessary to use deep foundations or piles to support the new buildings these will be implemented as outlined in the sections above and will be sealed in their upper levels to prevent use of these as a "pathway" by infiltrating surface water.

9.74. Providing measures are undertaken to ensure pathways to groundwater are limited or closed during construction and closed on completion the potential impact on groundwater is not considered to be significant.

Residual Impacts

9.75. The implementation of a Construction Management Plan outlining the following mitigation measures to be included during the construction phase will reduce their respective impact to not significant:-

- Correct management of materials on site to ensure existing surface water flow paths are maintained and flood risk is not increased off site.
- Ensuring the potential movement of sediment loads from materials on site are limited by covering and sealing stock piles and open ground.
- Management of open permeable pathways to groundwater ensuring time is limited and providing temporary impermeable membranes where possible.

9.76. Fitting and maintaining permanent oil interceptors to surface water outfalls ensure that potential contaminants are filtered out before entering the River Wye reducing the impact to not significant.

9.77. A proportion of the floodplain volume lost as a result of the development will be mitigated by allowing the retail units to flood following development (i.e. they are not protected from flooding) and by the landscaping around the retail units to channel overland flow above the existing culvert. The residual impact on the floodplain is considered not significant as finished floor levels are similar to existing ground levels.

9.78. A management regime will be implemented on the completed site to regularly check the River Wye is clear of significant debris and that the open channel and culvert within the site are in a satisfactory condition. This will reduce the impact of flood risk from blockages on the site compared to the baseline situation and will result in a small positive impact.

9.79. The potential impacts on groundwater will be mitigated by the implementation of a best practice construction methodology and on completion the site will be covered by impermeable surfaces (as at present) and potential pathways to groundwater opened as part of the construction process will be sealed. Following mitigation this impact is considered not significant.

Summary Findings

9.80. A proportion of the development site is in EA Flood Zone 3 defined as high probability of flooding assessed as having a 1 in 100 or greater annual probability of river (>1%) flooding in any year. A larger proportion of the site is at risk between 1 in 100 and 1 in 1000 annual probability of river flooding, EA Flood Zone 2 defined as medium probability of flooding. The remainder of the site falls within Flood Zone 1, Low probability of flooding.

9.81. The development site is on existing impermeable land and surface water runoff rates are likely to remain the same following construction.

9.82. Historical records highlight blocked culverts as a cause of flooding in the past. Repairs to culverts and other river works have improved the channel and may have reduced the

potential for flooding to occur. An implemented management regime will ensure regular checks are carried out in order to reduce the risk of blockages on the section of culvert and channel within the site in the future.

9.83. The implementation of a Construction Management Plan will:-

- outline correct management of materials on site away from the flood risk area and away from surface water flow paths to ensure flow paths are not disrupted
- ensure the correct management of stockpiled topsoil, excavation material and stockpiled construction materials
- ensure sediment loads are limited in any overland flow generated
- specify that stockpiled materials brought onto site and stored for periods of more than a few days are covered and sealed to reduce the risk of contamination of the watercourse with sediment
- aim to avoid the removal of the existing permeable surfaces during the construction phase and leave the existing tarmac surface in place below the new surfacing proposed for the site
- outline measures to remove or limit the potential impact of opening pathways for contaminants to infiltrate to groundwater by providing temporary impermeable membranes where the “natural” ground surface is exposed

9.84. The impact of the potential increase in contamination to the River Wye from oils and hydrocarbons can be mitigated by fitting oil interceptors within the new surface water drainage system early in the construction phase and prior to the commencement of any major works. During the initial stages of construction and if the permanent oil interceptors are not yet in place, temporary facilities for the collection and if necessary treatment of any surface water runoff from the site will be provided. A programme for maintenance of the interceptors and other elements of the on site drainage will be implemented by the site management.

9.85. The use of industry best practice guidance for the protection of groundwater will significantly reduce the potential impacts on groundwater quality during the construction phase.

9.86. It is recommended that retail units 1 and 2 incorporate flood resilient materials and construction methods in their construction from floor level up to at least the 1 in 100 year flood level (287.77mAOD). Any resilience measures taken will significantly reduce the recovery time of the units following flooding potentially allowing re-occupancy to take place earlier than if the measures aren’t undertaken. The EA have agreed there is no requirement to provide compensatory flood storage.

9.87. The site management will undertake an annual inspection of the culvert and river channel within their ownership and will identify and implement any works considered necessary to maintain the channel and culvert.

9.88. Following completion of the development an impermeable surface across the site will be in place preventing any potential of contamination of groundwater through infiltration and the current baseline situation will be reintroduced.

9.89. In summary, providing the mitigation measures outlined in this chapter are undertaken it is considered that the residual environmental impact on the water environment will be not significant.

Appendices

9.1 Flood Risk Assessment

10. Archaeology

Introduction

10.1. This chapter assesses the effects of the proposed development on below-ground archaeology. The chapter summarises relevant planning policy and describes the assessment methodology and the selected evaluation criteria. It goes on to describe the baseline conditions by providing a summary of known archaeological information for the study area. It then assesses the likely significant archaeological effects arising from the proposed development, along with the measures available to mitigate for these effects.

Planning Policy Context

10.2. The relevant National, Regional and Local planning policy context for archaeological matters is contained within PPG16, the Regional Spatial Strategy, the Derbyshire Structure Plan and the High Peak Local Plan respectively. Each is summarised at Chapter 3.

Consultations

10.3. As part of the consultation process prior to submission of the ES, the Development Control Archaeologist for High Peak Borough Council was provided with a copy of the Desk-Based Archaeological Assessment. Although he considered that the site has a low potential for archaeological remains, he deems that, given its size and proximity to both the river and the likely extent of Roman settlement, a form of conditioned mitigation would be appropriate.

Methodology

10.4. The Desk-Based Archaeological Assessment on which this chapter is based was carried out in line with Planning Policy Guidance Note 16: Archaeology and Planning (DoE 1990); Planning Policy Guidance Note 15: Planning and the Historic Environment (DoE 1994); The Hedgerow Regulations 1997 (DoE 1997); Management of Archaeological Projects (English Heritage 1991); Standard and Guidance for Archaeological Desk-based Assessment (Institute of Field Archaeologists 2001); Model Briefs and Specifications for Archaeological Assessments and Field Evaluation (Association of County Archaeological Officers, 1994); Research and Professional Guidelines No 1: Geophysical Survey in Archaeological Field Evaluation (English Heritage, 1995); Standards and Guidance for Archaeological Excavations (Institute of Field Archaeologists 1995 rev 2001); and was based on the requirements of the professional standards: Code of Conduct (Institute of Field Archaeologists 2000). The Desk-Based Archaeological Assessment forms **Appendix 10.1**.

10.5. The desk-based research comprised analysis of relevant information contained in and provided by the County Sites and Monuments Record (SMR), and documentary and cartographic searches of relevant material in published and unpublished sources were undertaken at the County Record Office and using CgMs' own library resources. Information regarding Scheduled Ancient Monuments was obtained from English Heritage.

10.6. The potential of a site to contain archaeological remains is based upon a consideration of its topography, extent and character and the distribution and nature of recorded archaeological finds in the locality and within the site. It is measured on the basis of High, Medium, Low and Insignificant.

10.7. At the time of writing there is no nationally agreed method of measuring the relative importance of archaeological monuments. Paragraph 8 of PPG16 draws a distinction between nationally important remains and those of lesser distinction. On this basis it is possible to distinguish between monuments of national, regional, district, local or negligible

importance.

Table 10.1 Importance of Archaeological Remains

National	Monuments that are scheduled and protected under the Ancient Monuments and Archaeological Areas Act (1979), those suitable for scheduling, or considered to be of national importance but not covered by the Secretary of State's criteria for scheduling.
Regional	Sites listed in the Sites and Monuments Record (SMR) or other sources, which are of a reasonably well-defined extent, nature and date and significant examples in the regional/county context.
District	Sites listed in the Sites and Monuments Record (SMR) or other sources, which are of less well-defined extent, nature and date, and significant examples in the district context.
Local	Sites listed in the SMR or other sources, which are of low potential or minor importance.
Negligible	Areas in which investigative techniques have produced negative or minimal evidence of antiquity, or where large-scale destruction of deposits has taken place, for example by mineral extraction.

10.8. Development has the potential to cause direct or indirect impacts on below-ground archaeology. Direct impacts on below-ground archaeology result from disturbances to the ground surface, causing the destruction or disturbance of archaeological remains. Indirect impacts on below-ground archaeology can result for example from changes in the water table, which can, depending on soil conditions, affect the preservation of organic archaeological deposits *in situ.*

Table 10.2 Impact on Archaeological Remains

High	Total or substantial (51-100%) destruction of archaeological remains
Medium	Significant (11-50%) destruction of archaeological remains
Low	Minor (up to 10%) destruction of archaeological remains

10.9. The significance of impacts on below-ground archaeology is a function of the relative importance of the archaeological remains and the magnitude of the impact.

Table 10.3 Significance of Impact on Archaeological Remains

Substantial	High or medium impact (11-100% destruction) on archaeology of national or regional importance.
Moderate	Low impact (up to 10% destruction) on archaeology of national or regional importance; or high or medium impact (11-100% destruction) on archaeology of district importance.
Slight	Low impact (up to 10% destruction) on archaeology of district importance; or high, medium or low impact (up to 100% destruction) on archaeology of local importance.

Baseline Conditions

10.10. References to archaeological periods are made throughout this chapter. The dates for these periods are as follows:

Table 10.4 Archaeological and Historical Timescales

Prehistoric			
Palaeolithic	450,000 BC	-	12,000 BC
Mesolithic	12,000 BC	-	4,000 BC
Neolithic	4,000 BC	-	1,800 BC
Bronze Age	1,800 BC	-	600 BC
Iron Age	600 BC	-	AD 43
Historic			
Roman	AD 43	-	AD 410
Saxon/Early Medieval	AD410	-	AD 1066
Medieval	AD1066	-	AD 1485
Post-Medieval	AD 1485	-	AD 1700
Industrial	AD 1700	-	AD 1900
Modern	AD 1900	-	present

Designations

10.11. There are no Scheduled Ancient Monuments in the study area. The Local Plan identifies the likely extent of Roman settlement in Buxton as an Area of Archaeological Interest. The northern boundary of the AAI lies to the south of the site boundary. The part of the AAI which lies within the study area is depicted on Figure 10.1 (at **Appendix 10.2)**, along with locations of individual SMR records referred to within the following sections.

Prehistoric and Roman

10.12. There is plentiful evidence of prehistoric activity in the general area, but there are only two records of dated prehistoric remains in the study area. These comprise Neolithic flintwork and a likely Bronze Age inhumation from south and south-east of the site (SMR 2801, 31159). Further undated lithics are recorded from the study area, which may be prehistoric in origin. These comprise flint flakes, scatters and stone axes, found at a number of locations south of the site (SMR 2802-3, 2807, 2847-8). If these records were to prove to be prehistoric in origin, then together, they would evidence a general level of prehistoric activity in the vicinity.

10.13. Buxton developed as a spa known as *Aquae Arnemetiae* during the Roman period. Remains related to the spa have been found close to the site of St Anne's Well, approximately 250m south-west of the site (SMR 2834, 2836), and during the construction of The Crescent (SMR 2837). In 1787 the site of a possible temple was found during excavations at The Terrace (SMR 2833). Although subsequent development has effectively sealed much of the area from further investigation, traces of a paved road were found near the well in 1949 (SMR 2849), and a massive coin hoard was found in the vicinity in 1975 (SMR 2869).

10.14. The remains of the Roman town, as evidenced by the location of recorded finds, lie generally to the east and south of St Anne's Well, and are designated as an Area of Archaeological Interest, as noted above. Evidence of settlement is recorded from south and south-east of the site (SMR 2832, 2838, 31101), and the existence of a Roman fort is postulated, possibly sited in the Silverlands area approximately 450m south-east of the site (SMR 2840).

Saxon, Medieval and Post-Medieval

10.15. There is no indication that the small Roman town survived beyond the end of the Roman period. There are no records of Saxon remains in the vicinity, nor is Buxton recorded in the *Domesday Book* of 1086. The earliest documentary reference to Buxton dates from 1108, and in 1366 it was referred to as *Kyngesbucstones*, because it formed part of the Royal Forest of the Peak. There are no records of medieval remains in the vicinity, and since the site lay well outside the estimated extent of the medieval settlement, it would seem likely that it formed meadow or wood pasture during the medieval period.

10.16. By the late medieval period, St Anne's Well was again in use, and a small chapel had been built adjoining it, although the chapel was destroyed during the Dissolution. By the last quarter of the sixteenth century Buxton had passed into the possession of the sixth Earl of Shrewsbury, and in 1572-3 he built New Hall near the well, to provide lodgings for persons of rank taking the waters (SMR 2875). Although Buxton continued to develop as a spa throughout the seventeenth century, the Hearth Tax returns of 1670 demonstrate that it remained a very small settlement. 19 householders were assessed for the Tax, indicating a population of about 80 people. An element of the well's religious significance appears to have survived the Dissolution, for during the 1975 construction works in which the Roman coin hoard referred to in section 10.13 above was found, a large number of seventeenth century bronze pins, a gold ring of 1704, bronze bracelets and a Charles I gold crown were found nearby (SMR 2870).

Industrial and Modern

10.17. Bath became fashionable during the 1760s and 1770s, and its success may have inspired William Cavendish, the fifth Duke of Devonshire, to invest in building at Buxton, where he was the major landowner. The centrepiece of this new resort was The Crescent of 1780-8 by John Carr (SMR 31116), attached to the spa baths and Old Hall, which had been extensively remodelled in 1672. Further north-west stood the Great Stables, also by Carr (SMR 31128). Spring Gardens is shown on a map of 1791, forming the inner length of the road to Sheffield, which had been turnpiked in 1758 to improve the route between Sheffield and Manchester (SMR 99019). A number of isolated buildings existed along the frontage of Spring Gardens, but most or all of the site appears to have remained undeveloped at this date.

10.18. Spring Gardens began to develop from the early nineteenth century as Buxton's principal retail street, and the First Edition Ordnance Survey 1˝ map of 1839 shows further building along its north side, although the majority of the site remained in agricultural use.

10.19. Spring Gardens developed further during the next ten years, and the Tithe Award of 1848 describes a mixture of dwellings, shops and hotels. Between 1849 and 1851 a brickworks was established behind the western end of Spring Gardens. The Midland Railway opened in 1863, with a station and sidings which lay partially within the extreme north-western corner of the site, and the London and North West Railway opened in 1864, on a site immediately to the north (SMR 2885).

10.20. The arrival of the railways boosted Buxton's development, and necessitated the construction of a gas works, part of the site of which lay in the eastern portion of the site. The 1:2500 Ordnance Survey map of 1879 demonstrates that by this date a further gas holder had been constructed. The map depicts railway lines and a portion of the Midland station occupying the northern part of the site, which had been terraced to accommodate them. The Royal Hotel had been built in the south-western part of the site, with stables and ornamental gardens behind. The southern and south-eastern portion of the site was occupied by open land, gardens, small dwellings or commercial premises and a timber yard.

10.21. By 1890 the eastern portion of the site had become a laundry, as shown on the 1:2500 Ordnance Survey map of that year. The Royal Hotel had been extended and further terracing is visible in the area previously shown as an ornamental garden, which had been amalgamated with part of the open land adjoining, perhaps to form allotments. Small buildings, possibly sheds and/or workshops, are depicted in the southern part of the site, and an industrial building occupied a piece of land in the south-east. By this date, Wye Street had been built, giving improved access to the rear of Spring Gardens.

10.22. The 1922 Ordnance Survey 1:1250 map shows further development within the site, accessed mainly via Wye Street. By this date a bridge had been constructed within the site to cross the river and give access from Wye Street to the low lying land on the river's northern bank. Further development is shown in this area, some of which took the form of glass houses, suggesting that the land may have been used as allotments and/or market gardens.

10.23. The railways closed in 1967 (SMR 2885). By this date, an engineering works had replaced the laundry at the eastern end of the site, also occupying buildings on the southern bank of the river, to which it was linked by footbridges. Buildings had been constructed in the western part of the site, where a short section of the River Wye had been culverted, and the central portion had been made into car parks, accessed via Station Approach and Wye Street.

10.24. Major redevelopment took place in the following decade, as depicted on the Ordnance Survey 1:1250 map of 1977. By this date, Station Road and New Wye Street had been constructed, and the Spring Gardens shopping centre had been built. The majority of the shopping centre lies to the south of the site, although a portion of it occupies the site's south-western portion, along with an electricity sub-station. The remainder of the site has been laid down to service access and car parking, which necessitated further terracing in its northern and eastern portions. The remainder of the River Wye had been culverted by this date, except for a short length running through the eastern part of the site.

Archaeological Potential

10.25. A relatively large number of dated archaeological finds are recorded in the study area, most of which relate to the Roman and Industrial periods, reflecting Buxton's two major periods of prominence.

10.26. Records of Roman remains are relatively abundant within the study area, although they tend to be concentrated to the south of the site, in the Area of Archaeological Interest designated by High Peak Borough Council, which indicates the likely extent of Roman settlement. The site lies outside the AAI and is therefore considered to lie outside the area of concentrated Roman activity. Its potential for Roman remains is therefore considered to be low.

10.27. In terms of remains from the Industrial period, the site appears to have remained largely undeveloped until the construction of the Midland Railway, which opened in 1863, occupying the north-eastern part of the site. A gas works followed in the early 1870s, and a hotel was in existence by 1879. However, the majority of the site remained open until well after the end of the Industrial period. Its potential for Industrial remains is therefore considered to be low.

10.28. The site is considered to have a low potential for remains of the Prehistoric, Saxon, Medieval and Post-Medieval periods.

Identification and Evaluation of Key Impacts

10.29. The distribution of recorded remains within the study area indicates that the potential for locating evidence of archaeological remains within the site is low. Given the nature of the recorded remains in the vicinity, and the 'brownfield' character of the site, where previous development and terracing are likely to have disturbed or destroyed any archaeological remains which may have existed, it is considered that any remains that it contains are likely to be only of local or district importance.

Earthworks Phase

10.30. The direct effect of the earthworks phase of construction will be the total or substantial destruction of any archaeological remains which the site may contain.

10.31. If any archaeological remains which the site may contain are of district importance, then it is anticipated that, without mitigation, the impact of the earthworks phase will be moderately adverse.

10.32. If any archaeological remains which the site may contain are of local importance, then it is anticipated that, without mitigation, the impact of the earthworks phase will be slightly adverse.

10.33. Given the nature of the archaeology and soils in the vicinity, it is not considered that the proposed development will have any significant indirect effects on any below-ground archaeology that the site may contain.

Construction Phase

10.34. Any archaeological remains which the site may contain are likely to be destroyed during the earthworks phase of development. Therefore no further impacts will arise during the construction phase. It is also intended to amend off-site signage as part of the construction phase of the development, but it is not anticipated that this work will impact on the below-ground archaeological resource.

Operational Phase

10.35. Any archaeological remains which the site may contain are likely to be destroyed during the earthworks phase of development. Therefore no further impacts will arise during the operational phase.

Mitigation Measures and Evaluation of Key Residual Impacts

10.36. The Desk- Based Archaeological Assessment on which this chapter is based recommended that since the site has a low potential for below-ground archaeological remains, no further work should be required in terms of archaeological issues. However, as noted in section above, the Development Control Archaeologist for High Peak Borough Council advised that a form of conditioned mitigation would be appropriate.

10.37. It is therefore considered that it would be appropriate to implement a watching brief to be carried out during the earthworks phase of development, followed by the archaeological investigation and recording of any remains, and their subsequent analysis, reporting and archiving. Preservation by record, in line with the above, could be secured by a planning condition in line with PPG16 paragraph 30 and Policy BC10 of the High Peak Local Plan.

10.38. It is concluded that without mitigation, the impact of the development on any archaeological remains that exist within the site that are of district importance, would be moderately adverse. With mitigation in place, in the form of preservation by record, it is considered that the impact will reduce to slight.

10.39. It is also concluded that without mitigation, the impact of the development on any archaeological remains that exist within the site that are of local importance, would be slightly adverse. With mitigation in place, in the form of preservation by record, it is considered that the impact will remain slight.

Summary Findings

10.40. This chapter has assessed the effects of the proposed development on below-ground archaeology, and is based on a Desk-Based Archaeological Assessment carried out in 2007, and consultation with the Development Control Archaeologist for the Council.

10.41. Recorded evidence indicates that the site has a low potential for archaeological remains. It is considered that any remains that it contains are likely to be of local or district importance, and that with mitigation in place the significance of the impact of their removal is likely to be slight. Therefore it is considered that below-ground archaeology is unlikely to prove a significant constraint to development.

10.42. A programme of archaeological investigation will be proposed in mitigation for the likely impact, in the form of a watching brief to be carried out during the earthworks phase of development. This will be agreed in consultation with the Development Control Archaeologist for High Peak Borough Council, in line with PPG16 paragraph 30 and Policy BC10 of the High Peak Local Plan.

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Appendices

10.1 Desk-Based Archaeological Assessment, 2007

10.2 Figure 10.1: Recorded Archaeology within the Study Area

11. Sustainability

Introduction

11.1. This chapter refers to a Sustainability Appraisal (SA) of the redevelopment scheme, attached at **Appendix 11.1** of this ES, and Sustainability Review produced by WSP (**Appendix 11.2**).

11.2. The purpose of the Sustainability Appraisal is to assess the extent to which the proposed development promotes sustainable development as set out in plans and programmes at international, national, regional and local levels, and demonstrates good practice in sustainable design. The promotion of sustainability initiatives will mitigate the scheme's environmental impact.

11.3. This chapter describes the purpose of the Sustainability Appraisal, the methodology adopted, and the sustainability policy context within which the development is proposed. This is followed by an assessment of the proposed development against the BRE's Sustainability Checklist for Developments. This sustainability checklist was developed by BRE taking into consideration the main sustainability drivers and good practice at international and national levels.

Policy Context

11.4. Sustainability considerations have been incorporated into legislation and policies at international, national, regional and local levels, and are increasingly being taken into account in decisions relating to the permitting of development proposals. Planning Policy Statement (PPS) 1: 'Creating Sustainable Communities' sets out the Government's policy on sustainable development the objectives of which is set out in Chapter 3. Chapter 3 also sets out the other relevant national, regional and local policies relating to sustainability. There are also a number of other international and national policies of specific relevance which are briefly outlined below.

International Policy

Agenda 21, 1992, United Nations

11.5. Agenda 21 consists of an Action Plan for the 21st Century which emerged from the Rio Earth Summit that committed the Government to work towards sustainable development in partnership with local authorities, businesses, the voluntary sector and local communities.

Convention on Biodiversity, 1992

11.6. This Convention sets out commitments for maintaining the world' ecological resources throughout the process of economic development through three main goals: the conservation of biological diversity; the sustainable use of its components; and the fair and equitable sharing of the benefits from the use of genetic resources.

Kyoto Protocol, 1997

11.7. The Kyoto Protocol sets world targets for the reduction of emissions; the UK's target is to cut its green house gas emissions by 12.5% below 1990 levels by 2008-2012.

National Policy

Securing the Future-The UK Government Sustainable Development Strategy, 2005, Department for the Environment, Food and Rural Affairs (DEFRA)

11.8. The Strategy takes account of advances since the 1999 UK Sustainable Development Strategy 'A Better Quality of Life', both domestically and internationally; the changed structure of government in the UK with devolution to Scotland, Wales and Northern Ireland; greater emphasis on delivery at regional level and the new relationship between government and local authorities. It details the priorities and principles that are to be adopted to move further towards the goal of sustainable development.

11.9. The key sustainable development objectives for the UK set out in this strategy are:

- Living within Environmental Limits;
- Ensuring a Strong Healthy and Just Society;
- Achieving a Sustainable Economy;
- Promoting Good Governance; and
- Using Sound Science Responsibly.

Draft Planning Policy Statement (PPS): Planning and Climate Change; Supplement to Planning Policy Statement 1

11.10. The White Paper 'Our Energy Future', which sets down the target of reducing carbon emissions by 60% by 2050 (compared to the 1990 Kyoto baseline) and the Draft 'Planning and Climate Change' supplement to PPS 1 published December 2007 is evidence of changing Government policy.

11.11. The draft Statement describes how spatial planning (regional and local) can help shape places with lower carbon emissions and ensure these are fit for the climate they are likely to experience in the future. In particular it requires that the location, siting and design of new development can all contribute to lowering carbon emissions.

11.12. It is recommended that all LPAs prepare and deliver spatial strategies which:

- *"Make a full contribution to the Government's Climate Change Programme and energy policies;*
- *Enabling the provision of new homes, jobs, services and infrastructure and shaping the places where people live and work, secure the highest viable standards of resource and energy efficiency and reduction in carbon emissions;*
- *Deliver patterns of urban growth that help secure the fullest possible use of sustainable transport for moving freight, public transport, cycling and walking; and, overall, reduce the need to travel, especially by car;*
- *Secure new development and shape places resilient to the effects of climate change in ways consistent with social cohesion and inclusion;*
- *Sustain biodiversity, and in doing so recognize that the distribution of habitats and species will be affected by climate change;*

- *Reflect the development needs and interests of communities and enable them to contribute effectively to tackling climate change; and*

- *Respond to the concerns of business and encourage competitiveness and technological innovation".*

Community Strategy – Local Government Act, 2000

11.13. The Act places a duty on Local Authorities to produce a community strategy promoting the social, economic and environmental well-being of their areas and contributing to the achievement of sustainable development in the UK.

UK Sustainable Development Indicators, 2000

11.14. There are 68 national sustainable development indicators which support the new UK Government Sustainable Development Strategy, Securing the Future. Including 20 UK Framework Indicators, which are shared by the UK Government and the devolved administrations in Scotland, Wales and Northern Ireland.

11.15. Regional versions of the Government's indicators of sustainable development were published on 13 December 2005 to help provide a perspective of sustainable development in each region. The indicators highlight issues within the priority areas of Sustainable Consumption and Production, Natural Resources, and Sustainable Communities. Other indicators provide useful contextual information.

Review of Sustainable Construction (2006)

11.16. This document outlines the following targets for sustainable construction to 2015 and beyond:

Issue	Government Target
Climate Change/ energy	Publicly funded houses to be CSH level 3 CO2 emissions to be 20% below 1990 levels by 2010
Waste	Publicly funded houses to be CSH level 3 Greater recycling up to 100% in a viable economic climate
Materials	Publicly funded house to be CSH level 3
Water	Publicly funded house to be CSH level 3
Flood risk	Peak run-off rates and annual volumes of run-off no worse than the existing conditions for the site
Water Quality	Surface water is managed on sites using SuDS approach to drainage
Safety	Reduce the incidence rate of fatalities and major injuries by 10%, reduce the incidence rate of cases of work-related ill health by 20% and reduce the number of working days lost per worker from work-related injury and ill health by 30%
Equity/respect for people	Respect for people adopted by the industry as a core business value

11.17. The Sustainability Appraisal produced as part of this Environmental Statement assesses the sustainability effects of the specific development proposal on the Wye Street car park site, which comprises one of the "Areas of Potential Change" identified in the SPD.

Methodology

Establishing the Sustainability Criteria

11.18. The Sustainability Appraisal has been undertaken primarily against the BRE's Sustainability Checklist for Developments which provides specific sustainability criteria, in addition to relevant policies listed in the previous section.

Assessment of the Proposals

11.19. The proposals have been assessed in close collaboration with the design team in order to facilitate the assessment and the enhancement of the proposals.

Preferred Options and Mitigation

11.20. In the course of the Sustainability Appraisal, strengths and weaknesses in relation to the sustainability performance of the proposals were identified, which enabled practical and feasible options for enhancing the sustainability profile of the proposed development to be identified. Moreover, it also has enabled the identification of sustainability aspects that will need to be considered further during detailed design, construction and operation.

Results

Sustainability Profile of the Proposals

11.21. This section provides a summary of the main findings of the Sustainability Appraisal, which are presented in full at **Appendix 11.1.** The text is presented in key headings, which relate to the main sustainability topics outlined in the BRE's Checklist for Sustainable Developments.

Land Use, Urban Form and Design

Site Criteria

11.22. The planning and design teams have undertaken extensive liaison with the Council with a view to clarifying the requirement of the Development Plan and other strategic planning guidance, most notably the Buxton Station Road Supplementary Planning Document (adopted August 2007). As demonstrated in the application supporting planning statement the proposed scheme is fully compliant with these policy requirements.

11.23. The redevelopment of the site meets the criteria of Policy TC15 in the Local Plan, and the aspirations of the Buxton Station Road SPD, which promote regeneration of a site which is currently underutilised and does not meet its full development potential. The policy aspirations for the site recognise that the site is one of the most sustainable locations in Buxton for retail and town centre use development, being located within the town centre and proximate to public transport nodes. Though the site lies outside the Conservation Area, the scheme has had regard for the Conservation Area's character as addressed in the Visual Impact and Built Heritage Chapter of this Environmental Statement.

11.24. The site is currently utilised as the town centre's main surface level car park (the site also comprises the existing Spring Gardens Shopping Centre which will remain). The site is therefore a brownfield site consisting solely of hardstanding, with the exception of a small section of the River Wye, which is otherwise culverted throughout the site. The proposed development will secure the regeneration of this brownfield site in accordance with the

identification of the area as a regeneration area under Policy TC15 of the Buxton Station Road SPD.

11.25. The proposed development will replace and increase the parking provision currently provided by the site, along with other town centre uses, in a form which will significantly enhance the aesthetic quality of the site which does not currently meet its potential given its strategic location in Buxton. The development of the site will also improve connectivity from the train station and Station Road into Buxton Town Centre.

Reusing Land

11.26. The development site is previously developed land, albeit currently used as a surface level car parking rather than any built form. The car park was formed as part of the development of the Spring Gardens Shopping Centre. Given the prevailing ground conditions it was agreed during the scoping of this ES that geo-technical issues are unlikely to result in any significant environmental effects and that consequently this will not need to be considered in the ES. Similarly whilst waste production will arise from the development, this was also agreed to be unlikely to cause significant adverse effects and therefore has not been considered in this ES other than through the Sustainability Assessment.

11.27. Provision will be made in the scheme for the collection of recyclable materials and the appropriate disposal of non recyclable materials. During the construction phase the main contractor will produce a Waste Management Plan to reduce waste and promote recycling of materials. Measures required for the elimination of waste will not therefore result in any negative environmental impacts.

11.28. Given the site is not currently meeting its full potential as a strategic gateway site, provisions for the future good use of space have been essential to the design and development of all land and spaces within the site area. The design of the development has had regard to the potential impacts of each type of land use when considering where each should be located within the site. For instance the retail units front on to a new area of landscaping and public space focussed around the River Wye. The proposed mix of uses is appropriate given the location and context of the site.

Forms of Development

11.29. The design team have sought to develop a design which is sympathetic to the historic nature of Buxton and the neighbouring Conservation Area. A Design and Access Statement has been prepared setting out the principles behind the design (**Appendix 2.5**).

11.30. The form of the development has reference to the existing townscape and the gradient of the land, rising from five storeys at the roundabout junction of Station Road and New Wye Street to single storey at ground floor at the entrance to the Sainsbury's unit further west along Station Road. This entrance to the Sainsbury's unit will provide a link from Station Road through to the existing Spring Gardens Shopping Centre.

11.31. The design and layout of the redevelopment have been influenced by current features surrounding the site, including the railway arch to the north of Station Road and the existing built form of the town.

11.32. A key consideration of the design of the proposed development has been the creation of an active frontage onto Station Road and the creation of a physical link between the station and Station Road and the existing shopping centre and the rest of the town centre. This physical linkage will promote a better integration of the site with its surrounding area.

11.33. A visual assessment, including assessment of the impact on built heritage has been undertaken for the site (Chapter 5). The proposals improve the physical permeability of the site through the provision of an active frontage onto Station Road and links through to Spring Gardens Shopping Centre, a link through from Station Road through to the reconfigured

retail units and Wye Street. The development will not only provide an attractive frontage on to Station Road, but will also encourage pedestrian footfall on Station Approach increasing permeability from Station Road through to the historic core.

Open Space / Landscaping

11.34. Landscaping areas have been incorporated into the design of the scheme to enhance the limited existing natural value of the site. This includes the creation of a new area of public space around the open area of the River Wye, which is currently considered to be a missed opportunity and is underutilised.

11.35. Paving surfaces will be smooth, even and well-laid to avoid tripping. Seating will be provided at appropriate intervals around the site and in the new public space north of Wye Street. Formal seating will have arm and back rests and be located so as not to obstruct routes. Street trees and shrub planting will be introduced to satisfy a number of requirements including adding structure and character to the existing road corridor along Station Road and providing focus and softening to resting places within the Wye Street area. Adequate lighting will be provided in order that everyone including people with disabilities can use the area easily and safely

Density

11.36. The development proposals accord with general sustainability principles to increase density of development in sustainable locations close to public transport modes and town centre locations.

11.37. The proposals seek to make the best use of this site by maintaining and increasing the existing car parking provision whilst also providing further town centre facilities for which there is a proven need, whilst ensuring that sustainable design principles are adopted and the scale and character of the area are not damaged.

Mix of Uses

11.38. The food retail element will provide a complementary food retail provision to the existing provision in Buxton town centre, which will promote trade Buxton town centre, generating sustainable patterns of travel. The store will also increase footfall on Station Road and Station Approach and provide a link from Station to existing shops in the Spring Gardens Shopping Centre and Spring Gardens. The Retail Impact Assessment which accompanies the planning application addresses this issue in more detail.

11.39. The hotel is another complimentary town centre use, satisfying a gap in the Buxton hotel market and providing a frontage and strong visual feature on the junction of Station Road and New Wye Street.

11.40. The proposed mix of uses will encourage people to work and shop in close proximity to where they live therefore reducing the need to travel. For example the foodstore will provide circa 250 jobs which will be sourced within Buxton. Furthermore the provision of new retail facilities in this location proximate to the town centre will trade in the town centre, therefore promoting more sustainable patterns of travel.

11.41. A Socio-economic Impact Assessment has been carried out to establish the potential impact of the development on the town and wider population (refer to Chapter 4).

Aesthetic Aspects

11.42. The proposed development as outlined above will be of high quality in terms of architectural design and landscaping seeking to respect the nature and quality of the built environment.

11.43. The visual impacts associated with the development are predicted as being generally

beneficial as it will introduce elements of greater visual quality and interest into the view, given the poor visual quality of the site. The zone of visual influence is largely confined to the immediate surroundings of the development area.

11.44. The proposals would result in significant changes to the visual components within the development area. This would involve the replacement of the open, unstructured surface level car parks with significant buildings that will increase the density of the urban grain of the area and provide a new defined built edge to the centre.

11.45. The greatest change will be in views in the immediate vicinity of the site. These views, in particular along Station Road will experience a dramatic change associated with the establishment of a positive edge to this important urban road corridor and with the creation of a more visually contained route, more appropriate to its town centre location. The architectural materials will ensure compatibility with the historic elements within the town centre, whilst the contemporary detailing will introduce distinctive new buildings to the locality. It will create a memorable visual threshold to the town centre. The use of a limited number of well placed trees in this urban landscape will further add to the quality of its visual character.

Transport

General Policy

11.46. Both the High Peak Borough Council (HPBC) Local Plan and Derbyshire County Council (DCC) Local Transport Plan (LTP) contain policies that promote development in sustainable locations with good access for those travelling by foot, cycle or public transport. The proposed development is fully consistent with these policies

11.47. The development is adjacent to Station Road which is both a local and strategic route. Station Road is bus route and bus stops are located adjacent to the Site. Station Road provides access (both car and non-car) to Buxton Rail Station.

11.48. Traffic surveys have been undertaken at a number of junctions near to the Site to establish existing PM and Saturday peak traffic demands. An interrogation of Census data has been undertaken to establish car ownership levels of residents within 5, 10 and 25 minute walk times of the Site.

Public Transport Provision

11.49. The proposed development is highly accessible for people walking, cycling and travelling by public transport. Buxton's train station is located opposite the site beyond Station Road, and a bus stop is located directly outside the proposed entrance to the foodstore on Station Road. The site is clearly within easy walking distance of the town centre.

11.50. As part of the development proposals, the bus stop on Station Road will be widened and improved and a taxi rank will be provided on Station Approach.

11.51. An audit has been undertaken of all of the existing bus stops within a 5 and 10 minute walk of the Site. There are 7 bus stops on highway immediately surrounding the Site (i.e. Station Road, The Quadrant, Terrace Road and Bridge Street). Most of these stops conform to the basic criteria set out by DCC in their Accessible Bus Stop Programme by offering lay-by, shelter with seating, lighting and timetable information and low floor access.

Parking

11.52. The proposed development will encourage the use of public transport and non vehicle transport. Car parking however also constitutes one of the main elements of the development proposal. The existing surface level car park provides 427 spaces for use by the customers of the Waitrose store and the Spring Garden Shopping Centre and also used

as a main town centre car park. These spaces will be replicated within the development scheme to provide in the order of 629 spaces located in the multi-storey car park and beneath the food store.

11.53. The multi-storey element has been designed to be shielded from external vision by the car park between two active uses, namely the hotel to the north fronting onto Station Road, and the non food retail units to the south fronting on to the new area of public open space. The remaining spaces will be accommodated below the Sainsbury's unit. Because of the topography of the site, by accommodating the Sainsbury's unit at ground floor from Station Road, this facilitates two levels of parking space beneath it i.e. in effectively what is the ground level of the site as it exists.

11.54. The development proposal involves the redevelopment of the existing Spring Gardens car park. The new multi-storey car park will be designed to a high standard and will include suitable provision for mobility impaired visitors and cyclists (including lockers). The car park will operate with a charging regime consistent with other car parks in Buxton.

11.55. Based on Local Authority car park standards, the proposed development could, in theory, provide almost 400 new spaces. However, this would increase off-road parking provision in Buxton by about 40%. This would be a significant increase and could bring about a marked change in travel behaviour in Buxton, i.e. more private car use with a consequent reduction in non-car travel. This would be contrary to policies in the HPBC Local Plan and DCC LTP. The proposed additional 202 spaces achieves an appropriate balance between providing sufficient spaces to meet development generated demand and not over-providing to an extent that encourages unnecessary car travel or acts as deterrent to non-car use.

11.56. Servicing is to be provided in two locations. The proposed foodstore is to be serviced using a dedicated loading bay accessed from Station Approach. The proposed non-food and hotel units are to be serviced from two new dedicated loading bays on New Wye Street..

Facilities for Pedestrians and Cyclists

11.57. The Site has excellent pedestrian permeability. The public highways surrounding the Site are Spring Gardens, Bridge Street, Station Road and Terrace Road. Spring Gardens is predominantly pedestrianised and all other roads have footway provision.

11.58. There are a total of 7 existing controlled crossing points (e.g. pelican or puffin) on highway surrounding the Site.

11.59. The Site lies close to the National Cycle Route No 68 (referred to as the Pennine Cycleway) and 37 cycle parking and lockers are to be provided in the proposed multi-storey car park.

Provision of Local Employment

11.60. The proposed development will provide a range of jobs which will be sourced locally via the local Job Centre. The expected increase of circa 320 through the retail and hotel, 20-40 office jobs plus circa 50 induced jobs will have a highly positive impact on the area as it will enhance employment opportunities for the local population. This includes a number of entry level jobs in areas where the Council have identified a particular shortfall in Buxton. There will also be the opportunity to enter into the Sainsbury's retail management training scheme for people with three A Levels or equivalent.

11.61. The 30 month construction period will provide a further circa 200 temporary jobs.

Proximity of Local Facilities

11.62. The site of the proposed development is located adjacent to Buxton town centre which offers a range of local amenities, including employment, shops, leisure facilities, tourist facilities. The site is, as detailed above, proximate to the public transport modes.

11.63. The proposals will provide additional retail units, a hotel and new public space facilities to complement the existing offer in the town centre.

Traffic management

11.64. Appropriate traffic management practices will be implemented to ensure the safety of pedestrians and users of the proposed development. The Transportation section of the Environmental Statement provides further detail on these matters.

Energy

On-site Renewable Energy Production

11.65. The Sustainability Review produced by WSP in support of the application (attached at **Appendix 11.2**) considers the challenge of on site renewables and comment on various alternative sources of on site renewable energy. The report makes the following observations:

Technology	Comment
Wind Turbines	The introduction of wind turbines has been considered – because of the altitude and relatively exposed nature of the site, mean wind speeds may well be high enough to justify useful output. However, because of the site's sensitive location, close to a number of grade I listed buildings, in the setting of various conservation areas and listed parks and gardens, from a planning perspective, it has been indicated by Officers that wind turbines would not be regarded as a satisfactory solution in this instance.
Photovoltaics	There are some opportunities to introduce a limited amount of PV at roof level. There are two considerations which impact on the viability of this technology in this instance; Firstly, the main food store building features a number of roof lights – the purpose of which is to allow the store to be naturally lit rather than relying on artificial light sources – and this limits the amount of space available for PV. Secondly, because the roof of the building can be seen in many longer views, in order to be acceptable from a "heritage" and "conservation" standpoint, the roof scape needs to be sensitively treated. Never the less, this option will be further explored during design development.
Ground-source heat pumps	The Buxton water aquifer lies in part directly beneath the site. This is identified by the Environment Agency as a "Source Protection Zone". In order to utilise this technology it would be necessary to introduce boreholes to serve the heat pumps. We understand that because of the risk of contamination of the aquifer, this is unacceptable to the environment agency in this location. Consequently, this is not a viable technology in this instance.
Water-source heat pumps	As the River Wye flows through the site, one option might

	be to either abstract or reject heat from, or to, the river. However, the river provides habitat for a number of protected species, and the volume of water is during much of the year not substantial. Consequently, any significant volume of abstraction or discharge would potentially have adverse effects on the ecology. For these reasons, water-source heat pumps are not considered viable in this instance.
"Biomass"	This technology is perhaps more realistically described as "carbon-neutral" rather than "renewable", but never the less, it can play a useful part in addressing the reduction in non-renewable fuel-sources. Because of the nature of development and the likely heating, hot water and electricity loads, it is possible that a biomass facility could make a positive contribution in this case, and consequently this is the technology which, along with photovoltaics is being most actively marketed in this instance.

11.66. Because of the particular difficulties on the site with regard to on site renewable energy production, WSP recommend an "energy reduction" based approach.

11.67. WSP conclude that combined heat and power (CHP) offer a potentially attractive solution, combined with very high standards of thermal performance for the fabric of the buildings and specification of components to minimise energy consumption.

Impact of Individual Buildings

Meeting a Specified BREEAM Rating

11.68. North light glazing on the foodstore will reduce solar glare and consequently the cooling load. BREEAM ranking "very good" is the set objective of the scheme and will be kept under review to ensure that carbon reduction/energy efficiency remains a key priority.

Natural Resources

Use of Locally Reclaimed/Green Materials

11.69. The contractor will be asked to consider opportunities for the use of locally-sourced materials.

Sustainable Drainage

11.70. A Flood Risk Assessment and drainage strategy has been undertaken which is documented in Chapter 9.

11.71. The proposed landscaping will also retain rainwater and allow infiltration, hence reducing surface water run-off from the site which is currently purely hardstanding.

11.72. A proportion of the floodplain volume lost as a result of the development will be mitigated by the provision of the compensation area to the south east of the site and the residual impact on the floodplain is considered not significant.

11.73. A management regime will be implemented on the completed site to regularly check the River Wye is clear of significant debris and that the open channel and culvert within the site are in a satisfactory condition. This will reduce the impact of flood risk from blockages on the site compared to the baseline situation and will result in a small positive impact.

11.74. The potential impacts on groundwater will be mitigated by the implementation of a best practice construction methodology and on completion the site will be covered by impermeable surfaces (as at present) and potential pathways to groundwater opened as part of the construction process will be sealed. Following mitigation this impact is considered not significant.

Ecology

Conservation

11.75. A Phase 1 habitat survey has been conducted which demonstrates that the site offers little natural habitat. The assessment did however reveal records of non indigenous crayfish in the local river catchments and a specialist crayfish survey was undertaken to determine whether the protected native (white clawed) crayfish was present in the River Wye**.** The report demonstrates that there are no native crayfish present in that section of the River Wye.

Enhancement of Existing Site

11.76. A landscaping scheme has been designed as part of the development which will include the introduction of street trees and planting, footpaths and the creation of a new area of public space around the open area of the River Wye.

11.77. The trees to be provided will contribute to the ecological value of the site**.** A greater number of trees will be planted in considered locations across the development thereby maximising the visual amenity benefit.

11.78. Species have been selected to suit the nature of the site including Peak District winters & town centre micro-climate. Native deciduous, evergreen and their closest more ornamental cultivars have been selected.

Community

Community Involvement and Identity

11.79. A programme of community involvement has been implemented as part of the pre-application process.

11.80. The proposed development will provide benefits for the existing community of Buxton, providing enhanced consumer choice through new retail facilities, and circa 320 new retail/leisure jobs and 20-40 office jobs for local people as well as provide a significant environmental improvement to this strategic site in addition to the jobs created in the retail units and hotel once constructed and operational, the number of construction jobs expected to be created will be approximately 200**.**

11.81. It is understood through liaison with the local Job Centre that there are currently approximately 500 people actively seeking employment in Buxton. This development will go some way to creating these jobs. It is understood from the Council that the particular deficiency lies within the entry level job sector, which again this development will provide a number of opportunities.

11.82. The development will also provide a new area of public space making better use of the opportunity to enclose the River Wye. The development will also improve pedestrian permeability through the site and provide a direct link from grade level on Station Road through the Sainsbury's store to the existing Spring Gardens Shopping Centre, or alternatively through a separate external route from Station Road through to the new area of public space.

Business

Enhanced Business Opportunities

11.83. It is anticipated that the new retail facilities will draw back retail expenditure which is currently being lost from the town centre to out of centre facilities. It is anticipated that this trend, alongside an increase in pedestrian footfall created by the improved permeability and linkages with the train station, will have a positive impact on surrounding retail uses.

Employment and Training

11.84. As mentioned above, the number of jobs expected to be created will be approximately 320 (retail/hotel) plus 20-40 office jobs during the construction phase and 200 jobs once the development is operational. Both the Sainsbury's store and the hotel will provide their in-house training schemes.

Conclusions

11.85. The development has been appraised against sustainability principles and objectives contained within National, Regional, local policies and the BRE's Checklist for Sustainable Development. From this exercise, the development will accord with a range of sustainability principles, including:

- The proposed development involves the redevelopment of a brownfield site of low ecological value. The ecological value of the site will be enhanced through the provision of landscape features within the development, guided by a landscape strategy.

- The proposed development will provide town centre facilities (retail, hotel and town centre car park) in highly accessible location within the existing town centre. The redevelopment of this site meets national sustainable development principles whilst meeting regional and local regeneration objectives.

- The development is of a scale, density and design which is appropriate and sensitive to the existing town centre.

- It is anticipated that 200 construction jobs will be created, of which the majority of employees will be from the local area. Approximately 340-360 direct jobs will be created at the operational phase of the development.

- The development proposals have been influenced by the cultural heritage of the site and surroundings. The design has been developed to reflect the historic context of the area, which have regard to the built heritage of the surrounding area.

- The proposed development is located in close proximity of public transport links and local amenities, facilities and services. In addition, pedestrian routes throughout the site will be developed and storage facilities for cycles will be provided with a view to reduce the need for vehicle travel and promote the adoption of more sustainable transport modes.

- The developer will aim to achieve a "very good" BREEAM rating.

- The development will adopt an "energy reduction" based approach combining CHP with high standards of material performance to minimise energy consumption.

- The development will aim to achieve a BREEAM rating of 'very good' or better.

- The contractor will be asked to consider opportunities for the use of locally-sourced materials.

11.86. Overall the scheme will contribute positively to the sustainability objectives set out in relevant policy documents.

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Appendices

11.1 Sustainability Appraisal

11.2 Sustainability Review (WSP)

12. Impact Interactions

Introduction

12.1. This chapter reviews the effects of the development on the key receptors and considers the cumulative effects of the various potential impacts and any missing mitigation measures on those receptors.

12.2. The site lies at the heart of the Buxton Central Regeneration Area as identified in the Local Plan and is covered by the Buxton Station Road Supplementary Planning Document. It represents one of, if not the, largest brownfield regeneration opportunities within Buxton town centre. It is currently occupied by a surface level car park which currently makes no positive contribution to the local environment and in fact has a negative impact. It is in this context that the following impact interactions are considered.

12.3. The key receptors in relation to the development include:

- The local community;
- Users of the development;
- Users of the local highway network;
- Visitors to Buxton.

12.4. A summary of the impact interactions in relation to each of these receptors is set out below.

Local Community

12.5. The vast majority of the built up area of Buxton is located within a 25 minute walk isochrone of the site. Though there are few residential dwellings in the immediate proximity of the town centre site given the topography of the area there are a number of residential areas from which the site can be seen.

12.6. The site is also in a visually prominent location on Station Road and clearly visible from the station. In addition to being users of the development, the local community are a separate key receptor given the prominence of the site's location to other public areas in the town centre and within the setting of the wider residential areas.

12.7. The baseline conditions for local residents in view of the site either from residential areas or from the surrounding road and rail network, are characterised by poor visual amenity associated with the surface level car park use of the site and unattractive rear elevation of the existing Spring Garden Shopping Centre. As demonstrated in the Visual Impact Assessment the impacts of the development in terms of visual amenity of the local community are considered to be largely positive. The removal of the view of rear elevation of the Spring Garden Shopping Garden Shopping Centre and replacement of the surface level car park with new high quality built form, will in general have a positive visual effect.

12.8. The development of the scheme has addressed the integration of the overall site with its surroundings and incorporates measures intended to minimise visual intrusion on sensitive receptors including the setting of conservation areas, listed buildings, and The Slopes. This is achieved primarily in the careful consideration of the uses, heights, massing, architectural detailing, and materials of the proposed buildings within the development area.

12.9. The enhanced public realm works, particularly around the open area of the River Wye, but

also the general physical improvement will have a beneficial impact on the local community visiting the site.

12.10. Furthermore, through carefully planned access to the site, vehicular movements will be managed so that the proposed development does not have any negative impact on the community's usage of Station Road and the surrounding road network.

12.11. The local community will benefit from positive economic effects in terms of new employment opportunities on the site, enhanced consumer choice for additional retail and services and improved town centre car parking all of which will be easily accessible to both the immediate amenity and the wider amenity of Buxton.

12.12. The impacts on local residents are therefore positive with no significant adverse impacts predicted from any part of the development. The only limited short term effects in terms of visual impact are anticipated during the construction process after which the scheme will have a largely positive effect.

12.13. The development will bring into use a site which is not currently fulfilling its full potential by providing facilities for which there is a demonstrative need in a sustainable location whilst maintaining and enhancing the existing car parking provision, reducing the requirement for greenfield land releases elsewhere within the town beyond.

12.14. The development will create in the region of 340-360 direct jobs, the majority of which will be sourced locally, and circa 50 induced jobs. In addition circa 200 jobs will be created during the course of the 30 month construction period.

Users of the Development

12.15. The development will provide facilities for both residents of Buxton and a wider catchment. In particular the retail development will serve local residents and visitors to Buxton who will also be served by the new hotel facilities.

12.16. Buxton is a focus for tourist activities within the Borough and the scheme will provide positive benefits for the tourist industry by providing a mid range hotel facility for which there is an identified niche in the market.

12.17. The scheme will provide new retail facilities to supplement and enhance the existing retail function of the town centre in a sustainable town centre location. It will provide a key convenience retail facility for which there is a demonstrable need, serving the needs of the local community.

Users of the Transportation Network

12.18. The baseline conditions and potential impact in relation to the local transportation network are summarised in the ES at Chapter 6 and it is demonstrated that any potential advance impact on the highways can be mitigated through various of good practice measures implemented at the construction stage, including the local sourcing of materials and labour to reduce the distance travelled by construction traffic, the controlled routing of heavy vehicles during construction, restricted speed limits in addition to the implementation of a series of new and improved traffic signage measures throughout the town centre and the implementation of a travel plan for the retail and hotel uses at operational phase. These will result in benefits for all users of the local transportation network not just those of the development.

12.19. The site is well located in terms of transport being proximate to the hub of town centre public transport which meets the transport sustainability objectives of planning policy by improving the choices of mode of transport available in the area, providing development that is easily accessible by alternative modes to the car.

Visitors to Buxton

12.20. Buxton is a historic spa town and attracts a number of tourists and tourism is important to the local economy. A 2004 Tourism Development Study identified that in 2000 three million visitors came to the Borough, of which 2.6 million were day visitors and 0.6 million were overnight visitors. The combined expenditure was £131 million. The town's heritage is one of the key attractions for tourists to Buxton and the scheme, as demonstrated in this ES, will have a positive effect on Buxton's heritage and environment.

12.21. The scheme will enhance visitor experience to Buxton by providing a new high quality but mid price range hotel within the town centre as part of a high quality mixed use scheme in place of the currently unsightly and underutilised surface level car park, positively impacting upon the visitor experience of Buxton.

12.22. The scheme will provide enhanced as well as complimentary facilities to those already present within the town including a greater range of shopping and restaurant facilities to the benefit of visitors and residents alike.

Summary of Findings

12.23. This ES considers the interactions of various potential impacts, concluding that such impacts will, in general, be positive on all key receptors. In particular local environmental quality, effects of the transportation network and residential amenity will in most cases be positive and in other cases negligible with appropriate mitigation as recommended throughout the ES. The scheme will provide a positive influence on the retail provision within Buxton and any potential competitive effects from the scheme will be more than compensated through linked trips with no predicted adverse impacts on the retail facilities of the town.

12.24. Overall, the scheme will provide an environmental improvement through the physical upgrade of this prominent and important town centre site which will benefit the environment, the local community and visitors to the town.