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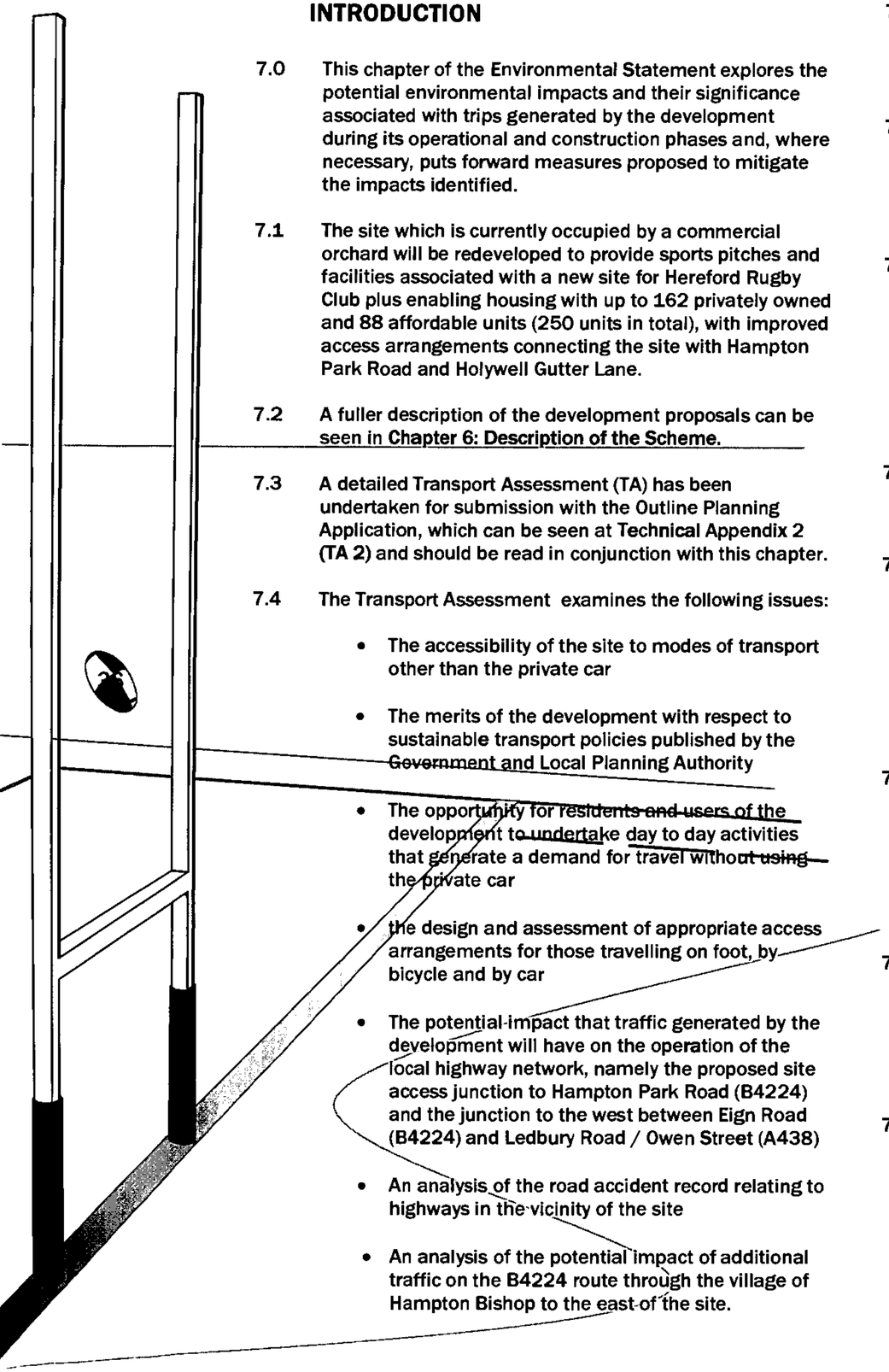

INTRODUCTION

7.0 This chapter of the Environmental Statement explores the potential environmental impacts and their significance associated with trips generated by the development during its operational and construction phases and, where necessary, puts forward measures proposed to mitigate the impacts identified.

7.1 The site which is currently occupied by a commercial orchard will be redeveloped to provide sports pitches and facilities associated with a new site for Hereford Rugby Club plus enabling housing with up to 162 privately owned and 88 affordable units (250 units in total), with improved access arrangements connecting the site with Hampton Park Road and Holywell Gutter Lane.

7.2 A fuller description of the development proposals can be seen in **Chapter 6: Description of the Scheme.**

7.3 A detailed Transport Assessment (TA) has been undertaken for submission with the Outline Planning Application, which can be seen at **Technical Appendix 2 (TA 2)** and should be read in conjunction with this chapter.

7.4 The Transport Assessment examines the following issues:

- The accessibility of the site to modes of transport other than the private car
- The merits of the development with respect to sustainable transport policies published by the Government and Local Planning Authority
- The opportunity for residents and users of the development to undertake day to day activities that generate a demand for travel without using the private car
- the design and assessment of appropriate access arrangements for those travelling on foot, by bicycle and by car
- The potential impact that traffic generated by the development will have on the operation of the local highway network, namely the proposed site access junction to Hampton Park Road (B4224) and the junction to the west between Eign Road (B4224) and Ledbury Road / Owen Street (A438)
- An analysis of the road accident record relating to highways in the vicinity of the site
- An analysis of the potential impact of additional traffic on the B4224 route through the village of Hampton Bishop to the east of the site.

7.5 The TA explores transport issues associated with the development's operational phase. The construction of the development will require the movement of construction materials, workers and plant.

7.6 In addition to providing the TA methodology and findings, this chapter considers in detail the potential environmental impacts and mitigation associated with traffic generated during the development's operational and construction phases.

7.7 For the operational phase, the assessment of environmental impacts draws from the TA the relevant data relating to the access strategy proposed for all modes of transport, baseline and predicted traffic patterns, the measures proposed to make the development highly accessible by modes of transport other than the car and the results of a road accident analysis.

7.8 For the construction phase the assessment draws on baseline traffic flow data from the TA and predictions for construction traffic movements.

7.9 This assessment follows the scope and methodology recommended by the Institute of Environmental Management and Assessment (IEMA) within its Guidelines for the *Environmental Assessment of Road Traffic.*

ASSESSMENT METHODOLOGY

Transport Assessment

7.10 The following sections of this chapter provide a summary of the principal issues addressed by the TA, the assessment methodologies adopted and its findings which have a bearing on the assessment of environmental impacts.

Baseline Conditions

7.11 The TA reports on the baseline traffic and transport conditions operating at and in the vicinity of the site, including peak hour traffic levels and movements, the existing networks available for pedestrians and cyclists and the availability and frequency of public transport services.

7.12 Surveys into traffic patterns and movements were undertaken in June 2010 to establish baseline conditions. The surveys involved an automated ATC traffic count, recording 24 hour vehicle movements using Hampton Park Road at the existing development site access over a 1 week period. Plus a weekday morning and evening peak period turning count at the junction of Eign Road with Ledbury Road and Owen Street to the west of the site. Peak hourly flow periods of 08.00-09.00 and 17.00-18.00 were identified from the surveys.

7.13 These peak hours were subsequently adopted for the purpose of investigating the potential impact of traffic associated with the development.

Access Strategy

7.14 The TA presents details for an access strategy for the development for vehicular traffic and non car modes of transport.

7.15 Two points of access will be formed; a primary junction connecting the site with Hampton Park Road at its southern boundary and a secondary access accommodating pedestrians, cyclists and when required emergency service vehicles connecting to Holywell Gutter Lane at the site's western boundary.

7.16 In addition an existing access which connects with Hampton Park Road close to the site's eastern boundary will be retained for limited traffic associated with maintenance vehicles for the Rugby Club and retained areas of orchard.

7.17 The primary access will take the form of a priority junction, with a right turning lane provision within Hampton Park Road, which will replace the existing orchard access.

7.18 The access strategy is considered to be beneficial in traffic and highway safety terms, through providing a primary junction with improved capacity that will not impede the flow of through traffic using the junction.

7.19 The access strategy will also be beneficial for vulnerable road users through providing a new pedestrian and cycle link within the development connecting to an existing path which runs alongside Hampton Park Road, and the provision of a new footpath between the primary access and the existing path to the west leading to Hereford.

7.20 Public transport users will also benefit through the proposal to formalise current bus stopping arrangements, through the introduction of a dedicated lay-by immediately to the east of the primary access.

7.21 The access arrangements proposed are illustrated on the development site Masterplan and in more detail within **Technical Appendix 2 (TA 2)** .

Sustainable Travel Patterns

7.22 A site accessibility appraisal has been undertaken and presented within the TA, which explores the development's accessibility for those travelling on foot, by bicycle and using public transport services.

7.23 In conjunction with the accessibility appraisal the TA puts forward outline proposals to implement a Travel Plan, aimed at reducing the number of car born trips required to sustain the development.

Traffic Predictions

7.24 To assess in detail the potential traffic impacts resulting from the development, the TA makes predictions for the development's trip generation for the weekday AM and PM peak hour assessment periods.

7.25 Trip predictions have been drawn from surveys undertaken at the existing Hereford Rugby Club site and data on suitable comparison sites contained within the TRICS database.

Traffic Impact Assessment

7.26 The TA considers the potential impact that vehicular traffic generated by the development may have on the operation of the site access proposals and the local highway network.

7.27 This assessment has been undertaken for weekday AM 08.00-09.00 and PM 17.00-18.00 peak traffic flow periods, which beyond the access involves a study area encompassing Hampton Park Road and the junction between Eign Road and Ledbury Road / Owen Street to the west of the site.

7.28 A 2015 assessment year has been adopted for the study, by which time it is anticipated that the development would be fully occupied.

Accidents and Road Safety

7.29 The TA also includes a review of personal injury accident records within the study area identified and investigates the potential impacts that traffic generated by the development may have on road safety.

Environmental Assessment

7.30 This chapter, drawing on the TA explores the potential environmental impacts and their significance associated with road traffic during the developments operational and construction phases.

7.31 The assessment methodology adopted is provided by the IEMA within its Guidelines for *The Environmental Assessment of Road Traffic.*

7.32 This document advises that prior to undertaking an environmental assessment its geographical boundaries should be determined. In relation to road traffic, the following screening process has been undertaken to establish the scale and extent of the assessment.

7.33 *"Rule 1 include highway links where traffic flows will increase by more than 30% (or the number of Heavy Goods Vehicles will increase by more than 30%)".*

7.34 *"Rule 2 include any specifically sensitive areas where traffic flows will have increased by 10% or more".*

7.35 Prior to exploring in detail the potential traffic related environmental impacts, this screening process has been undertaken for routes within the highway study area identified in the TA, drawing on data for the change in peak hour traffic levels and HGV traffic movements predicted to occur during the developments operational and construction phases.

7.36 This assessment considers the following potential environmental impacts, which the IEMA recommends should be investigated when a new development is likely to give rise to changes in traffic flows:

- Noise (refer to Chapter 8)
- Vibration (Not considered by the ES)
- Visual impact (refer to Chapter 12)
- Severance
- Driver delay
- Pedestrian delay
- Pedestrian amenity
- Accidents and safety
- Hazardous loads
- Air pollution (Not considered by the ES)
- Dust and dirt (refer to Waste and Construction Management Plan)
- Ecological impact (refer to Chapter 11)
- Heritage and conservation areas (refer to Chapters 12 & 14)

7.37 Issues associated with vibration and air pollution are not considered by this ES. The development and its construction will not result in activities and traffic impacting on sensitive receptors in terms of vibration.

7.38 Also the site does not fall within an Air Quality Management Area (AQMA) and therefore it has not been considered necessary to consider air pollution.

7.39 For each impact considered, its significance to an affected resource or receptor has been assessed on a scale of impact severity that has been adopted for the ES overall, with a magnitude ranging from negligible to very high.

7.40 The IEMA advises that for some developments not all of the impacts listed would be relevant but that the ES should consider each impact heading and if necessary present reasons why a detailed assessment of a specific impact is not warranted.

BASELINE CONDITIONS

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Existing Vehicular Access Arrangements

7.41 Vehicles currently gain access to and egress from the site at two locations via priority junctions connecting to Hampton Park Road at the sites southern boundary. These are described in more detail within the TA report.

The Local Highway Network

7.42 The site lies adjacent to the Hampton Park Road which forms part of the B4224 route. This provides a connection between Hereford City Centre and towns and villages to the southeast. At the site frontage the road is rural in character.

7.43 Approximately 1.3 km to the east of the site Hampton Park Road passes through the village of Hampton Bishop. During pre-application discussions Hampton Bishop residents expressed concerns over the potential impact of traffic generated by the development on the village.

7.44 Therefore this specific issue has been addressed within both the TA and this ES chapter.

7.45 The road is subject to the national speed restriction at the eastern half of the site frontage, with the limit reducing to 40 mph over the western half of the frontage on the approach to the Hereford built up area.

7.46 Two the west of the site Hampton Park Road serves predominantly residential areas as it approaches the city centre.

7.47 Approximately 2.6 km to the west of the site, the B4224 route terminates at a priority junction formed with the A438 Ledbury Road and Own Street. This junction lies approximately 0.5km from the City Centre.

7.48 Holywell Gutter Lane is located to the west of the site boundary. This is a single track lane classified as a 'BOAT' Byway Open to All Traffic. The lane forms a priority junction with Hampton Park Road.

7.49 A more detailed description for the local highway network can be found within the TA report.

Existing Traffic Conditions

7.50 The traffic surveys undertaken at Hampton Park Road and the junction of Eign Road with Ledbury Road in 2010 recorded the peak hour link flows illustrated as Tables 7.1 and 7.2.

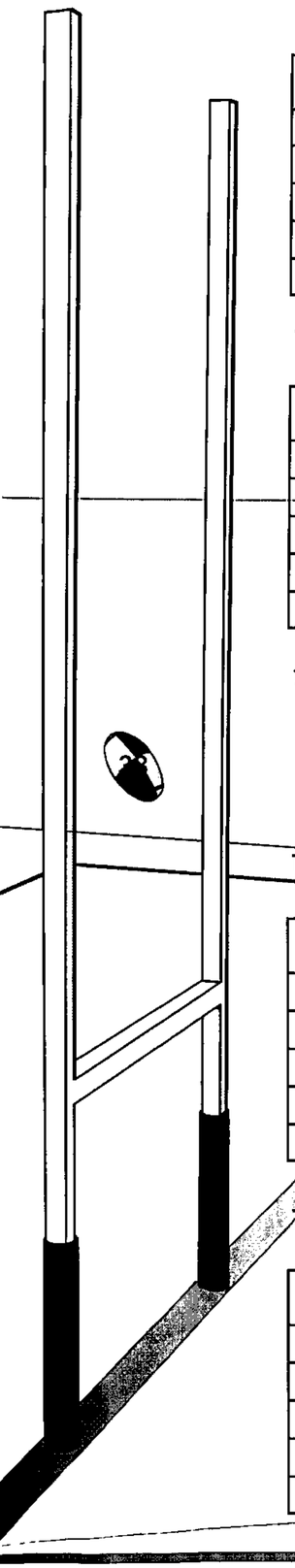

Table 7.1: Year 2010, Observed Traffic Flows, Weekday 08.00 - 09.00 Peak Hour

Highway Link	Total Two-Way Traffic Flow	HGV No. / Proportion
Hampton Park Road (E)	726	9 / 1.2%
Hampton Park Road (W)	726	9 / 1.2%
Eign Road	597	34 / 5.6%
Ledbury Road	892	44 / 5.0%
Owen Street	1351	58 / 4.3%

Table 7.2: Year 2010, Observed Traffic Flows, Weekday 17.00- 18.00 Peak Hour

Highway Link	Total Two-Way Traffic Flow	HGV No. / Proportion
Hampton Park Road (E)	603	7 / 1.2%
Hampton Park Road (W)	603	7 / 1.2%
Eign Road	557	6 / 1.1%
Ledbury Road	742	9 / 1.2%
Owen Street	1143	15 / 1.3%

7.51 The assessment year adopted for the Development for the TA and this ES Chapter is 2015. Tables 7.3 and 7.4 illustrate the peak hour link flows predicted for this year using traffic growth rates provided by the latest version of the Tempro program. Further details on the methodology used can be found within the TA.

Table 7.3: Year 2015, Baseline Traffic Flows, Weekday 08.00-09.00 Peak Hour

Highway Link	Total Two-Way Traffic Flow	HGV No. / Proportion
Hampton Park Road (E)	752	9 / 1.2%
Hampton Park Road (W)	752	9 / 1.2%
Eign Road	618	35 / 5.6%
Ledbury Road	924	46 / 5.0%
Owen Street	1399	60 / 4.3%

Table 7.4: Year 2015, Baseline Traffic Flows, Weekday 17.00-18.00 Peak Hour

Highway Link	Total Two-Way Traffic Flow	HGV No. / Proportion
Hampton Park Road (E)	625	8 / 1.2%
Hampton Park Road (W)	625	8 / 1.2%
Eign Road	577	7 / 1.1%
Ledbury Road	769	9 / 1.2%
Owen Street	1184	16 / 1.3

7.52 The peak hour flows shown have been used as the basis for assessing the potential environmental impacts.

<u>Networks and Services Available To Pedestrians, Cyclists and Public Transport Users</u>

Public Transport

7.53 The site is accessible by public bus services with formal stops located to the east and west of the application site. The nearest stop is located approximately 300m to the east of the centre of the site frontage.

7.54 To the west a stop is located approximately 500m from the site adjacent to the junction with Sudbury Avenue. The stops are served by two frequent services, the 72 and 453 operated by First Bus and Yeomans Cannon.

7.55 In addition to the formal stopping facilities it is understood that services are currently hailed by local residents and stop on Hampton Park Road adjacent to the existing main site access.

7.56 As explained later in this chapter, the development will provide a dedicated bus lay-by in this location to encourage this mode of transport.

Local Footpath Network

7.57 There are currently no paths along Hampton Park Road at the site frontage. However as explained later in the chapter the development will provide a new path along Hampton Park Road connecting the site access to the existing footpath leading to Hereford which commences approximately 70m to the west of the existing access.

Facilities for Cyclists

7.58 Cycle Hereford confirms that the site lies just over a 10 minute cycle ride from the City Centre and the Local Authority promotes a number of cycle routes than can be accessed from Eign Road to the west of the site.

7.59 Later sections of this chapter explain how the development will improve the sites accessibility by bicycle.

7.60 The TA provides a more detailed description of the local networks and services available for non car users.

POTENTIAL IMPACTS

<u>Scope of Study</u>

7.61 The potential impacts associated with road traffic generated by the development that are to be assessed are illustrated at "Environmental Assessment".

7.62 The study area for this exercise is drawn from the TA report and comprises the following highway links in the vicinity of the site.

- Hampton Park Road to the east of the proposed site
- Access Hampton Park Road to the west of the site access
- Eign Road on its approach to the junction with Ledbury Road / Owen Street
- Ledbury Road on its approach to the above junction
- Owen Street on its approach to the above junction

7.63 To determine the highway links within the study area which require a detailed assessment, the IEMA suggested screening process has been adopted.

7.64 This requires an environmental assessment where traffic levels or HGV traffic increases by 30% or by 10% in locations considered to be sensitive.

7.65 This screening process has been undertaken for the 2015 assessment year for weekday AM and PM peak periods, drawing on data for development traffic contained within the TA report and predictions for construction traffic illustrated at Tables 7.5 – 7.7.

7.66 It is envisaged that three distinct construction stages will be required; enabling works including the ground works and re-grading required for the Rugby Club and housing areas; superstructure construction focussing mainly on the housing area and; fit out, again focussing mainly on the housing element.

7.67 The predictions for construction traffic assume that both housing and Rugby Club areas will be built out in tandem and therefore take a worst case.

Table 7.5: Enabling Works, Peak Hour Construction Traffic Movements

Type of Vehicle	Vehicle Movements
Tipper Lorries for Removal of Material	4
Plant Deliveries (Low Loader)	Occasional
Contractors Vehicles	6
HGV Deliveries	1
Deliveries of Material using Rigid Wheelbase HGV	1
Deliveries of Tarmac using rigid wheelbase HGV	1
HGV's (Total)	7
Light vehicles (Total)	6
Overall Total (Peak Hour)	13

Table 7.6: Superstructure Construction, Peak Hour Construction Traffic Movements

Type of Vehicle	Vehicle Movements
HGV's supplying materials including bricks / blocks, timber products and pre-cast units	1
Concrete Mixers	1
Deliveries for other miscellaneous materials	1
HGV's for Scaffolding	1
Skip Lorries	1
Contractors Vehicles (cars / light vans)	6
HGV's (Total)	5
Light vehicles (Total)	6
Overall Total (Peak Hour)	11

Table 7.7: Fit Out Phase, Peak Hour Construction Traffic Movements

Type of Vehicle	Vehicle Movements
Rigid HGV's for kitchen delivery and fitting	1
Rigid HGV's for bathroom delivery and fitting	1
Rigid HGV's for Carpet / flooring delivery and fitting	1
Contractors Vehicles (cars / light vans)	6
HGV's (Total)	3
Light vehicles (Total)	6
Overall Total (Peak Hour)	9

7.68 The predictions illustrate that peak hour construction traffic levels are expected to reach their maximum level during the site enabling works phase with a total of 13 vehicle movements per hour using the site.

7.69 The traffic figures for this phase will therefore be used to investigate the potential environmental impacts.

7.70 To establish if the changes in traffic levels brought about by the development will be sufficient to warrant an environmental assessment, Tables 7.8-7.15 have been produced, which calculate the background traffic levels predicted to occur within the highways study area, the additional traffic generated by the development and the increase in traffic predicted.

7.71 This exercise has been undertaken for total development related traffic and as a separate exercise for HGV traffic. Further details for the network assignment predicted for phase and construction phase traffic can be found within the TA report.

Table 7.8: Year 2015, Predicted Change in Total Traffic, 08.00 – 09.00 Peak Hour, Operational Phase

Highway Link	Baseline Traffic (Two-Way)	Development Traffic (Two-Way)	Predicted Change
Hampton Park Road (E)	752	39	+5.2%
Hampton Park Road (W)	752	93	+12.3%
Eign Road	618	93	+15.0%
Ledbury Road	924	11	+ 1.2%
Owen Street	1399	83	+ 6.0%

Table 7.9: Year 2015, Predicted Change in Total Traffic, 08.00 – 09.00 Peak Hour, Construction Phase

Highway Link	Baseline Traffic (Two-Way)	Construction Traffic (Two-Way)	Predicted Change
Hampton Park Road (E)	752	4	+ 0.5%
Hampton Park Road (W)	752	9	+1.2%
Eign Road	618	9	+ 1.5%
Ledbury Road	924	1	+ 0.1%
Owen Street	1399	8	+0.5%

Table 7.10: Year 2015, Predicted Change in HGV Traffic, 08.00 – 09.00 Peak Hour, Operational Phase

Highway Link	Baseline Traffic (Two-Way)	Development Traffic (Two-Way)	Predicted Change
Hampton Park Road (E)	9	0	0%
Hampton Park Road (W)	9	0	0%
Eign Road	35	0	0%
Ledbury Road	46	0	0%
Owen Street	60	0	0%

7.72 The screening process illustrates that during the development's operational phase none of the highway links within the study area will incur an increase in peak hour traffic or change in HGV traffic proportions at or above the IEMA significance threshold, 30%, which is the recommended starting point for undertaking an environmental assessment.

Table 7.11: Year 2015, Predicted Change in HGV Traffic, 08.00 – 09.00 Peak Hour, Construction Phase

Highway Link	Baseline Traffic (Two-Way)	Construction Traffic (Two-Way)	Predicted Change
Hampton Park Road (E)	9	2	+22%
Hampton Park Road (W)	9	5	+55%
Eign Road	35	5	+14%
Ledbury Road	46	1	+ 2%
Owen Street	60	4	+6%

Table 7.12: Year 2015, Predicted Change in Total Traffic, 17.00 – 18.00 Peak Hour, Operational Phase

Highway Link	Baseline Traffic (Two-Way)	Development Traffic (Two-Way)	Predicted Change
Hampton Park Road (E)	625	46	+7.3%
Hampton Park Road (W)	625	110	+17.6%
Eign Road	577	110	+19.0%
Ledbury Road	769	17	+2.2%
Owen Street	1184	93	+7.9%

Table 7.13: Year 2015, Predicted Change in Total Traffic, 17.00 – 18.00 Peak Hour, Construction Phase

Highway Link	Baseline Traffic (Two-Way)	Construction Traffic (Two-Way)	Predicted Change
Hampton Park Road (E)	625	4	+0.6%
Hampton Park Road (W)	625	9	+1.4%
Eign Road	577	9	+1.6%
Ledbury Road	769	2	+0.3%
Owen Street	1184	7	+0.6%

7.73 During the development's construction phase, the increase in total peak hour traffic predicted is limited and well below the IEMA 30% significance threshold.

7.74 The increase in HGV traffic is during construction predicted to breach this threshold, however it should be recognised that any impacts associated with construction traffic will be of limited duration and the Local Authority will have the opportunity to mitigate any impact by controlling the number of construction vehicles accessing the site per day and during peak periods by condition if necessary.

Table 7.14: Year 2015, Predicted Change in HGV Traffic, 17.00 – 18.00 Peak Hour, Operational Phase

Highway Link	Baseline Traffic (Two-Way)	Development Traffic (Two-Way)	Predicted Change
Hampton Park Road (E)	8	0	0%
Hampton Park Road (W)	8	0	0%
Eign Road	7	0	0%
Ledbury Road	9	0	0%
Owen Street	16	0	0%

Table 7.15: Year 2015, Predicted Change in HGV Traffic, 17.00 – 18.00 Peak Hour, Construction Phase

Highway Link	Baseline Traffic (Two-Way)	Construction Traffic (Two-Way)	Predicted Change
Hampton Park Road (E)	8	2	+25%
Hampton Park Road (W)	8	5	+62%
Eign Road	7	5	+71%
Ledbury Road	9	1	+11%
Owen Street	16	4	+25%

7.75 In addition to mitigate this potential impact a Waste and Construction Management Plan will be operated by the developer during construction.

7.76 The IEMA guidelines also recommend a lower significance threshold of 10% in locations deemed to be sensitive to changes in traffic levels.

7.77 During the developments operational phase, the threshold is only breached marginally at two highway links within the study area, Hampton Park Road, to the west of the site access and further to the west Eign Road.

7.78 As a result of the screening process this assessment is therefore limited to these locations during the developments operational phase.

IMPACT ANALYIS

7.79 The potential impacts and their significance have been assessed for the developments operational phase. Only those effects not considered in other chapters are presented here.

Severance

7.80 Severance can be defined as the perceived division that can occur within a community when it becomes separated by a major traffic artery, although the term can also be used to describe a number of factors that separate people from places and other people.

7.81 Severance can result from people crossing a road or a physical barrier created by the road itself. The IEMA guidelines advise that in general marginal increases in traffic flow are by themselves unlikely to create severance.

7.82 The development will not involve the introduction of significant new highway infrastructure and therefore this assessment explores the potential increase in severance associated with the additional traffic generated and its potential impact on existing pedestrian and cycle links and crossing locations.

7.83 This investigation is focussed on Hampton Park Road to the west of the site and Eign Road further to the west.

7.84 Although it has been identified at the western end of the B4224 route, Eign Road, that development related traffic will be marginally in excess of the IEMA significance threshold this takes a worst case in terms of traffic impact.

7.85 The TA and this chapter assumes that all development related traffic taking the route to the west of the site will be additional to Eign Road.

7.86 The B4224 is joined by a number of site roads and other traffic routes between the site and Eign Road. It is therefore likely that development traffic may utilise some of the routes, progressively reducing the increase in traffic from that considered by the TA heading west from the site. This will limit the potential severance caused.

7.87 The developments impact in terms of severance is therefore considered to be low.

Driver Delay

7.88 Traffic delays can occur at a number of locations on the network in the vicinity of the site including at the site access where there will be additional turning movements and at highway intersections where the operation of junctions can be affected and the delay incurred by drivers negotiating them increased with the introduction of additional traffic.

7.89 To quantify the potential impact that the development will have on driver delay, a detailed traffic assessment has been undertaken, which is reported fully within the TA.

7.90 This assessment involves the capacity analysis of the development access junction proposed to Hampton Park Road and the junction between Eign Road and Ledbury Road / Owen Street.

7.91 The operation of the junctions has been tested using the Department of Transport Picady capacity analysis program during weekday AM and PM peak hours for a 2015 assessment year.

7.92 The traffic parameters used for this exercise involve baseline traffic movements inclusive of appropriate traffic growth rates and the addition of traffic associated with the development.

7.93 The TA demonstrates that the junctions considered will operate within capacity during the assessment year.

7.94 Consequently it is anticipated that the development will not lead to a significant increase in driver delay. The development's potential impact on driver delay can therefore be classed as low.

Pedestrian Delay

7.95 Pedestrian delay can occur when changes in the volume, composition and speed of traffic affects the ability of people to cross roads.

7.96 The IEMA guidelines advise that due to the range of local conditions and factors that can affect pedestrian delay, assessors should use their own judgement to determine if this is likely to be a significant impact.

7.97 The issues of pedestrian delay and severance are closely linked since an increase in the degree of severance brought about by an increase in traffic levels can lead to delays for pedestrian movements.

7.98 The assessment relating to severance identified that for highways to the west of the site the potential impact is likely to be low due to the robust approach taken to predict development traffic levels in this location and the relatively limited increase in peak hour traffic predicted in any event.

7.99 The proposal to provide a new footpath adjacent to Hampton Park Road between the site access and an existing path leading to Hereford and a pedestrian route connecting the site with Holywell Gutter Lane will also act to reduce severance and pedestrian delay between the site and surrounding area.

7.100 The potential impact in terms of pedestrian delay can therefore be classed as low.

Pedestrian Amenity

7.101 This term is broadly defined as the relative pleasantness of a journey and is affected by traffic flow, traffic composition and pavement width or separation from traffic.

7.102 This definition also includes fear and intimidation, which is influenced by the volume of traffic, its HGV composition and the proximity of people to traffic and factors such as narrow pavement widths.

7.103 This chapter has already considered pedestrian issues in terms of severance and pedestrian delay, two factors which affect levels of pedestrian amenity.

7.104 It has been identified that the increase in traffic associated with the development in the vicinity of the site will not result in a significant impact for pedestrians. The same conclusion can therefore be drawn for pedestrian amenity issues.

7.105 One factor affecting pedestrian amenity and especially fear and intimidation is the level of HGV traffic experienced by pedestrians.

7.106 The development proposed for the site will not generate additional HGV traffic movements during peak hours during its operation phase.

7.107 A limited number of HGV movements will occur during the construction phase and the Planning Authority will have the option to control and mitigate the number of movements at peak times by planning condition.

7.108 Construction traffic will also be mitigated by a Waste and Construction Management Plan that will be operated by the developer.

7.109 Overall the development's impact on pedestrian amenity can be classed as low.

Accidents and Safety

7.110 The TA presents in detail an accident analysis for highways within the study area, focussing on the B442 corridor, encompassing Hampton Park Road, Eign Road and its junction with Ledbury Road / Owen Street.

7.111 The accident analysis suggests that over the most recent 3 year period there has not been a significant accident record over the highways under consideration, either in number or severity and that no specific trend or pattern to the accidents can be identified.

7.112 It is difficult to predict precisely how a new development will affect the accident record, however the following factors should be taken into account when considering this issue.

The suitability of highways to accommodate additional Traffic.

7.113 Road accidents are typically more prevalent at highway junctions, particularly if they are heavily trafficked.

7.114 The TA has demonstrated that the closest junction to the site joining the county primary road network, the junction between Eign Road and the A438, will not be materially affected by traffic generated by the development during peak periods as the junction will remain within capacity.

Facilities for vulnerable road users

7.115 The development will provide a new footpath alongside Hampton Park Road where none exists at present and a safe route through the site for cyclists and pedestrians, segregated from traffic that will connect to the existing path to Hereford via Holywell Gutter Lane.

7.116 These proposals will be beneficial in highway safety terms.

Access Design

7.117 The development will be provided with a new safe means of access via a main junction connecting to Hampton Park Road and a secondary access for pedestrians, cyclists and emergency service vehicles connecting to Holywell Gutter Lane.

7.118 These junctions have been designed to the relevant highway standards, which focus on highway safety.

7.119 The design proposed for the main site access includes a right turning lane facility within Hampton Park Road which is an improvement in safety terms when compared with the existing site junction layout.

7.120 Taking the above factors into account the developments impact on accidents and safety is considered to be low.

Hazardous Loads

7.121 The form of development proposed, predominantly sports facilities with enabling housing, will not give rise to any activities requiring the movement of hazardous loads.

7.122 It is therefore not necessary to consider this issue in detail for the developments. Any potential impact is therefore considered to be negligible.

Impact on Hampton Bishop

7.123 In addition to the potential environmental impacts identified by the IEMA guidelines for investigation, the impact of operational and construction phase traffic on the village of Hampton Bishop has been considered in response to concerns raised by the Parish Council and local residents.

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7.124 The TA and this chapter has identified that the majority of traffic generated by the development, 70%, will travel using Hampton Park Road to and from the west of the site, avoiding the route through Hampton Bishop.

7.125 During the developments operational phase a limited increase in traffic of only 5.6% as a maximum is predicted during peak traffic flow periods.

7.126 This falls well below the 30% and 10% significance thresholds recommended by the IEMA for a detailed assessment. Also the development is not predicted to generate any additional HGV traffic when in use.

7.127 During construction, the overall level of traffic increase predicted in the vicinity of the village will be negligible, a maximum of 0.6% during peak hours a figure again well below the IEMA significance thresholds.

7.128 HGV traffic is predicted to increase by a larger margin to a maximum peak hour level of 25%.

7.129 However the Planning Authority will have the opportunity to mitigate and control and where required limit construction traffic movements during peak hours via a planning condition if required.

7.130 The development is therefore predicted to have a limited impact on the B4224 route through Hampton Bishop Village.

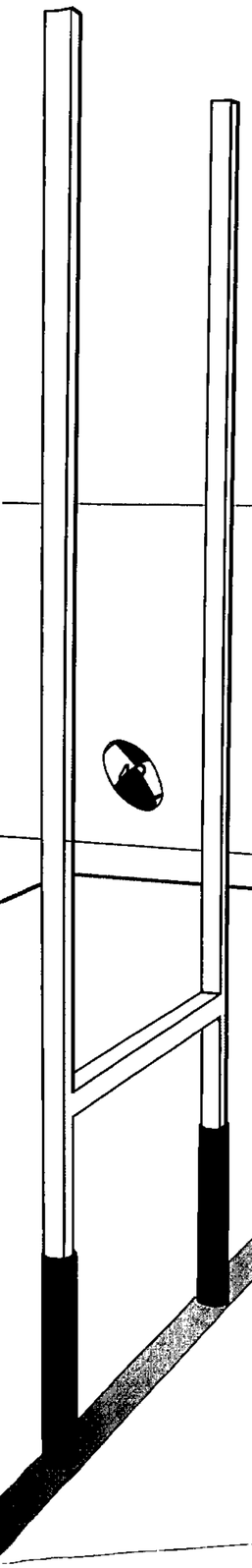
MITIGATION MEASURES

7.131 To mitigate the potential environmental impacts arising from development traffic during its operational and construction phases a number of measures are proposed to limit the level of traffic required to sustain the development.

7.132 These can be characterised as; physical measures, such as the design and configuration of the site itself and the provision of new pedestrian and cycle connections that will improve the accessibility of the site and; measures to actively manage and where possible limit the level of traffic generated by the site, such as a Travel Plan.

Construction Phase

7.133 A Waste and Construction Management Pan will be developed in discussion with the Planning Authority to limit the potential environmental impacts associated with the developments construction, including construction traffic levels and routing. A framework for this document accompanies the Outline Application.



Operational Phase

Physical Measures

7.134 As discussed earlier in this chapter, the development will provide a new footpath alongside Hampton Park Road connecting the site access with an existing path leading to Hereford.

7.135 In addition dedicated combined pedestrian and cycle paths will be provided within the proposed Rugby Club and housing areas providing safe routes, segregated from vehicular traffic.

7.136 These will link to existing off site infrastructure via a connection to Holywell Gutter Lane at the site's western boundary.

7.137 These measures will bring benefits in terms of reducing severance, pedestrian delay and improve pedestrian amenity.

7.138 Overall they will act to make the site more accessible for those travelling by modes of transport other than the car.

7.139 To further improve accessibility, the design proposed for the development's access to Hampton Park Road includes the provision of a new lay by and bus stop adjacent to the access to serve existing services and encourage the developments users and residents to travel by bus as an alternative to the car.

Management Measures

7.140 To limit and where possible reduce over time the number of motorised journeys required to sustain both the development, it is proposed to implement a Travel Plan.

7.141 This Travel Plan will be based on the submitted Travel Plan Framework that accompanies the Outline Planning Application.

RESIDUAL IMPACTS

7.142 Following the implementation of the mitigation measures outlined in this chapter no significant adverse impacts are anticipated.

CONCLUSION

7.143 This ES chapter has assessed the potential environmental impacts and their significance associated with road traffic generated during the development's operational and construction phases.

7.144 It has been produced in conjunction with a full Transport Assessment (TA) report which can be seen at Technical Appendix 2 (TA 2). The following impacts have been assessed in this chapter as recommended by the IEMA guidelines.

- Severance
- Driver delay
- Pedestrian delay
- Pedestrian amenity
- Accidents and safety
- Hazardous loads

7.145 In addition the potential impact on the village of Hampton Bishop has been considered.

7.146 The scope for the assessment has been determined through undertaking a screening exercise to establish the predicted increases in traffic flow resulting from the development over a highways study area outlined within the TA.

7.147 The screening confirms that relatively limited increases in traffic are predicted during the developments operational phase, below the threshold normally required for an environmental assessment of traffic issues.

7.148 However for two highway links, to the west of the site, Hampton Park Road and Eign Road the increase in operational traffic marginally exceeds the threshold required for an assessment if locations are considered to be sensitive. The assessment therefore has focussed on these highway links.

7.149 The assessment has also presented details for the measures proposed to mitigate the potential impacts identified, through physical measures such as improved infrastructure and connections for pedestrians and cyclists or measures to effectively manage and limit car borne travel demand, including a Travel Plan.

7.150 Following a detailed consideration of the potential impacts listed, it is concluded that overall, taking into account mitigation, the severity of traffic during the developments operation and construction will be low using the impact severity scale adopted for this ES and unlikely to be significant in terms of the statutory decision making process for the Outline Planning Application.

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CHAPTER 8 : NOISE
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INTRODUCTION

8.0 This chapter explores the potential noise impacts associated with the development. It provides a summary of a detailed Noise Impact Assessment that has been undertaken and any mitigation measures recommended.

8.1 The Noise Impact Assessment can be seen in full as Technical Appendix 3.

8.2 The development involves new sports facilities associated with a new site for Hereford Rugby Club and enabling housing.

8.3 The Noise Assessment has considered the potential noise sources associated with the proposed sports facilities including; Rugby match spectators; car park events and functions taking place in the proposed Clubhouse.

8.4 It has also considered the potential increase in noise associated with traffic generated by the development using the B4224, Hampton Park Road and during the construction phase of the development.

8.5 The potential impacts of these noise sources on existing residential properties and the new dwellings proposed has been quantified.

ASSESSMENT METHODOLOGY

8.6 In order to fully assess the noise impact arising from the proposed development, a noise survey was designed to include measurements of the background noise over the times of Rugby matches and operating hours of the Clubhouse.

8.7 This survey was undertaken over a period of four days in May 2010.

8.8 All known noise sources, e.g. match spectators, people talking, car park events, indoor noise and external plant, etc., related to the proposed development were assessed, some by measurements and some by desktop calculations.

8.9 It was found that noise likely to be caused by the match spectators' shouting was the most significant closely followed by car engine starts and revving.

8.10 The former would occur at daytime when the background noise is expected to be higher and the car park events could occur at the more noise sensitive late evening/night-time period.

8.11 The potential impact of the identified noise sources on both existing and proposed residential properties was quantified following the advice published within PPG 24, by the World Health Organisation (WHO) within its "Guidelines for Community Noise" and within the BS 8233 "Sound Insulation and Noise Reduction for Buildings Code of Practice" published in 1999.

NOISE IMPACTS

8.12 The assessment demonstrates that primarily as a result of the large distance between the sports pitches and other venues and the existing dwellings, the noise caused by the development events would not be noticeable.

8.13 Although there may be circumstances, for example depending upon the wind speed and direction and combined with an abnormally low background noise level, when noise from the development events may be audible, it is unlikely that these would be clearly perceptible.

8.14 Furthermore, when the proposed residential housing between the sports pitches and the existing dwellings is completed and built, these would provide additional screening thereby mitigating the noise further.

8.15 The proposed new dwellings particularly those close to the proposed car park are likely to have an adverse noise impact from car engines starts and revving.

8.16 Consequently, a noise barrier along the western edge of the car park is recommended to reduce this impact to a more tolerable level and this would be designed when further details of the housing layout and the car park are available.

8.17 Noise from construction activities is considered unlikely to cause adverse impact because a Waste and Construction Management Plan will be used on site and this would include discussions and agreement of a Section 61 with the Local Authority.

MITIGATION

8.18 The assessment of the noise impacts indicates an adverse impact at the nearest house in the proposed new housing area.

8.19 This arises from noise due to car park events such as engine starts and revving and door slams.

8.20 Although detailed site layout details are not available at this stage, the Noise Assessment reports that a properly designed noise barrier on the edge of the car park would be able to reduce the noise significantly and thus reduce the adverse noise impact from 'major' to 'moderate'.

8.21 As a result, noise from the car park events would be reduced to a more tolerant level.

8.22 To mitigate potential noise impacts during construction, a Waste and Construction Management Plan will be operated on site and this will meet the statutory requirements.

8.23 This plan would include discussion, liaison and agreement of a Section 61 of the Control of Pollution Act with the Local Authority.

8.24 This agreement includes consideration of the best means of construction, the hours of work, and practical mitigation measures to reduce the noise impact.

8.25 The relevant procedures and guidance are given in BS 5228 including methods to predict noise from various construction activities.

8.26 It is considered that in general if the construction hours are kept to 08:00 to 18:00 hours Monday to Friday and 08:00 to 13:00 hours Saturday, and best practicable means of noise control are used and maintained throughout the construction period then there would be no likelihood of adverse impact.

CHAPTER 9 : HYDROLOGY AND DRAINAGE
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CHAPTER 9 : HYDROLOGY AND DRAINAGE

INTRODUCTION

9.0 This chapter identifies and assesses the potential impacts of the proposed development in respect of flood risk, foul and surface water drainage and water resources.

9.1 It describes the methodology employed to assess the impacts, establishing the current baseline scenario, the mitigation measures required to prevent, reduce or offset any significant negative impacts and an assessment of any likely residual impacts.

9.2 This chapter has been prepared with the benefit of consultation with and information received from the following.

- The Environment Agency (EA)
- Welsh Water (WW)
- Herefordshire Council (HC)

9.3 This chapter is supported by Technical Appendix 4 (TA4): Flood Risk Assessment (FRA), prepared by R J Fillingham Associates Ltd in accordance with Planning Policy Statement (PPS) 25 and PPS25.

9.4 The FRA and this assessment also make reference to Herefordshire Council's Strategic Flood Risk Assessment (SFRA).

ASSESSMENT METHODOLOGY

9.5 The assessment of potential effects on existing water resources, the public sewer network and the surrounding area has been considered for both the temporary (construction) and permanent (operational) scenarios associated with the proposed development.

9.6 Each impact identified has been assessed based on the following criteria.

- Extent – local (application site and/or neighbouring property) or wide (neighbouring towns/villages)
- Duration – temporary or permanent
- Nature – positive, negative or neutral

9.7 The following terms have been used to assess the residual significance of the impacts identified.

- Major – Where development proposals could be expected to result in the loss or recovery of a water resource and therefore have a material influence on the decision making process.
- Moderate – Where the development proposals could be expected to effect the integrity of a water resource and therefore have some influence on the decision making process.
- Minor – Where the development proposals could be expected to have a small effect on a water resource with limited influence on the decision making process
- Neutral – Where the development proposals could be expected to have no or a negligible effect on water resources and therefore have a negligible influence on the decision making process.

BASELINE CONDITIONS

9.8 This application site has a gross area of 20.44ha and is classified as Greenfield. It is currently occupied almost entirely by fruit orchards.

9.9 The application site forms part of a wider site ownership which has an overall gross area of 46.24ha.

9.10 There is a large variation in levels across the site. From a high point towards the north western corner, levels fall away in all directions but most predominantly towards the southern boundary. A pronounced embankment runs east/west across the south of the site.

Fluvial Flood Risk

9.11 The vast majority of the application site lies within Flood Zone 1 which is classified as being at a low probability of fluvial flooding.

9.12 A small section also lies within Flood Zones 2 and 3 which are classified as being at a medium and high probability of fluvial flooding respectively.

9.13 The site benefits from The Stank flood defences which protect the nearby village of Hampton Bishop. The SFRA confirms that these defences are ancient in origin but are periodically reconstructed/repaired.

9.14 Whilst the SFRA also confirms that the defences offer protection up to the 1% AEP (1 in 100 year) flood event with varying degrees of free board, the defences have been breached on several occasions, most recently in July 2007.

9.15 This recent breach caused significant damage and led to people being evacuated from properties within nearby Hampton Bishop.

9.16 We are not aware of any records or evidence to suggest that the application site has ever been subject to fluvial flooding.

Surface Water Drainage

9.17 The nearest public surface water sewers to the site are located within the existing residential development located to the west of Holywell Gutter Lane.

9.18 The sewer records indicate that this sewer network discharges to the River Wye, via a series of ditches to the south of Hampton Park Road.

9.19 We are not aware of any existing positive surface water drainage networks associated with the site to take into consideration.

Foul Drainage

9.20 The nearest public foul sewers to the site are also located within the existing residential development located to the west of Holywell Gutter Lane.

9.21 The sewer records indicate that these sewers connect to an adopted foul pumping station located just to the north west of the junction of Holywell Gutter Lane with Hampton Park Road.

9.22 The site is Greenfield and therefore has no existing foul drainage network to take into consideration.

Water Resources & Hydrology

9.23 The site lies between the River Wye and River Lugg, classified as the Lower Wye catchment. Based on prevailing topography, approximately 85% of the application site falls within the Greenfield catchment of the River Wye with the remaining 15% falling within the Greenfield catchment of the River Lugg.

9.24 There are three existing ponds located within the wider site. Two of these ponds fall within the application site boundary, located to the south within a copse/wooded area.

9.25 We understand from anecdotal evidence that the ponds were dug approximately 40 years ago to assist with the natural drainage of the lower lying orchard to the south, within the floodplain. Some minor associated ditches are also evident.

9.26 Groundwater levels in the area are known to be variable. Whilst no formal groundwater monitoring has been undertaken on the site, groundwater was not encountered in 3 No. 2m deep pits dug to the south of the site for percolation testing.

9.27 The site is not located within a groundwater Source Protection Zone (SPZ) but is underlain by a Secondary

A (Minor) Aquifer.

9.28 The site does not have a developed history but it has been occupied by an intensively cultivated fruit orchard for many years.

9.29 This is likely to have led to a build up of pesticides within the soils. Contamination issues and the associated impacts are discussed within **Chapter 15: Geo-Environmental.**

Potential Impacts

9.30 Table 9.1 below identifies the key temporary (construction) and permanent (operational) potential impacts to be assessed.

Table 9.1 Potential Impacts to be Assessed

	Temporary (Construction)	Permanent (Operational)
Fluvial Flood Risk	Increased fluvial flood risk to the site and other areas via the displacement of floodwater by temporary buildings/installations.	Increased fluvial flood risk to the new development and other areas via the displacement of floodwater by new buildings/installations.
Surface Water Drainage	Increased risk of flooding and pollution to the site or other areas via positive surface water run off associated with temporary buildings or hard standing areas.	Increased risk of flooding and pollution to the new development and other areas via positive surface water run off associated with new buildings or hard standing areas.
Foul Water Drainage	Increased risk of flooding and pollution to the site or other areas from temporary foul drainage arrangements.	Increased risk of flooding and pollution from the overloading of public/private foul drainage networks as a result of the foul discharge from the new development.
Groundwater Quality	Increased risk of pollution to groundwater sources from the inappropriate material storage, deliveries, spillages or vehicle washdown facilities.	Increased risk of pollution to groundwater sources from the inappropriate use/operation of sustainable drainage techniques.
Groundwater Recharge	Reduction in groundwater recharge from earthworks or the creation of temporary hard standing areas.	Reduction in groundwater recharge from the creation of new hard standing areas and/or the inappropriate use of sustainable drainage techniques.

IMPACT MITIGATION MEASURES

Fluvial Flood Risk (Temporary)

9.31 The proposed site compound areas, including any temporary buildings, will be located within areas that lie within Flood Zone 1 and will therefore not be susceptible to fluvial flooding or increase the risk of fluvial flooding to other areas via the displacement of floodwater.

9.32 It is proposed to locate two of the new Rugby pitches within Flood Zones 2 and 3, to the south of the site. The relevant contractor/s will therefore be made aware of the requirement to work within the floodplain and they will be required to provide the appropriate method statements/ risk assessments.

Fluvial Flood Risk (Permanent)

9.33 The residential element of the proposed development will be located entirely on the part of the site that lies within Flood Zone 1 and will therefore not be susceptible to fluvial flooding or increase the risk of fluvial flooding to other areas via the displacement of floodwater.

9.34 The buildings associated with Rugby Club element of the proposed development will be located on the part of the site that lies within Flood Zone 1 and will therefore not be susceptible to fluvial flooding or increase the risk of fluvial flooding to other areas via the displacement of floodwater.

9.35 With respect to the two new Rugby pitches that will be located within the floodplain, as it is not proposed to alter ground levels in this area, these pitches will be at risk of flooding in the 1 in 100 year event but they will not displace floodwater.

9.36 Vehicular and/or pedestrian access to the proposed development via the main access road off Hampton Park Road may be restricted in the 1 in 100 year flooding event.

9.37 An alternative emergency access via Holywell Gutter Lane is therefore proposed.

9.38 Flood risk via other sources is considered within the following paragraphs.

Surface Water Drainage (Temporary) S/102921/Q

9.39 All surface water run off associated with temporary hard standing areas will be controlled on site with no temporary positive connections to ditches, watercourses or sewers. Mitigation against pollution is dealt with in the following paragraphs.

Surface Water Drainage (Permanent)

9.40 The proposed surface water drainage strategy will rely solely on the use of infiltration sustainable urban drainage systems (SUDS) techniques, avoiding the requirement for any positive surface water discharges to ditches, watercourses or sewers.

9.41 The main infiltration device proposed is an infiltration basin/s. Subject to the payment of an appropriate commuted sum, it is intended that the limited maintenance responsibilities associated with this device will be passed to Herefordshire Council.

9.42 Should a positive discharges become necessary for any reason then it will be restricted to the equivalent existing Greenfield run off rate, in accordance with EA requirements.

Foul Water Drainage (Temporary)

9.43 Any temporary foul drainage systems will be connected to a temporary full retention cess pit/storage tank with an appropriate emptying arrangement/schedule. Full details are to be provided within a method statement produced by the appropriate contractor/s.

9.44 No foul discharge will be connected to the new on site foul drainage system until it has been connected to the appropriate agreed permanent outfall.

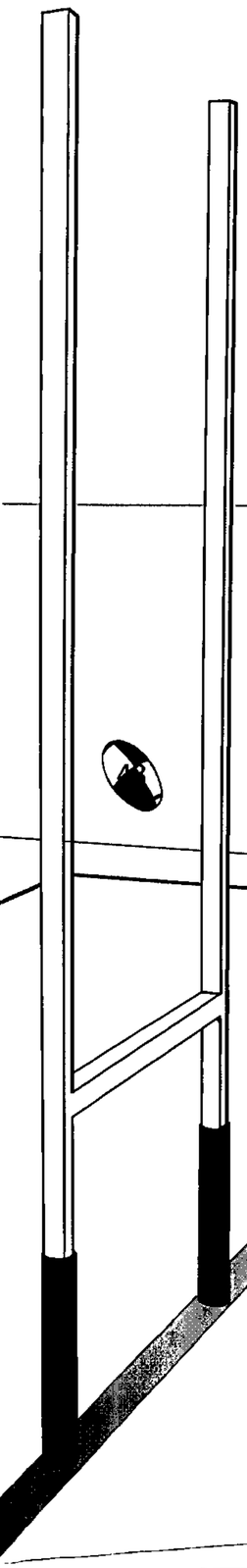
Foul Water Drainage (Permanent)

9.45 It is proposed to connect the foul drainage from the proposed development to the public foul sewer network.

9.46 The point of connection and any necessary off site mitigation works are to be determined by WW. All off site mitigation works will be implemented by WW at the developer's expense prior to any connection being made.

9.47 It is expected that an on site pumping station will be required. This will be constructed to adoptable standards and offered to WW for adoption under Section 104 of the Water Industry Act 1991.

9.48 Any adoptable pumping station will be located a minimum of 15m from the nearest habitable building.



Groundwater Quality (Temporary)

9.49 A Waste and Construction Management Plan will be developed based on the submitted framework which will be implemented during the construction phase of the proposed development to minimise adverse effects on the environment.

9.50 All construction activities will be undertaken in accordance with best practice construction techniques and regulations in addition to the relevant EA Pollution Prevention Guidelines (PPG), in particular:

- PPG1: 'General Guide to the Prevention of Water Resources'
- PPG6: 'Working at Construction and Demolition Sites'
- PPG8: 'Safe Storage and Disposal of Oils'

9.51 Temporary impermeable areas will be kept to an absolute minimum. In accordance with CIRIA C532 'Control of Water Pollution from Construction Sites', positive surface water run off from the construction site will be managed by the appropriate use of temporary bunding and lined settlements ponds, allowing for the isolation and on site treatment of sediment laden run off before it is discharged to ground.

9.52 Appropriately sited storage areas will be provided for any fuels, oils or chemicals. The storage areas will have impervious bases, be adequately bunded and be secure.

9.53 All deliveries of fuels, oils and other hazardous materials will be supervised by appropriate personnel to ensure that storage tanks/areas do not become overfilled and to guard against any accidental spillages.

9.54 An appropriate spill management plan will be provided, detailing the materials and procedures that will be used to deal with any such event.

9.55 Appropriate facilities will be provided for the washdown of vehicles and plant. Associated run off will not be disposed of to ground or watercourses.

9.56 Cut and fill accommodation works will be required to create a level platform for five of the new rugby pitches to be located within the central area.

9.57 Whilst the site does not have a developed history and is not located within a Groundwater SPZ, it has been intensively cultivated for many years as fruit orchards.

9.58 There may therefore have been a long term build up of pesticides within the soil. The extent of any such contamination will require confirmation prior to the production of an appropriate method statement to guard against the accelerated mobilisation of any existing contaminants as a result of proposed earthworks.

9.59 Contamination impacts are considered further within **Chapter 15: Geo-Environmental** and the supporting **Technical Appendix 8 (TA8)**.

Groundwater Quality (Permanent)

9.60 The proposed development uses are residential and leisure. The risk of any significant leaks or spillages will therefore be very low, of a minor nature and generally controllable at source.

9.61 The most likely areas of the proposed development that would be subject to any leak or spillage of a hazardous material will be the adoptable highways and private car parks.

9.62 Run off from these areas will be drained via trapped gullies as a minimum, together with bypass petrol/oil separators where appropriate, in accordance with the relevant EA PPGs.

9.63 Only clean roof water will be permitted to drain directly to the ground via infiltration SUDS techniques.

9.64 The selection and location of SUDS techniques will be in accordance with CIRIA C609 'Sustainable Drainage Systems', being sympathetic to groundwater quality.

Groundwater Recharge (Temporary)

9.65 Temporary impermeable hard standing areas will be kept to an absolute minimum and will therefore have an insignificant impact on groundwater recharge.

9.66 There is a potential temporary risk to groundwater recharge associated with the proposed cut and fill earthworks to the central area of the site.

9.67 As there are no groundwater abstraction points within the immediate vicinity, the associated potential impact is considered to be minor.

Groundwater Recharge (Permanent)

9.68 It is proposed that the surface water drainage strategy will rely solely on the use of infiltration SUDS techniques.

9.69 The selection and location of these techniques will be in accordance with CIRIA C609 *'Sustainable Drainage Systems'*, and will be sympathetic to groundwater recharge.

9.70 The design of infiltration SUDS will be based on prevailing infiltration rates, to be determined on site by percolation testing which will be carried out in accordance with BRE Digest 365.

9.71 The natural drainage of the new Rugby pitches, and/or the incorporation of localised filter land drainage systems to assist with their natural drainage, should provide mitigation against any potential permanent impacts associated with the cut and fill works.

Residual Impact Assessment

9.72 Table 9.2 below provides a residual impact assessment associated with temporary (construction) operations in accordance with the identified assessment methodology. The significance level assumes the adoption of appropriate mitigation measures.

Table 9.2 **Temporary Residual Impact Assessment**

Impact	Extent	Duration	Nature	Significance
Fluvial Flood Risk	Local/Wide	Temporary	Negative	Neutral
Surface Water Drainage	Local	Temporary	Negative	Neutral
Foul Water Drainage	Local	Temporary	Negative	Neutral
Groundwater Quality	Local	Temporary	Negative	Minor
Groundwater Recharge	Local	Temporary	Negative	Minor

Table 9.3 Permanent Residual Impact Assessment

Impact	Extent	Duration	Nature	Significance
Fluvial Flood Risk	Local/Wide	Permanent	Negative	Neutral
Surface Water Drainage	Local/Wide	Permanent	Negative	Neutral
Foul Water Drainage	Local/Wide	Permanent	Negative	Neutral
Groundwater Quality	Local	Permanent	Negative	Minor
Groundwater Recharge	Local	Permanent	Negative	Minor

9.73 Table 9.3 provides a residual impact assessment associated with permanent (operational) scenario, in accordance with the identified assessment methodology. The significance level assumes the adoption of the appropriate mitigation measures.

CONCLUSION

Temporary (Construction)

9.74 There are no significant residual fluvial flood risk impacts identified with respect to temporary (construction) activities.

9.75 Assuming the adoption of the appropriate mitigation measures, implemented by a Waste and Construction Management Plan, there are only minor negative residual impacts identified in respect of foul and surface water drainage or water resources.

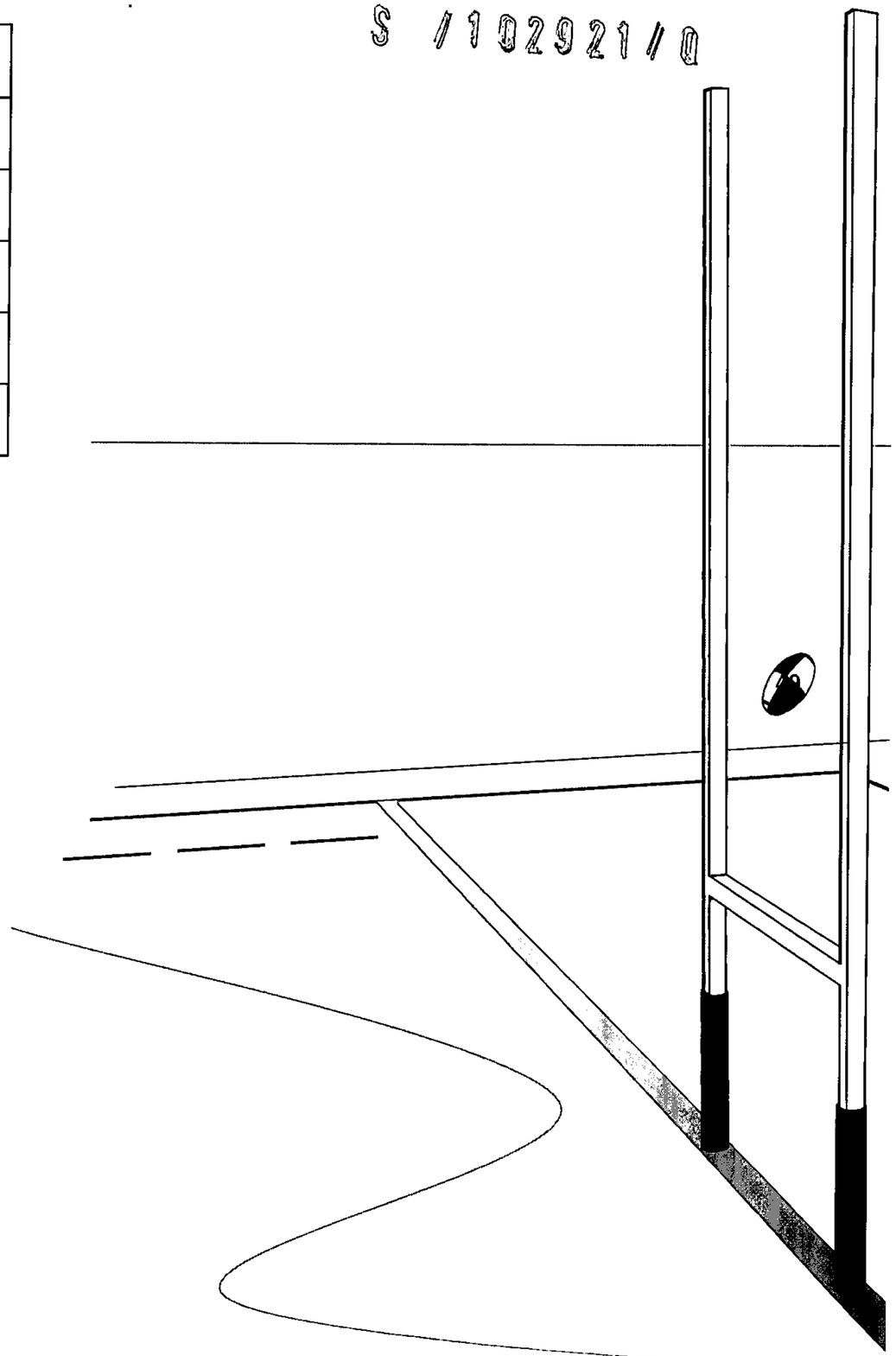
Permanent (Operational)

9.76 The proposed development is appropriate for location on this site, in accordance with PPS25. The only residual impacts identified are the potential for two of the new Rugby pitches to flood in the 1 in 100 year event and the potential restricted use of the main development access road in the 1 in 100 year event.

9.77 There would be no increase in fluvial flooding to other areas via the displacement of floodwater.

9.78 Assuming the adoption of the drainage strategies identified highlighted within this chapter and the FRA, there are no significant residual impacts identified with respect to foul and surface water drainage.

9.79 Assuming the appropriate use of SUDS techniques and the incorporation of appropriate pollution control measures within the surface water drainage strategy, there are only minor negative residual impacts identified in respect of water resources.



CHAPTER 10 : UTILITIES & SERVICES

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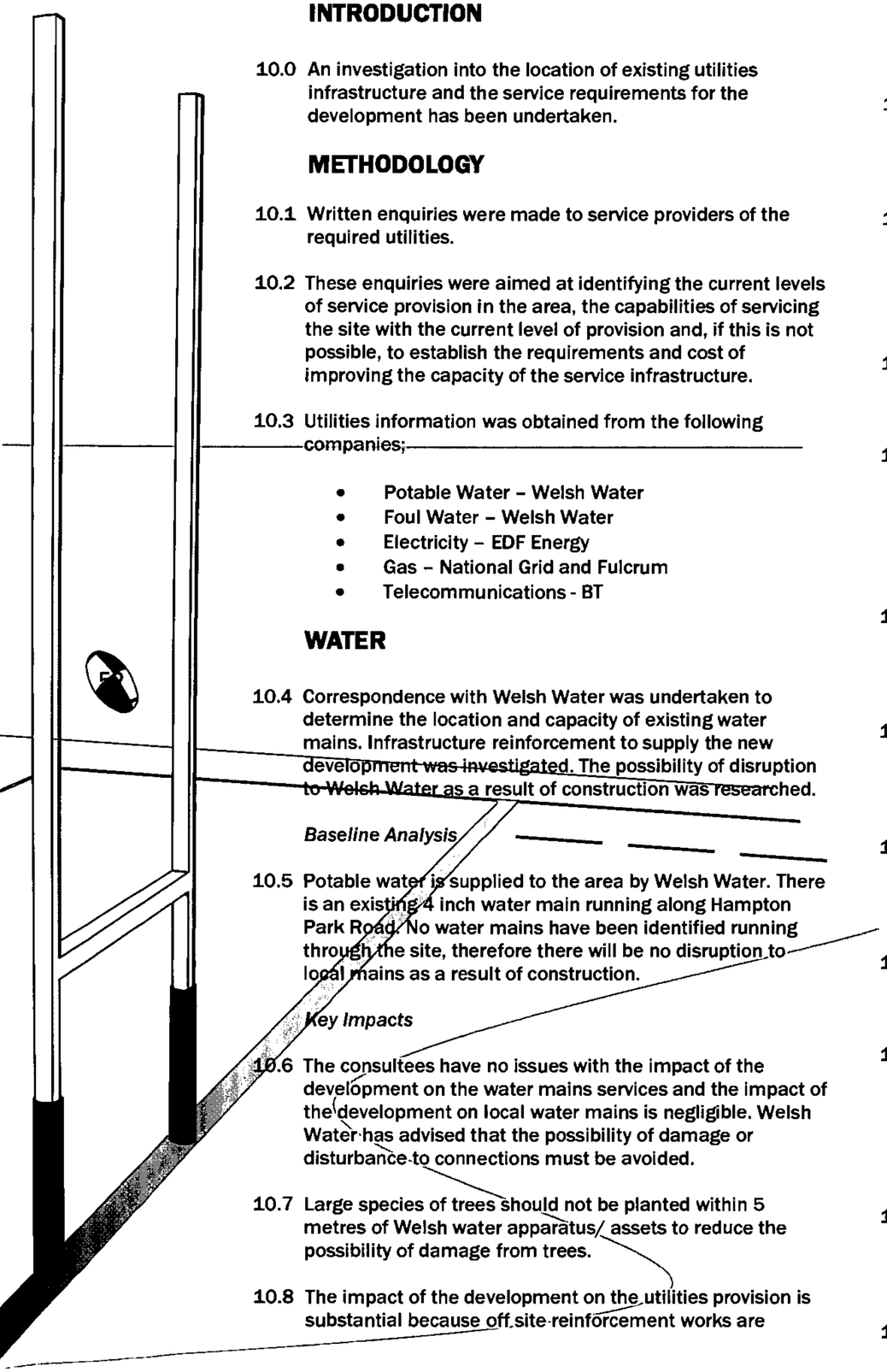


INTRODUCTION

10.0 An investigation into the location of existing utilities infrastructure and the service requirements for the development has been undertaken.

METHODOLOGY

10.1 Written enquiries were made to service providers of the required utilities.

10.2 These enquiries were aimed at identifying the current levels of service provision in the area, the capabilities of servicing the site with the current level of provision and, if this is not possible, to establish the requirements and cost of improving the capacity of the service infrastructure.

10.3 Utilities information was obtained from the following companies;

- Potable Water – Welsh Water
- Foul Water – Welsh Water
- Electricity – EDF Energy
- Gas – National Grid and Fulcrum
- Telecommunications - BT

WATER

10.4 Correspondence with Welsh Water was undertaken to determine the location and capacity of existing water mains. Infrastructure reinforcement to supply the new development was investigated. The possibility of disruption to Welsh Water as a result of construction was researched.

Baseline Analysis

10.5 Potable water is supplied to the area by Welsh Water. There is an existing 4 inch water main running along Hampton Park Road. No water mains have been identified running through the site, therefore there will be no disruption to local mains as a result of construction.

Key Impacts

10.6 The consultees have no issues with the impact of the development on the water mains services and the impact of the development on local water mains is negligible. Welsh Water has advised that the possibility of damage or disturbance to connections must be avoided.

10.7 Large species of trees should not be planted within 5 metres of Welsh water apparatus/ assets to reduce the possibility of damage from trees.

10.8 The impact of the development on the utilities provision is substantial because off site reinforcement works are required to provide a water supply for this development.

Mitigation Measures

10.9 The upsizing of approximately 1.1 km of existing 4 inch water main to 180mm water main along the frontage of the site in Hampton Park Road is required to enable a service to the development.

10.10 The budgetary cost for the work is £143,000, however Welsh Water requires more detailed site layout details for further analysis.

ELECTRICITY

10.11 Correspondence with EON Central Networks was undertaken to determine the location and capacity of existing electrical service networks.

10.12 Infrastructure reinforcement to supply the new development was investigated. The possibility of disruption to existing EON services as a result of construction was researched.

Baseline Conditions

10.13 Electrical Services are supplied to the area by EON Central Networks. There is an existing 11 kv overhead line crossing the development site, therefore there will be some disruption to local mains as a result of construction.

10.14 The supply running across the site is capable of providing supply to the development.

Key Impacts

10.15 The consultees have no issues regarding the impact of the development on the electrical network. The impact of the development on the electrical services is considered moderate.

10.16 EON Central Networks have confirmed that the overhead cables can be grounded to suit the proposed development layouts.

10.17 The impact of the development on utilities provision is substantial because off site reinforcement works are required to provide an electrical supply for this development.

Mitigation Measure

10.18 The grounding of the existing 11kv overhead lines and some upstream reinforcement of the high voltage distribution network will be required to enable a service to the development.

10.19 The budgetary cost for the work is £315,000, however EON Central Networks requires more detailed site layout details for further analysis.

GAS SUPPLY

10.20 Correspondence with the National Grid and Fulcrum were undertaken to determine the location and capacity of existing gas networks. Infrastructure reinforcement to supply the new development was investigated.

10.21 The possibility of disruption to existing gas services as a result of construction was researched.

Baseline Conditions

10.22 Gas Services are supplied to the area by Fulcrum. There is an existing 63mm gas main running along Hampton Park Road. There are no gas mains crossing the site, therefore there will be no disruption to local mains as a result of construction.

10.23 The existing supply in Hampton Park Road is capable of providing a supply to the development.

Key Impacts

10.24 The consultees have no issues on the impact of the development on the gas network.

10.25 The impact of the development on the gas services is negligible and Fulcrum has confirmed that the existing gas supply can serve the proposed development layout.

10.26 The impact on the development as a result of utilities provision is minimal because no off site reinforcement works are required to provide a gas supply for this development.

Mitigation Measures

10.27 Fulcrum have advised that there is no cost to servicing the site, provided the developer provides all work associated with the excavation of trenches for new pipe work and backfills to Fulcrum's specification.

TELECOMMUNICATIONS

10.28 Correspondence with BT was undertaken to determine the location and capacity of existing telecommunications networks.

10.29 Infrastructure reinforcement to supply the new development was investigated. The possibility of disruption to existing telecommunication services as a result of construction was researched.

Baseline Conditions

10.30 Telecommunications are supplied to the area by BT. There are existing apparatus running along Hampton Park Road.

10.31 There are telecommunication apparatus crossing the site, therefore there will be no disruption to local services as a result of construction. The service in Hampton Park Road is capable of serving the development.

Key Impacts

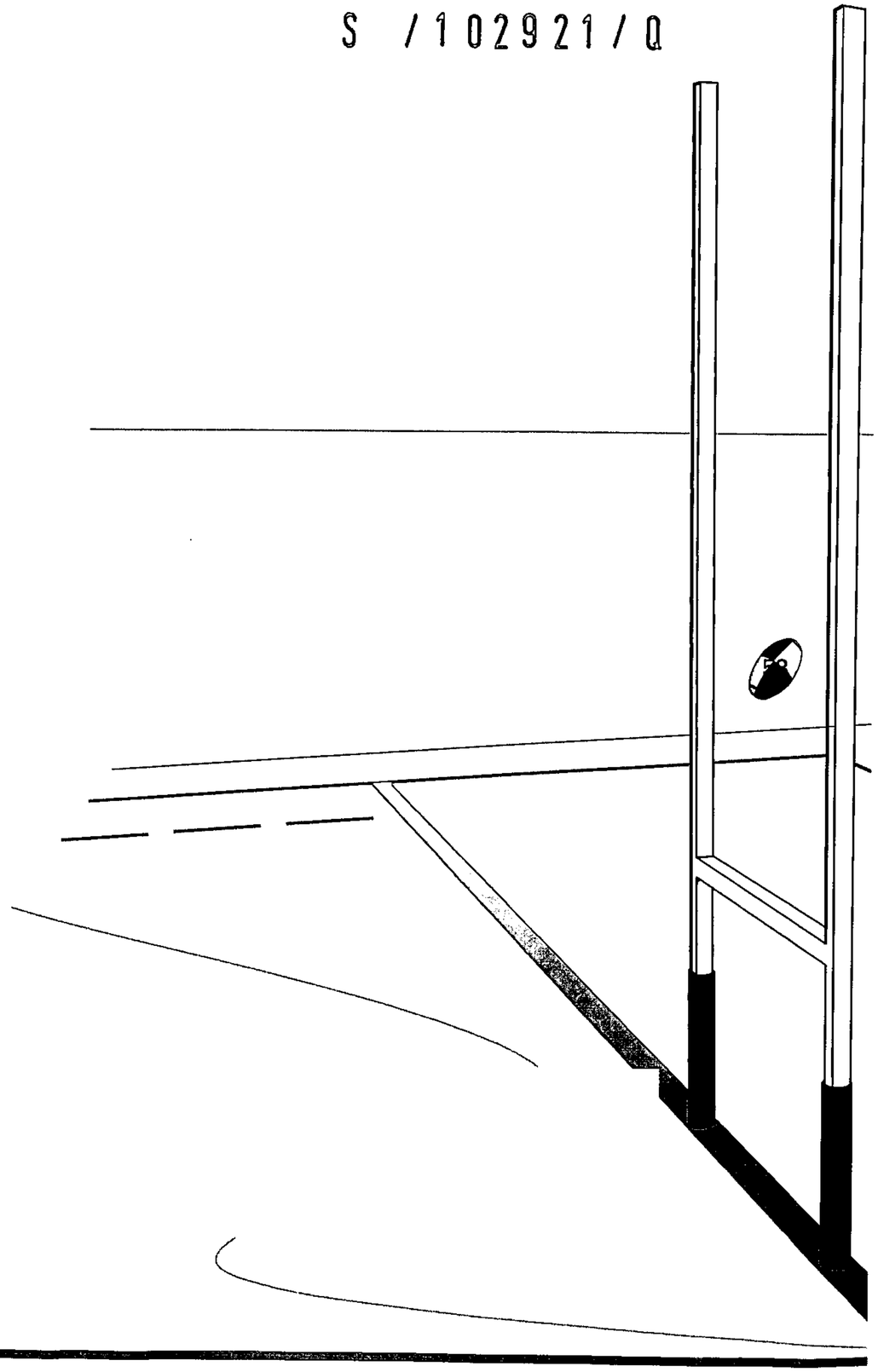
10.32 The consultees have no issues on the impact of the development on the telecommunications network.

10.33 The impact of the development on the existing service is negligible and BT has confirmed that the existing service can serve the proposed development layout.

10.34 The impact on the development as a result of utilities provision is minimal because no off site reinforcement works are required to provide telecommunications to this development.

Mitigation Measures

10.35 BT have advised that there is no cost to servicing the site, provided the developer provides all work associated with the excavation of trenches for new pipe work and backfills to BT's specification.



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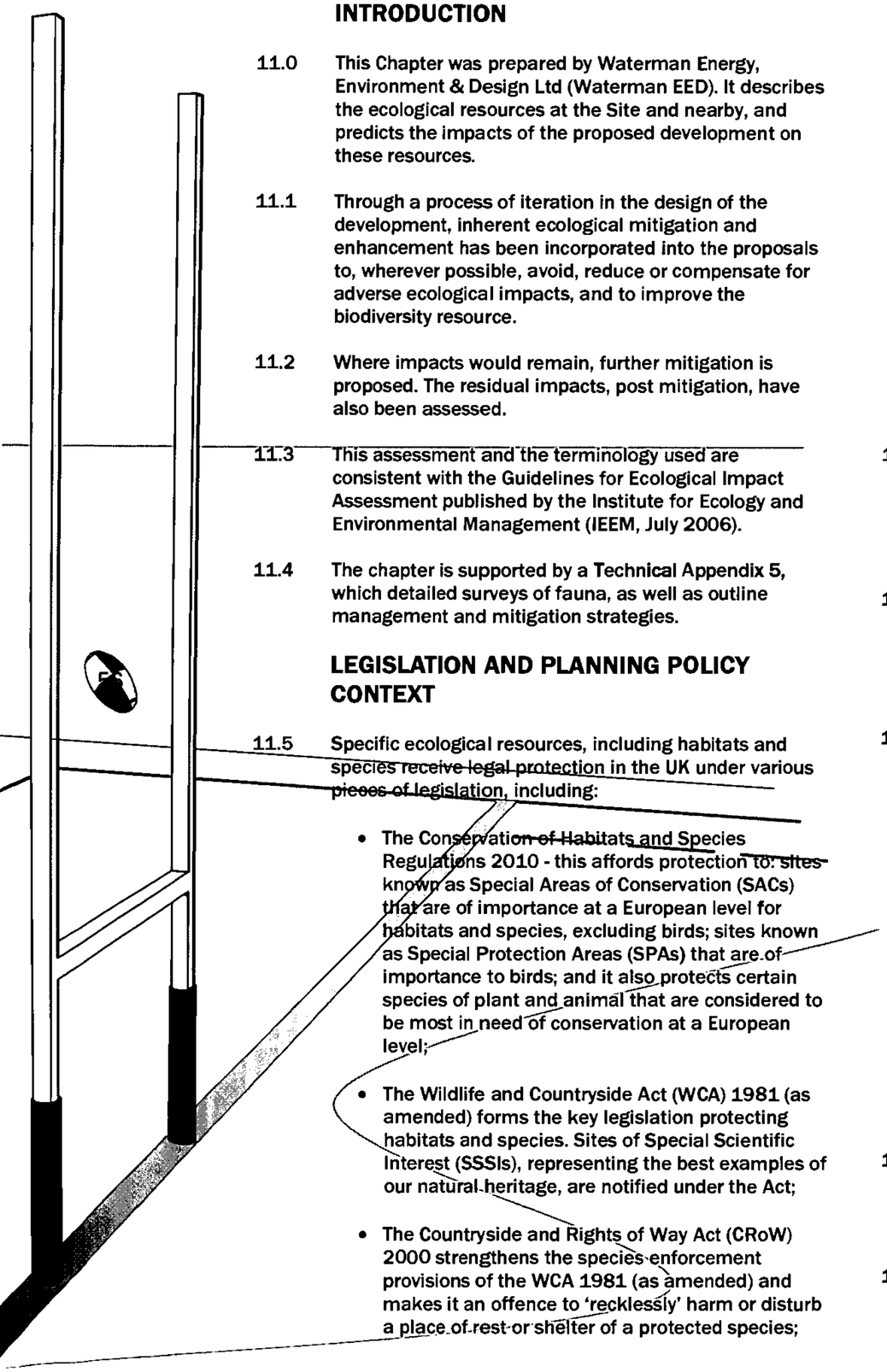

INTRODUCTION

11.0 This Chapter was prepared by Waterman Energy, Environment & Design Ltd (Waterman EED). It describes the ecological resources at the Site and nearby, and predicts the impacts of the proposed development on these resources.

11.1 Through a process of iteration in the design of the development, inherent ecological mitigation and enhancement has been incorporated into the proposals to, wherever possible, avoid, reduce or compensate for adverse ecological impacts, and to improve the biodiversity resource.

11.2 Where impacts would remain, further mitigation is proposed. The residual impacts, post mitigation, have also been assessed.

11.3 This assessment and the terminology used are consistent with the Guidelines for Ecological Impact Assessment published by the Institute for Ecology and Environmental Management (IEEM, July 2006).

11.4 The chapter is supported by a Technical Appendix 5, which detailed surveys of fauna, as well as outline management and mitigation strategies.

LEGISLATION AND PLANNING POLICY CONTEXT

11.5 Specific ecological resources, including habitats and species receive legal protection in the UK under various pieces of legislation, including:

- The Conservation of Habitats and Species Regulations 2010 - this affords protection to: sites known as Special Areas of Conservation (SACs) that are of importance at a European level for habitats and species, excluding birds; sites known as Special Protection Areas (SPAs) that are of importance to birds; and it also protects certain species of plant and animal that are considered to be most in need of conservation at a European level;
- The Wildlife and Countryside Act (WCA) 1981 (as amended) forms the key legislation protecting habitats and species. Sites of Special Scientific Interest (SSSIs), representing the best examples of our natural heritage, are notified under the Act;
- The Countryside and Rights of Way Act (CRoW) 2000 strengthens the species enforcement provisions of the WCA 1981 (as amended) and makes it an offence to 'recklessly' harm or disturb a place of rest or shelter of a protected species;
- The Natural Environment and Rural Communities (NERC) Act 2006 includes a duty on all public authorities, including Local Authorities, to have regard to biodiversity conservation. It adds extra protection to SSSIs. Section 41 protects those Species and Habitats that are of Principal Importance (SOPIs and HAPIs, respectively) for the purpose of conserving biodiversity in England
- The Hedgerows Regulations 1997 protect certain hedgerows that qualify as 'important' under various ecology and historic landscape criteria; and
- The Protection of Badgers Act 1992 aims to protect the species from persecution, rather than being a response to an unfavourable conservation status.

11.6 Where relevant, the assessment takes account of the legislative protection afforded to specific habitats and species.

NATIONAL PLANNING POLICY

11.7 The relevant adopted policy at the national level set out in Planning Policy Statement 9: Biodiversity and Geological Conservation (PPS9) (2005) comprises the Government's guidance on nature (and geological) conservation.

11..8 It sets out the principles for ensuring that the potential impacts of planning decisions on biodiversity and geological conservation are fully considered. These include:

- The need for up-to-date assessments;
- The aim of maintaining and enhancing, restoring or adding to biodiversity and geological conservation interests;
- The need to take a strategic approach to the conservation, enhancement and restoration of biodiversity and geology; and
- Planning decisions should be to prevent harm to biodiversity and geological conservation interests and this may include consideration of mitigation/ compensation measures, implemented where appropriate using planning controls.

11.9 **PPS9** provides guidance on the protection of statutorily designated sites, including international sites, National Nature Reserves (NNRs) and SSSIs, as well as non-statutory regional and local sites.

11.10 **PPS9** also addresses development and wildlife issues outside these sites and seeks to ensure that planning policies minimise any adverse impacts on wildlife.

11.11 **PPS9** places emphasis on local authorities to further the conservation of those HAPIs, or those habitats SOPI, which are identified in Section 41 of the NERC Act 2006.

11.12 **PPS9** requires that opportunities for improving biodiversity within developments should be maximised. It states that development proposals provide many opportunities for building-in beneficial biodiversity features as part of good design and also suggests that networks of natural habitat should be protected and repaired, and the fragmentation and isolation of natural habitats avoided.

LOCAL PLANNING POLICY

Herefordshire Unitary Development Plan (March 2007)

11.13 The Herefordshire Unitary Development Plan (UDP) was adopted on 23 March 2007 will guide development within the county until 2011.

11.14 The following policies, summarised below, are considered relevant to the site:

- **LA5** – which prevents loss or damage to trees, hedgerows, mature traditional orchards or woodlands worthy of retention;
- **NC1** – ensures that wildlife corridors and important ecological features are retained. It also protects priority/protected habitats and species;
- **NC3** – ensures no adverse impact on SSSIs;
- **NC4** – protects local sites of nature conservation interest, through mitigation/compensation schemes if necessary;
- **NC5** – ensures protection of species listed on the WCA, through suitable mitigation/compensation schemes where necessary;**NC6** - protects species listed on the local and national Biodiversity Action Plan (BAP);
- **NC7** – planning conditions should be imposed to provide appropriate mitigation and compensatory measures to avoid, minimise or offset the loss of or damage to any biodiversity feature covered by policies NC2 to NC6;
- **NC8** - the design of new development should include enhancements for biodiversity within the Site and/or on a landscape scale and contribute towards Herefordshire BAP; and
- **NC9** - where compensation is provided in accordance with policy NC7, management and monitoring of those features concerned is required.

11.15 The Herefordshire Conservation Section of Herefordshire Council Planning Department prepared a Biodiversity Supplementary Planning Guidance document in 2004 (and updated in 2009) in order to supplement the policies and proposals in the Herefordshire UDP. It outlines six main objectives for development proposals,

which are:

- Survey and appraise a site's biodiversity interest and linkages with habitat outside the site;
- Retain and protect existing habitats and species;
- Mitigate to reduce adverse effects;
- Compensate with new features to offset any unavoidable losses or adverse effects (although this is highlighted as the least favourable option);
- Enhance and create habitats while taking account of BAP targets and restoring linkages between habitats and protected sites; and
- Monitor the measures and adapt where necessary.

Biodiversity Action Plans

11.16 In response to The Convention on Biological Diversity (1992), the UK BAP was published in 1994 to guide national strategy for the conservation of biodiversity through Species Action Plans (SAPs) and Habitat Action Plans (HAPs), which set conservation targets and objectives.

11.17 Most areas now possess a Local BAP (LBAP) to complement the national strategy. Biodiversity Action Plans are the key nature conservation initiative in the UK, working at national, regional and local levels. The Site is covered by the Herefordshire BAP.

11.18 Table 11.1 below lists action plans that are considered relevant to the Site and which have been taken account of in this Assessment.

Table 11.1 Biodiversity Action Plans Relevant to the Site

Habitat Action Plans	Species Action Plans
Orchards Woodland Standing open water	Bats

ASSESSMENT METHODOLOGY AND SIGNIFICANCE CRITERIA

Assessment Methodology

Scoping

11.19 A scoping exercise was undertaken in order to determine what ecological resources could be affected by the proposed development. This comprised a review of all existing data with respect to the site and local area, together with preliminary site survey work.

11.20 Herefordshire Biological Records Centre was contacted for species records from within a 2km radius. This organisation holds all relevant biological records for this area.

11.21 Information supplied has, where relevant, been incorporated into the following account with due acknowledgement.

11.22 The Multi-Agency Geographic Information for the Countryside (MAGIC) website was consulted to identify any sites subject to statutory protection under national or European/international nature conservation legislation within 2km and 5km of the Site, respectively.

11.23 In addition, the following published source was consulted:

- The Natural Area profile, as defined by Natural England (NE), to determine the important ecological resources at a regional level. Natural England recognises 120 such Natural Areas, the boundaries of which are derived using the distribution of wildlife and natural features, and on the land use pattern and human history of each area.

11.24 An extended Phase I habitat survey was undertaken in May 2009 to map and evaluate the habitat and dominant flora. Any evidence of, or potential for, protected fauna was also noted as were habitats and land use in adjacent areas, where visible.

11.25 Using this information the Zone of Influence of the proposed Development was defined. It was concluded that the potential ecological impacts are largely confined to the Site itself. However, consideration was given to the following likely significant impacts which may extend beyond the Site:

- Disturbance to ecological resources within hearing range during the construction phase;
- Disturbance to ecological resources within receiving range of dust during the construction phase;
- Pollution of watercourses, notably the River Wye, during construction and operational phases; and
- Disturbance to ecological resources within walking distance of people and pets during the operational phase, notably the River Wye.

Detailed Surveys

11.26 The scope of further detailed work undertaken was defined during the Scoping exercise described above (see Technical Appendix 5).

11.27 Detailed surveys were undertaken between May and September 2009 and include:

- Badger (*Meles meles*);
- Bats;
- Breeding birds (on preliminary scoping visit); and
- Great crested newt.

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11.28 Detailed methodologies and survey findings are set out in Technical Appendix 5 with the findings summarised within this chapter.

Evaluation of Ecological Resources

11.29 The evaluation of habitats and features is made with reference to the EIA guidance by IEEM. This process includes:

- Identifying those ecological features likely to be affected; and
- Evaluating the features to identify those of importance i.e. those which, if their integrity or conservation status were affected, national or local policies (or in some cases legislation) would be triggered.

11.30 The level of value of specific ecological receptors is assigned using a geographic frame of reference using the following terms:

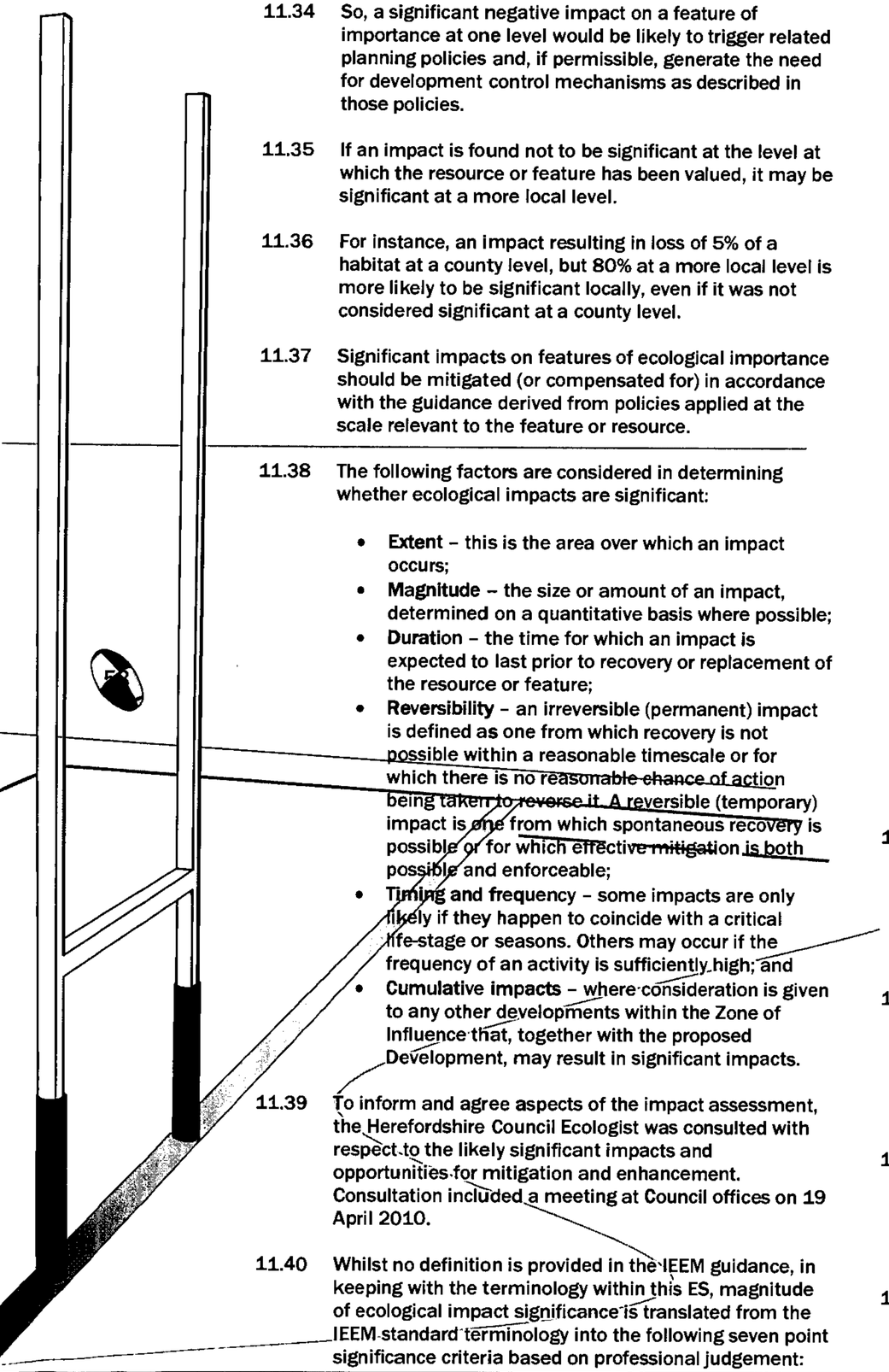
- International;
- UK;
- National;
- Regional;
- County;
- District (or Unitary Authority, City, or Borough);
- Local or Parish; and/or
- Within the Site boundary only.

Impact Assessment and Significance Criteria

11.31 Prediction of the likely significant impacts took into account the different stages and activities within the Development process, and the inherent mitigation built into the proposed Development.

11.32 In accordance with the IEEM guidance and terminology, a significant impact, in ecological terms, is defined as an impact (adverse or beneficial)) on the integrity of a defined site or ecosystem(s) and/or the conservation status of habitats or species within a given geographical area, including cumulative impacts. Insignificant impacts are those that would not result in such changes.

11.33 The value of any feature that would be significantly affected is then used to identify geographical scales at which the impact is significant. This value relates directly to the consequences, in terms of legislation, policy and/or development control at the appropriate level.



11.34 So, a significant negative impact on a feature of importance at one level would be likely to trigger related planning policies and, if permissible, generate the need for development control mechanisms as described in those policies.

11.35 If an impact is found not to be significant at the level at which the resource or feature has been valued, it may be significant at a more local level.

11.36 For instance, an impact resulting in loss of 5% of a habitat at a county level, but 80% at a more local level is more likely to be significant locally, even if it was not considered significant at a county level.

11.37 Significant impacts on features of ecological importance should be mitigated (or compensated for) in accordance with the guidance derived from policies applied at the scale relevant to the feature or resource.

11.38 The following factors are considered in determining whether ecological impacts are significant:

- **Extent** – this is the area over which an impact occurs;
- **Magnitude** – the size or amount of an impact, determined on a quantitative basis where possible;
- **Duration** – the time for which an impact is expected to last prior to recovery or replacement of the resource or feature;
- **Reversibility** – an irreversible (permanent) impact is defined as one from which recovery is not possible within a reasonable timescale or for which there is no reasonable chance of action being taken to reverse it. A reversible (temporary) impact is one from which spontaneous recovery is possible or for which effective mitigation is both possible and enforceable;
- **Timing and frequency** – some impacts are only likely if they happen to coincide with a critical life-stage or seasons. Others may occur if the frequency of an activity is sufficiently high; and
- **Cumulative impacts** – where consideration is given to any other developments within the Zone of Influence that, together with the proposed Development, may result in significant impacts.

11.39 To inform and agree aspects of the impact assessment, the Herefordshire Council Ecologist was consulted with respect to the likely significant impacts and opportunities for mitigation and enhancement. Consultation included a meeting at Council offices on 19 April 2010.

11.40 Whilst no definition is provided in the IEEM guidance, in keeping with the terminology within this ES, magnitude of ecological impact significance is translated from the IEEM standard terminology into the following seven point significance criteria based on professional judgement:

- **Substantial beneficial**: the impact is of a magnitude likely to cause a permanent beneficial impact on the integrity or conservation status of an international and/or nationally important ecological receptor;
- **Moderate beneficial**: the impact is of a magnitude likely to cause a permanent beneficial impact on the integrity or conservation status of a district and/or locally valued ecological receptor;
- **Minor beneficial**: the impact is of a magnitude likely to benefit a district and/or locally valued ecological receptor, but there will be no permanent impact on its integrity or conservation status;
- **Insignificant**: no significant impacts;
- **Minor adverse**: the impact is of a magnitude likely to be adverse to a district and/or locally valued ecological receptor, but there will be no permanent impact on its integrity or conservation status;
- **Moderate adverse**: the impact is of a magnitude likely to cause a permanent adverse impact on the integrity or conservation status of a district and/or locally valued ecological receptor; and
- **Substantial adverse**: the impact is of a magnitude likely to cause a permanent adverse impact on the integrity or conservation status of an international and/or nationally important ecological receptor.

ASSUMPTIONS AND LIMITATIONS

11.41 There are not considered to be any significant limitations to this assessment, since all survey work was undertaken during optimal seasons for the species involved.

BASELINE CONDITIONS

11.42 The following section summarises the existing ecological resources at the Site. Detailed descriptions are provided in Technical Appendix 5. The following Site descriptions should be read in conjunction with Figure 11.1.

Site Context

11.43 The Site is located within Natural Area number 59 'Central Herefordshire'. The area is predominantly lowland in character with isolated flat-topped hills and large blocks of woodland occurring on the more distinct hills and along the river valleys.

11.44 This Natural Area contains the flood plains of the River Wye, River Lugg, River Frome and Arrow (the latter two being major tributaries of the River Lugg).

11.45 The area contains many significant areas of wildlife habitat, with the River Wye being one of the cleanest rivers in Britain.

11.46 The River Wye is known to support populations of mammal, fish and invertebrate species of European Importance.

11.47 Old orchards have declined in Herefordshire and it is thought that the few remaining concentrations provide a rich open woodland habitat with nest holes and deadwood of value to birds and invertebrates.

11.48 The Site is not particularly characteristic of the Natural Area, although it does lie in close proximity to the River Wye Special Area of Conservation (SAC) and Site of Special Scientific Interest (SSSI).

Protected Sites

11.49 There are two statutorily protected sites within 1km of the Site; the River Lugg SSSI which lies approximately 0.75km to the north east; and the River Wye SAC and SSSI which lies approximately 0.45km to the south.

11.50 Owing to the water catchment of the Site, it is considered that only the River Wye SAC/SSSI is likely to be affected by the proposed Development.

11.51 The River Wye is designated under European legislation and is considered to be of international value.

11.52 There are three types of non-statutory sites within the 2km search area termed Herefordshire Nature Trust Reserves (HNTR), Special Wildlife Sites (SWS) and Sites of Importance for Nature Conservation (SINC).

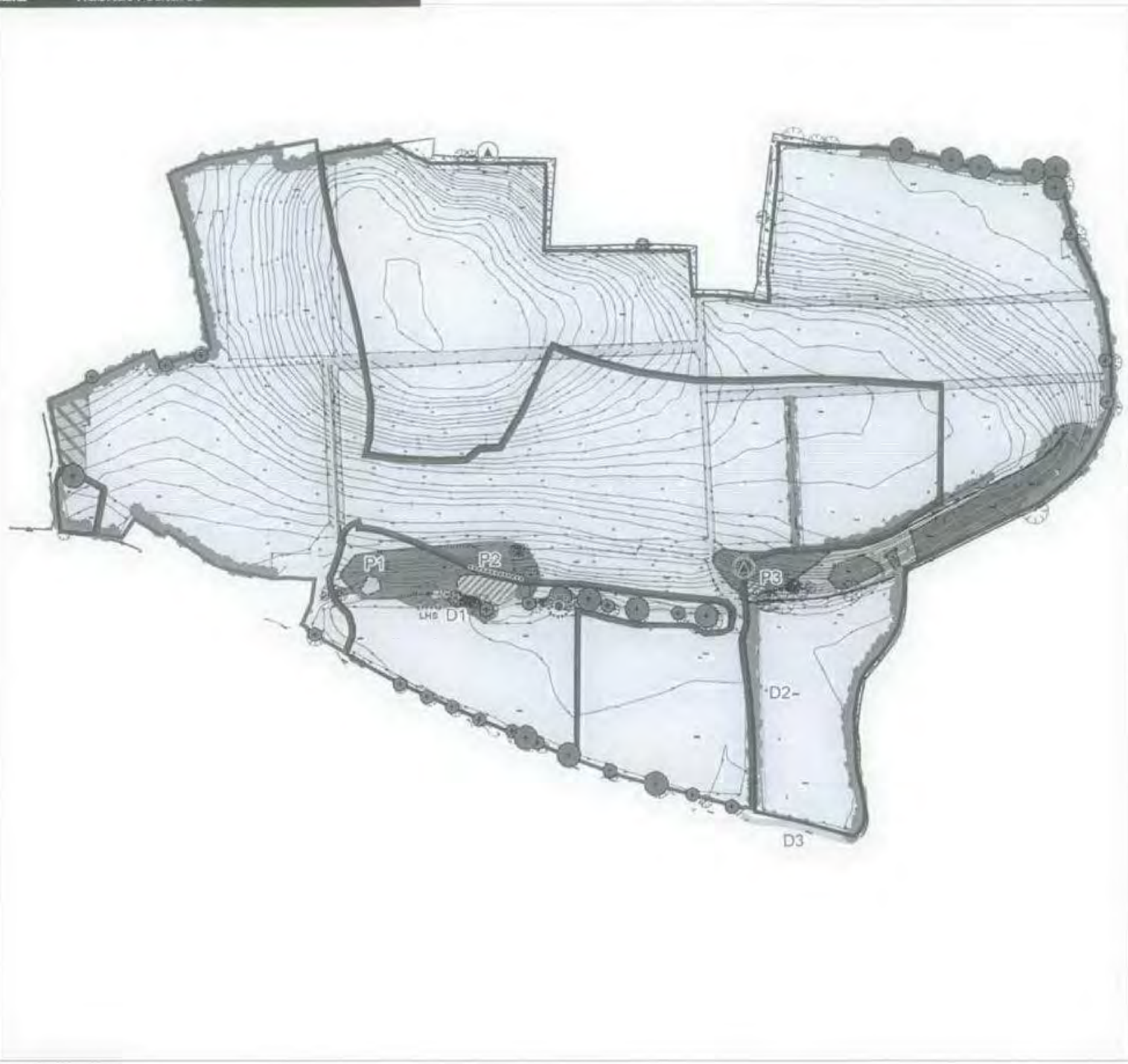
11.53 Herefordshire Nature Trust Reserves are sites owned by Herefordshire Wildlife Trust and often comprise land surrounding SSSIs. Most are open to the public as an educational resource.

11.54 Special Wildlife Sites are considered to be of at least county-level importance for their flora and fauna, or in some specific cases for particular scarce or threatened species.

11.55 Special Wildlife Sites represent the minimum acceptable resource of wildlife habitat (outside legally protected sites) needed to conserve the county's biodiversity. Sites of Importance for Nature Conservation are equivalent to SWSs but occur only within the city of Hereford.

11.56 Land North of Hampton Park Road SINC lies immediately adjacent to the west of Holywell Gutter Lane and there is potential for significant impacts to this Site as part of the proposed Development. No details on the designation of this Site are available.

Figure 11.1 Habitat Features



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- Boundary of planning application
- Boundary of client's land ownership
- Orchard
- Broad-leaved woodland
- Semi-improved grassland
- Coniferous plantation
- Scrub
- Hedgerow (species poor)
- Coniferous tree line
- Tree
- Pond
- Ditch
- Track

Protected Species Issues:

- Pond with great crested newts
- Main badger sett
- Badger tracks/foraging evidence
- Soprano pipistrelle bat mating roost
- LHS Lesser horseshoe bat pass

N

0 100m

Project Details	Holywell Gutter Lane, Hereford
Scale	As shown (approximate)
Drawing Ref	E1420SC/13d
Date	June 2010
Checked	RB/MP

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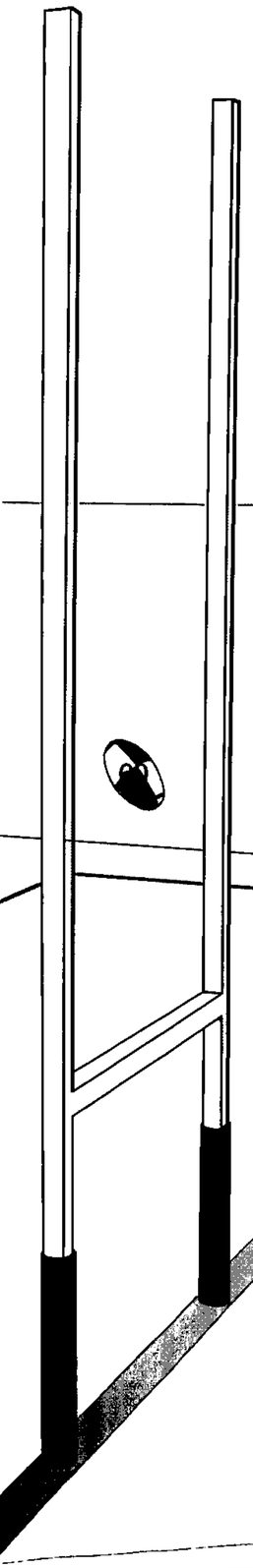

11.57 Lugg Meadows HNTR is located approximately 0.48km to the north east of the Site. However, given the catchment of the Site, it is unlikely that this Site would be affected by the proposed Development.

11.58 County Wildlife Sites are recognised as being of ecological importance at a county level, and therefore these are considered to be of county value.

Habitats

11.59 The majority of the Site comprises a commercial apple orchard, which is subject to relatively high disturbance throughout the growing season as a result of regular mowing and insecticide use.

11.60 A central woodland belt runs across the Site in an east-west orientation and this appears to be free of regular disturbance.

11.61 The habitats within the site are illustrated on **Figure 11.1**. Each habitat is described in more detail and evaluated below, with survey findings, species compositions and habitat structure described in depth in **Technical Appendix 5.**

Orchard

11.72 The orchard is currently of no more than local value, given that it is intensively managed through regular pesticide spraying and mowing.

11.73 Traditionally managed orchards, such as Land North of Hampton Park Road ~~SINC~~, which is located approximately ~~780~~ m to the west of the Site, are often grazed and result in diverse plant communities, ~~hence~~ their inclusion within ~~the Herefordshire~~ BAP.

11.74 Whilst not traditionally managed, the orchard at the Site does provide habitat for a number of common bird species and foraging habitat for bats on the edge of an urban area. It also provides a buffer between Hereford's urban area and the wider landscape.

Broadleaved Woodland (including semi-improved grassland)

11.75 The woodland belt is largely a plantation, and in the western end contains a high proportion of non-native species.

11.76 To the eastern end, while the species composition is more natural, the man-made origins of the woodland are quite obvious e.g. in the regular spacing of trees and there are very few mature and over-mature trees.

11.77 The woodland does not reflect a natural structure, with a sparse and species poor understorey, together with a species poor ground flora dominated by ruderal species.

11.78 The small woodland ride, comprising an area of semi-improved grassland, provides a natural edge to part of the woodland. The woodland belt provides a movement corridor for a number of species and provides connectivity across the site. It is considered to be of local value.

Scrub

11.79 The patches of scrub comprise common and widespread species, such has dogwood *Cornus sanguinea*, bramble *Rubus fruticosus* agg, hawthorn *Crataegus monogyna* which are easily and relatively quickly, replaceable. They are therefore considered to be of negligible value and are not considered further in this assessment.

Tall Ruderal

11.80 The patches of tall ruderal vegetation, dominated by rosebay willowherb *Chamerion angustifolium*, are scattered across the Site, adjacent to the hedgerows and ditches.

11.81 They are currently preventing the existence of diverse woodland ground flora species associated with hedgerows and are subject to regular spraying. As such, they are of negligible value and are not considered further in this assessment.

Hedgerows

11.82 The hedgerows within the Site are not species rich and do not come anywhere near meeting the ecological criteria for important hedgerows as defined in the Habitats Regulations.

11.83 The more natural hedgerows are dominated by hawthorn and blackthorn *Prunus spinosa*, with few standard trees.

11.84 Whilst the north and western boundary hedgerows have been allowed to develop a busy structure, on the whole, they are managed fairly intensively, with evidence of pesticide spraying present along those within the centre of the Site.

11.85 On account of this managed nature and sparse nature along the road, they are considered to be of negligible value.

Standing Water

11.86 At least two of the ponds appear to be man-made, with a regular shape and, in one case, steep sided banks. It is unclear if the ponds are ground water fed, but the largest, central pond is certainly becoming over-silted.

11.87 Typical aquatic vegetation is present in all ponds, albeit to different extents, with common duckweed *Lemna minor*, reedmace *Typha latifolia* and yellow flag *Iris pseudacorus* being the dominant species.

11.88 The ponds appear to be permanent and are unlikely to regular dry out at present. The ditches present on Site appear to be temporarily wet and would be expected to dry up on an annual basis.

11.89 There was little marginal vegetation, although plants preferring damp soil conditions were present in places such as greater willowherb *Epilobium hirsutum*, water horsetail *Equisetum fluviatile* and reed-canary grass *Phalaris arundinacea*.

11.90 At present chemical residue is visible on the aquatic vegetation and it is assumed that this is due to orchard spraying and is likely to be adversely affecting the existing water quality.

11.91 The ponds and the ditches that connect them are considered to be of local value, given that they provide connectivity across the Site and are likely to support numerous common invertebrate species as well as great crested newts.

Hardstanding/Bare Ground

11.92 The tracks across the Site are compacted and do not provide any notable opportunities for flora and fauna. They are of negligible value and are not considered further in this assessment.

Fauna

11.93 A summary of survey findings is now provided – full details are provided In **Technical Appendix 5.**

Badgers

11.94 Two badger main setts are present at the Site. One sett of at least 10 holes lies along the northern boundary of the Site within a patch of scrubby woodland, with outlier holes extending east and west along the hedge which forms the northern site boundary.

11..95 A second main sett containing at least eight holes is present within the woodland belt immediately to the north of Pond 3 and two outlier holes are present to the east of this pond.

11.96 A strong badger track and foraging activity was recorded adjacent to Pond 2 and it is likely that badgers forage across the majority of the Site. The main setts are approximately 550m apart, which is unusually close for two separate clans.

11.97 Badgers are common and widespread throughout the UK and there are several records for the local area. The badger clans using the Site is therefore considered to be of negligible ecological value.

11.98 However, badgers and their setts are legally protected and future development would need to ensure that appropriate avoidance or mitigation measures are taken.

Bats

11.99 One soprano pipstrelle *Pipistrellus pygmaeus* mating roost was recorded within a tree along the south of the woodland belt. No other roosts were recorded within the Site.

11.100 Strategic activity sampling of the Site concluded:

- Six bat species were recorded on the site during the activity surveys, including common pipistrelle, soprano pipistrelle, myotis species (likely to be Daubenton's bat), serotine, noctule and lesser horseshoe;
- Activity was relatively low across the majority of the Site, with soprano pipistrelle being the most frequently recorded species. No significant seasonal differences were recorded in levels of activity across the Site;
- The highest levels of activity were recorded along the central woodland belt, although the number of species using this habitat was no higher than elsewhere in the Site;
- Noctules and serotines were detected foraging within the central section of the Site although few passes were recorded overall;
- Myotis bats, likely to be Daubenton's bats, were recorded foraging in the vicinity of the ponds on every survey, albeit in low numbers, with a maximum number of 17 passes in a single night;
- Bat passes were recorded throughout the night, with the highest activity for the first few hours after sunset. Activity levels were not sufficiently high immediately after sunset to suggest the presence of a significant roost within the Site;
- Records of all of these species, with the exception of serotine, were returned by the records centre, with roosts known from within 2km of the Site; and
- It is possible that whiskered/Brandts bats were also recorded on the Site, although this was not identified with certainty.

11.101 A number of species were found to be using the Site, although not in particularly significant numbers. The species populations differ in value, but overall, the bat assemblage using the Site is considered to be of no more than local value.

Birds

11.102 The level of activity recorded at the Site was low and mainly comprised common and widespread species, species of note include linnet *Carduelis cannabina*, bullfinch *Pyrrhula pyrrhula* and song thrush *Turdus philomelos*, which are all been placed on the UK BAP as a result of significant declines in their populations in recent years.

11.103 Based on the initial survey and the habitat management on Site, the populations of these species at the Site appeared to be low.

11.104 It is likely that the intensive management at the Site has reduced and is currently preventing the development of a diverse bird assemblage, which might be expected in an orchard site of this size were it managed using traditional methods.

11.105 Two species listed on the Birds of Conservation Concern (BoCC) Red list were present at the Site:

- Song thrush; and
- Common linnet.

11.106 Four species listed on the BoCC Amber list were present at the Site:

- Hedge accentor *Prunella modularis*;
- Mistle thrush *Turdus viscivorus*;
- Common whitethroat *Sylvia communis*; and
- Common bullfinch.

11.107 The Site primarily supports an assemblage of common and widespread species including some species of conservation concern.

11.108 However, the habitats within the Site are not considered likely to be important in maintaining any of the BoCC amber list species. The assemblage within the Site is considered to be of value within the Site boundary only.

Great Crested Newts

11.109 The great crested newt survey recorded a small population at the Site, with breeding confirmed in Pond 3 and likely in Pond 2.

11.110 The population within the Site is potentially part of a meta-population and it is possible that some individuals between the Site population and the population to the north of the Site may be exchanged.

11.111 Given the population is small, it is unlikely that the orchard is used to a large extent, although the possibility of foraging within this habitat cannot be ruled out. The population using the site is considered to be of local ecological value.

11.112 No other legally protected species or those of conservation importance were identified within the Zone of Influence of the proposed Development.

Summary Evaluation of Ecological Resources

11.113 Table 11.2 summarises the value of ecological resources, and where relevant the legal and policy protection within the relevant Local Plan.

IMPACT ASSESSMENT

11.114 The likely significant impacts - and how the proposals have been designed to mitigate these - are described below. Where measures have been designed into the scheme, these have been included in the initial impact assessment (in accordance with IEEM guidelines).

11.115 In some instances additional mitigation is required to reduce impacts to insignificant levels. Where additional mitigation has been necessary then this is summarised in the following mitigation section. Impacts that are not likely to be significant are also described.

11.116 In general terms, the design of the Masterplan has adopted the following biodiversity design principles:

- Restricting development, wherever possible, to habitat of negligible value, with retention and protection of habitats of identified value, either because of their inherent biodiversity importance, or because of the role they play in supporting fauna of value;
- Retention or creation of a mosaic of habitats currently represented within the Site, and/or in line with published conservation strategies such as the LBAPs, to encourage flora and fauna of conservation importance;
- Maintenance or creation of an interconnected network of wildlife habitats to enable movement of mobile fauna within the Site and beyond; and
- Creation of accessible natural greenspace for new residents of the development, whilst maintaining areas whose primary function is to conserve or promote biodiversity.

11.117 Central to the success of the strategy is the implementation of an Ecological Management Plan (EcMP), an outline of which is provided in Technical Appendix 5.

11.118 The EcMP sets out objectives to maximise the biodiversity potential of retained and new habitats, with prescriptions to achieve these objectives. Reference is now made to aspects of the EcMP as appropriate.

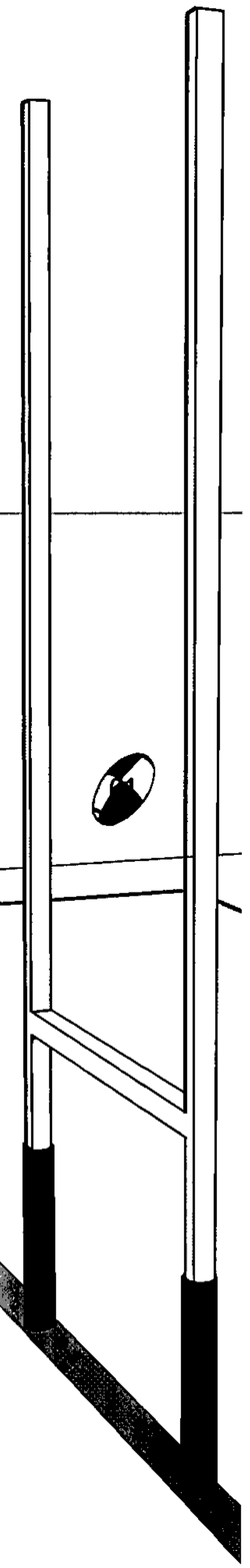

Table 11.2. Summary of Value of Ecological Resources. Legal Protection Under Primary Legislation and the Herefordshire Unitary Development Plan is Also Shown (Habitats Regs refers to the Conservation (Natural Habitats, &c.) Regulations 2010)

Ecological Resource	Value	Protected Status
River Wye SAC/SSSI	International	NC4
Land North of Hampton Park Road	County	Policy E11
Orchard	No more than Local	Policy E11
Woodland	Local	Policy LA5
Scrub	Negligible	n/a
Tall ruderal	Negligible	n/a
Hedgerow	Negligible	n/a
Standing water	Local	Policy NC1
Arable	Negligible	n/a
Hardstanding/bare ground	Negligible	n/a
Badger	Negligible	Protection of Badgers Act
Bats	No more than Local	WCA (as amended) and Habitats Regs; Policy NC5
Birds	Site	WCA (as amended) (whilst nesting); Policy NC5 and NC6 (where applicable)
Great crested newts	Local	WCA (as amended) and Habitats Regs; Policy NC5

Construction Phase

Impacts to Designated Sites

11.119 Impacts to the River Wye SAC are being addressed separately through the Appropriate Assessment (AA) process. Therefore, whilst an overview is provided in this assessment, all impacts will be dealt with in more detail by Hereford Council through the AA process.

11.120 The River Wye SAC/SSSI is designated on account of both the habitat and key species that it supports, including lamprey species, salmon and otter.

11.121 The proposed Development is sufficiently removed from the SAC to prevent any significant impacts to the habitat. However, numerous species are dependent on excellent water quality.

11.122 The hydraulic gradient across the Site falls to the south towards the River Wye, showing connectivity between the Site and the SAC.

11.123 It is therefore likely that any localised changes to the ground water table beneath the Site or close by would result in changes to the hydrological regime within the SAC.

11.124 There is also possibility of polluted/highly sedimented run-off throughout construction. In the absence of mitigation this is likely to result in moderate significance.

11.125 Whilst impacting a feature of international importance, the distance of the Site from the SAC means that there will be no positive increase in run-off and any impacts are therefore likely to be localised the stretch of the Wye in close proximity to the Site (See Chapter 9 of this ES), paragraphs 9.39 and 9.51).

11.126 There are a number of non-statutorily protected wildlife sites close to the Site, but owing to the distances involved and the topography of the land affecting the drainage catchments, only one – Land North of Hampton Park Road - is considered to be within the potential Zone of Influence of the proposed Development.

11.127 The next nearest Site, Lugg Meadows HNTR, lies within the River Lugg catchment area to the north of the Site.

11.128 The proposed Development will fall entirely within the River Wye catchment so no impacts on the River Lugg catchment or Lugg Meadows are anticipated. Impacts to other wildlife sites, if detectable at all, are considered to be insignificant.

11.129 Hampton Park Road SINC lies approximately 20m to the west of the Site adjacent to the west of Holywell Gutter Lane.

11.130 The reason for designation remains unknown, but no particularly rare species have been returned within the data search.

11.131 It is assumed that this Site supports semi-natural habitats within an urban setting and may support populations of a range of relatively common and widespread species.

11.132 It is unlikely that the HNTR is dependent on the Site for maintaining its interest and therefore the proposed Development is unlikely to directly impact on the HNTR.

11.133 There is the potential for indirect impacts to the HNTR during the construction phase, such as increased noise, dust deposition and vibration. Such impacts would be mitigated to an acceptable level or avoided altogether by adhering to good working practices, as set out the Waste and Construction Management Plan Framework.

Impacts on Habitats

11.134 Some existing habitat of ecological value would be lost to the development. Figure 11.2 illustrates the areas of habitat which will be lost, together with retained and newly created habitat.

11.135 More detail with respect to impacts and how these can be mitigated is provided below.

Orchard

11.136 Some areas of orchard habitat, of no more than local value, would be lost as a result of the development. However all retained orchard will be subject to an organic management regime in accordance with traditional management practices, and of this approximately 4.15 Ha managed specifically for great crested newts (as set out below).

11.137 Overall, whilst the area of orchard that will be enhanced is more than equivalent in terms of areas than that which is to be lost.

11.138 Taken on its own, the loss of approximately 45% of the orchard would be considered to reduce the ecological value of the habitat.

11.139 However, the traditional management of the remaining 55% of orchard (approximately 25.8 Ha), which will be delivered as part of this proposed Development will ensure that: existing populations of species are retained and increase; the habitat is capable of supporting more diverse assemblages of species groups; and that connectivity across the Site is greater than that currently exists.

11.140 This commitment to traditional and organic management of the orchard will contribute towards halting and reversing the decline of orchards within Herefordshire and nationally.

11.141 Attention will be paid to ensuring a traditional structure, which will include allowing a natural ground flora to develop.

11.142 An outline of management practices and aims are included within the Outline Management Plan at Technical Appendix 5.

11.143 Benefits resulting from the cessation of pesticides are likely to be realised in the short with major significant ecological impacts predicted for the medium to long term.

11.144 In the long term it is predicted that, with correct ongoing management, the orchard could be of district-county ecological value.

Broadleaved Woodland

11.145 All the woodland is to be retained within the proposed development. In addition, and in accordance with the objectives of the local BAP, further tree planting is proposed in the vicinity of the infiltration basin in order to enhance connectivity to offsite habitats.

11.146 As woodland will take many years to mature, there will be an insignificant impact in the short term.

11.147 No clearance will be required throughout construction, although management will begin immediately. Initial enhancements and management operations will include erection of bird and bat boxes, removal of non-native tree/shrub species and targeted felling/thinning.

11.148 As management will be ongoing as part of the Ecological Management Plan (EcMP), the resulting enhancements are dealt with under 'Operation Phase' below.

11.149 The value of the existing woodland could be reduced through disturbance impacts during construction, such as through uncontrolled vehicle movements and storage of materials, deposition of dust and pollution.

11.150 The impacts will be avoided through the use of site best practice as set out in Waste and Construction Management Plan Framework. Impacts would therefore be insignificant.

Hedgerows

11.151 There are relatively few hedgerows within the Site, with the only hedgerows any ecological interest (owing mainly to foraging habitat for bats) being the northern and western boundary hedgerows.

11.152 These hedgerows will be retained and in some places strengthened with additional landscape planting. Throughout construction, the retained hedgerows will be protected by appropriate fencing to ensure that they would not be degraded during the construction phase.

11.153 The only hedgerow losses will be the existing small sections of non-native Leyland cypress planting. Any hedgerow planting required within the residential and amenity areas and areas of open space will comprise native species of local provenance.

11.154 Overall the impacts on the hedgerow network within the Site are likely to be insignificant.

Standing Water

11.155 The design of the proposed development has avoided the loss of any ponds within the Site. However, there is potential for adverse impacts arising from construction, such as pollution/dust deposition impacts adversely affecting water quality, to affect the ponds and associated ditches.

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11.156 As stated in Chapter 9 of this ES, such effects would be avoided by adhering to Environment Agency pollution prevention guidance during construction.

11.157 Owing to the change to organic management of the retained orchard, the ponds are no longer likely to be affected by pesticide spraying.

11.158 An infiltration basin will be created as part of the SuDS strategy for the Site. Whilst this is designed primarily to accommodate surface water run-off, the area of the infiltration basin will be divided between a minimum of two ponds, with as many ponds created as is feasible.

11.159 Whilst many balancing ponds are often designed to be wet only temporarily, the new infiltration basin will create permanently damp/boggy habitat, which will support the ponds existing with the Site.

11.160 Whilst precise details on the number and sizes of each 'pond' forming the infiltration basin has yet to be confirmed, the maximum effective depth will be 1m, with shallow sided banks, with a gradient of 1 in 4.

11.161 Boggy and damp habitats will take several years to mature and, as such, there will be no significant beneficial impact in the short term. However, over the medium to long term, a minor beneficial impact is predicted.

Other

11.162 Impacts to the remainder of habitats within the Site are considered to be non-significant owing to the ecological resource of negligible value that they support. Such habitats are not considered further in this assessment.

Impacts on Fauna

Badgers

11.163 The badger sett along the northern hedgerow boundary is located more than 50mfrom the construction zone and is therefore not likely to be affected by disturbance or damage as a result of construction activities.

11.164 The main sett within the central woodland belt is likely to be disturbed as a result of construction activities, which will be within 30m of the sett.

11.165 Whilst this does not constitute a significant impact in terms of ecological value (owing to the negligible ecological value of the badger population), mitigation will be required in order to ensure legislative compliance.

11.166 There would be a loss of some sub-optimal badger

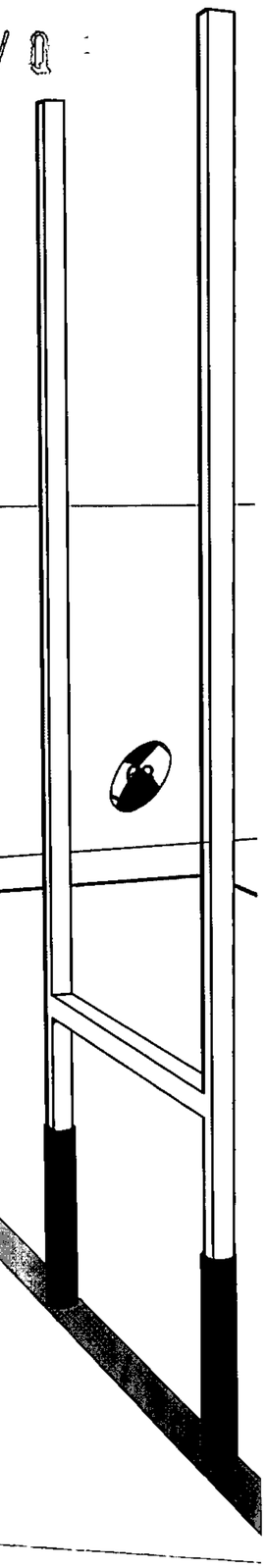
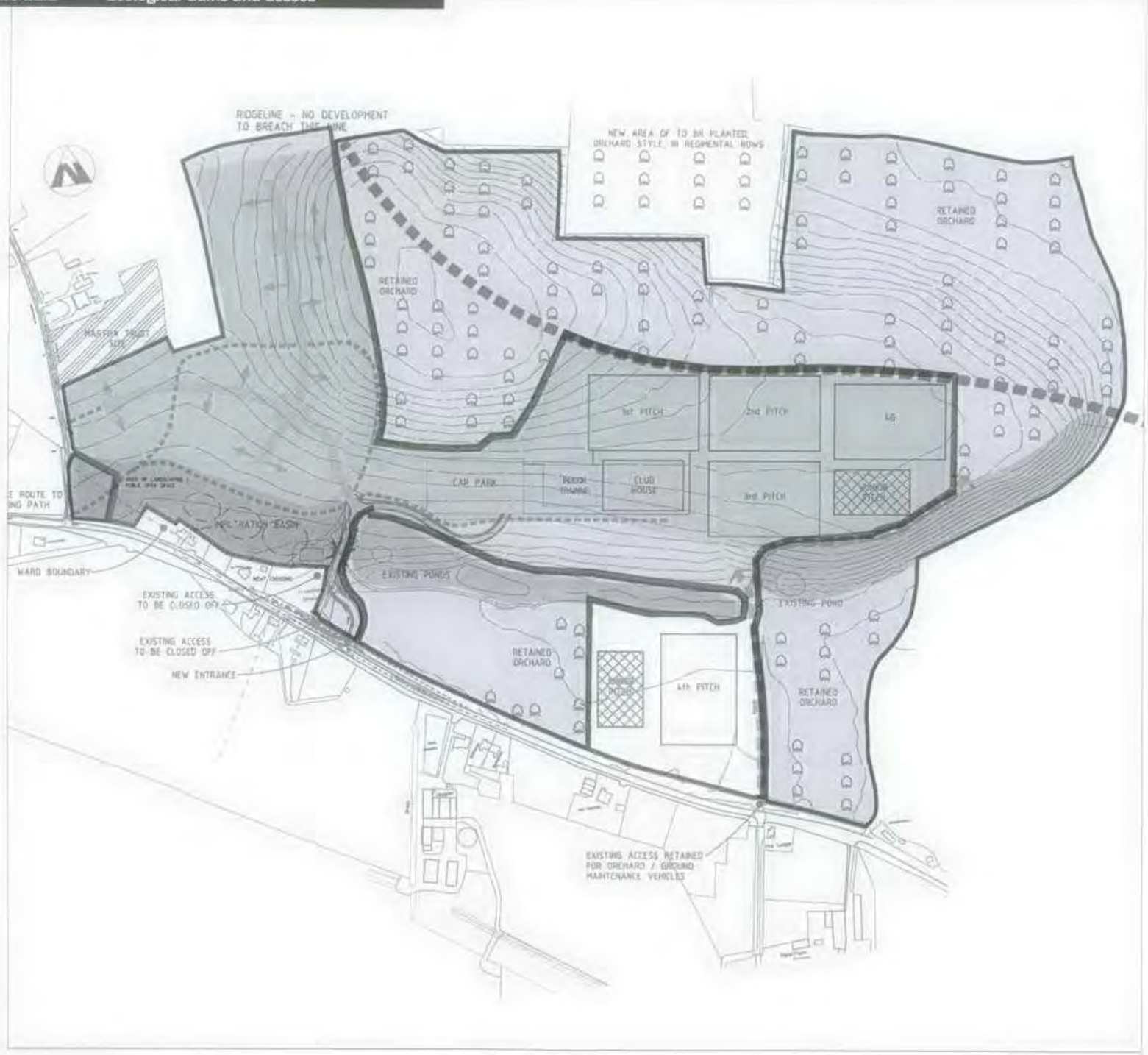


Figure 11.2 Ecological Gains and Losses



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Project Details	Holywell Gutter Lane, Hereford
Scale	As shown (approximate)
Drawing Ref	E1420SC/16a
Data	June 2010
Checked	RB/IP

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Energy, Environment and Design

foraging habitat in the form of orchard as a result of construction activities.

11.167 This would be offset to some extent in the short term through the creation of higher quality foraging areas, including amenity grassland, which would provide a good source of earthworms, their preferred food.

11.168 The proposed Development would create new roads in the southwest corner of the Site. The roads will be within a residential area, with restricted speed limits and are therefore unlikely to result in increased badger mortality, and therefore impacts are considered to be non-significant.

Bats

11.169 The development will result in the loss of large areas of suboptimal foraging habitat (orchard) and very minor losses in good quality foraging habitat (scrub and hedgerow) for bats.

11.170 No roosts or commuting routes will be affected by the development.

11.171 The new dwellings at the site are likely to increase the roost opportunities for several species of bat and garden and landscaping within areas of open space are likely to provide foraging habitat of equivalent value to the orchard in its current state, albeit of a lesser extent.

11.172 The retained orchard will remain unlit and managed through traditional practices to maximise biodiversity.

11.173 Whilst this habitat will take a number of years to reach its maximum value, it will deliver a minor beneficial impact to the local bat population over the medium to long term.

11.174 Woodland thinning and cessation in pesticide use in the orchard adjacent to the south of the woodland belt are likely to significantly increase the foraging potential of these retained habitats.

11.175 Best practice measures as described in the Mitigation section below will be employed to restrict impacts to bats throughout construction.

11.176 All retained habitats will be suitably fenced from activity, where necessary, and all construction works will be undertaken during daylight hours, with no lighting used at night.

11.177 Overall the cessation of pesticide use and traditional management of the retained orchard is considered to more than counteract the potentially negative impact of orchard loss, resulting in insignificant impacts during the construction phase.

Birds

11.178 Clearance of scrub, orchard and hedgerows has the potential to disturb nesting birds in the short term (during construction).

11.179 The loss of large areas of suboptimal orchard habitats and smaller areas of optimal scrub and hedgerow habitat for bird is considered likely to have a minor adverse impact (albeit non-significant) over the longer term, however, this would be more than compensated for, primarily through traditional and organic management of the orchard, resulting in an overall minor beneficial impact at the occupation phase.

11.180 Since construction is likely to extend over many months, it is likely that some activity will take place during the breeding bird season, when birds are nesting.

11.181 Mitigation as described in the Mitigation section below will be necessary to ensure that nesting birds are unaffected throughout construction, although this is a matter of legislative compliance only.

Great Crested Newts

11.182 The proposed Development would not result in the loss of any ponds. Instead, it will deliver the provision of at least one additional pond, as part of the SuDS scheme.

11.183 If possible, the infiltration basin will comprise numerous small ponds and, since such waterbodies are prone to extensive drying, measures will be taken to ensure that at least one of these will be wet throughout the year.

11.184 There will be specific enhancements to the existing ponds through dredging of existing leaf litter and removal of encroaching marginal vegetation and overhanging trees.

11.185 Such enhancements will commence as part of the construction phase, in order to ensure that benefits begin to be realised prior to occupation of the proposed Development.

11.186 The proposed Development would result in the loss of large areas of suboptimal terrestrial habitat. However, the traditional management of the retained orchard will more than compensate for this loss, particularly since the retained orchard will provide increased connectivity to off Site ponds.

11.187 Whilst existing use of the orchard by great crested newts is likely to be minimal/negligible owing to the extremely small population present, the management of approximately 4.15 Ha of orchard for great crested newts, and the traditional management of the remainder, is likely to ensure that the population can increase in the long term.

11.188 The proposed development will result in the construction of new roads in the south-west of the Site, which have the potential to cause increased great crested newt mortality.

11.189 However, a suitably designed underpass, together with associated ditches has been designed to minimise this risk.

11.190 As the existing newt population is small, this risk is considered minimal; however, in order to allow the expansion of the population and encourage use of the new waterbodies, the underpass will ensure that this is possible.

11.191 The clearance of the construction zone and construction operations have the potential to kill injure and disturb great crested newts that may be present.

11.192 A detailed mitigation strategy has been designed to prevent the reasonable possibility of this occurrence, which would constitute a breach of UK and European Law, and the works will be undertaken under licence from Natural England.

11.193 Further detail is provided in the Combined Mitigation Strategy in Technical Appendix 5.

11.194 Overall there is likely to be an insignificant to minor beneficial impact over the long term.

Occupation Phase

Designated Sites

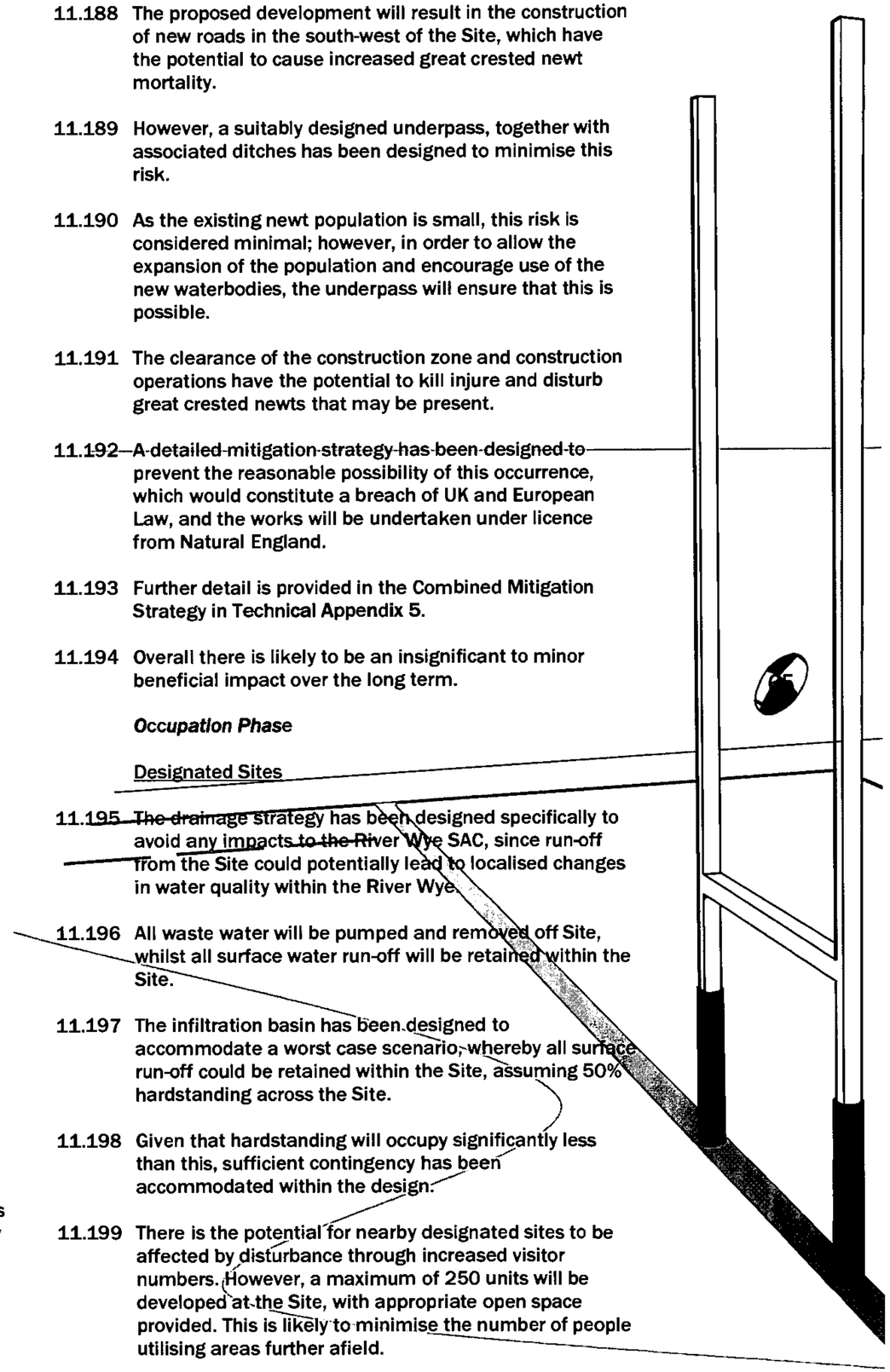
11.195 The drainage strategy has been designed specifically to avoid any impacts to the River Wye SAC, since run-off from the Site could potentially lead to localised changes in water quality within the River Wye.

11.196 All waste water will be pumped and removed off Site, whilst all surface water run-off will be retained within the Site.

11.197 The infiltration basin has been designed to accommodate a worst case scenario, whereby all surface run-off could be retained within the Site, assuming 50% hardstanding across the Site.

11.198 Given that hardstanding will occupy significantly less than this, sufficient contingency has been accommodated within the design.

11.199 There is the potential for nearby designated sites to be affected by disturbance through increased visitor numbers. However, a maximum of 250 units will be developed at the Site, with appropriate open space provided. This is likely to minimise the number of people utilising areas further afield.



11.200 Disturbance to otter as a result of increased recreation along the existing Wye footpath is the likely disturbance impact to the River Wye SAC/SSSI.

11.201 Given the relatively urban nature of the River Wye along this stretch, including its close proximity to Hereford City Centre and existence of a well used public footpath, any additional recreation is likely to constitute an insignificant impact.

11.202 Otter would be expected to travel through this stretch of the Wye but are less likely to breed in the locality if there is regular human disturbance.

11.203 This situation would likely remain unchanged by the addition of additional walkers, but no significant change in type of recreation.

11.204 Land North of Hampton Park Road SINC is located adjacent to an existing housing estate. Whilst there is no detailed information available on the reasons for designation, access arrangements on the Site or usage by local residents, it is likely that this is a relatively urban reserve, which, if access allows, is likely to be used for recreation by local residents.

11.205 Assuming that there is open access to this SINC (a worst case scenario), there is likely to be in an increase in recreation at the SINC as a result of the proposed Development.

11.206 However, given the likely urban nature and degree of existing disturbance, this would likely constitute a insignificant impact.

Habitats

11.207 The existing retained and newly created habitats are to be managed, wholly or partly, to maximise biodiversity. The descriptions below relate to all habitats within the ownership boundary (as illustrated in Figure 11.2).

11.208 The details of this management is included in the Ecological Management Plan (EcMP), presented in **Technical Appendix 5**.

11.209 The value of these habitats is expected to increase over time, for as long as favourable management continues; however, for the purposes of evaluating likely change in ecological value, a period of 10-15 years is used.

Orchards

11.210 All retained orchard, amounting to approximately 25.8 Ha (55% of existing orchard) (see Figure 11.2), will be managed for biodiversity gains. Management will be organic and will replicate traditional management and focus on increasing floral diversity of the underlying grassland, discontinuing the use of chemical sprays and reintroducing traditional tree varieties (where replacement of trees is required) and seasonal grazing.

11.211 It is anticipated that the resulting habitat would be suitable for species listed on the local orchards BAP and owing to its size be of at least district value, representing a major beneficial impact.

Broadleaved Woodland

11.212 An outline management plan for the existing woodland is included at **Technical Appendix 5.**

11.213 In summary, the woodland areas are to be thinned and some of the dead wood retained in log piles. Non-native species of tree and shrub are to be removed and some replanting of native understorey species. The measures are likely to result in a minor beneficial impact.

Hedgerows

11.214 Hedgerows are to be laid followed by cutting on a five year cycle, with grassland bordering hedgerows cut on a similar cycle.

11.215 This is expected to improve the structure and diversity of the hedgerows and improve their value to wildlife. The measures are likely to result in a beneficial impact, albeit insignificant in terms of impact assessment.

Standing Water

11.216 As outlined in the Management Plan included at **Technical Appendix 5**, the ponds are to be managed occasionally to remove encroaching vegetation and overshadowing trees.

11.217 These measures will primarily maintain the initial management carried out during the construction phase and while the ponds are likely to improve over time due to natural colonisation, ongoing management in itself will have a negligible additional impact.

Fauna

Bats

11.218 The development has the potential to result in increased lighting and disturbance from people and domestic pets.

11.219 These impacts are likely to be relatively localised to the north west of the Site, where existing pipistrelle activity was recorded.

11.220 The woodland belt is the area of greatest value to bats and this will be retained. Whilst there will be some additional lighting to the northern edge, the pitches in closest proximity to the woodland belt will remain unlit.

11.221 No pitches will be lit to the south of the woodland belt, which showed the greatest use by bats. It is anticipated that flood lighting could be used year round, although use will primarily be from September onwards.

11.222 Spill from the floodlit pitches (1st, 2nd and 4G) will affect the northern edge of the woodland, although as Lux levels will be no greater than 3.4 in this area (see supporting lighting plans) any impact will be minor.

11.223 The access road onto the Site will remain unlit, although the increase in human/traffic disturbance may potentially impact on bats to a minor degree.

11.234 Given that no significant commuting routes across the Site were established, it is unlikely that this impact will be significant.

11.225 The traditional management of all retained orchard, both of which are to be managed traditionally, is likely to enhance the Site for foraging bats.

11.226 It is anticipated that this will negate any adverse from the removal of commercial orchard, which, whilst offering suboptimal foraging habitat, nevertheless provided resources for the local population.

11.227 The majority of bats using the Site are pipistrelle species which are unlikely to be adversely affected by artificial lighting.

11.228 The myotid and lesser horseshoe bats are more likely to be affected, although these were recorded primarily along the southern edge of the woodland belt, which remains unlit to accommodate them.

11.229 The bat population using the Site is unlikely to be significantly impacted on through the occupation of the Site, with the new measures to increase foraging habitat, roosting opportunities and Site connectivity, predicted to offset any adverse impacts.

11.230 Overall there is likely to be a non-significant, but beneficial impact on the local bat population. In the long term, following several years of traditional management, more species of bats (predominantly species associated with woodlands) may utilise the Site.

Birds

11.231 The development is likely to result in an increase in domestic pets at the site, increasing the disturbance and predation of birds, especially while breeding.

11.232 Impacts are most likely to ground nesting farmland birds, of which there are currently none likely to be present at the site.

11.233 While changes in management may mean that such

species colonise the site, at the current baseline (overall current bird assemblage) this impact is likely to be Insignificant.

Great Crested Newts

11.234 Roads and associated road drains would potentially cause increased newt mortality, which is likely to be the only potential adverse impact affecting newts throughout the occupation of the development.

11.235 However, mitigation in the form of amphibian underpasses under roads within have been recommended in order to maintain habitat connectivity and to reduce road mortality of newts moving between habitats on either side of the roads.

11.236 It is unlikely that great crested newts currently cross the site, since all optimal habitat connects the ponds only.

11.237 The creation of new waterbodies, of which one will hold water throughout the majority of the year (the other(s) will be damp) will provide additional habitat and improve connectivity across the Site.

11.238 A minor beneficial impact is predicted, although this is likely to be insignificant given the small scale of the population present. Mitigation will be required to address the potential adverse impact of the access road.

MITIGATION MEASURES AND RESIDUAL IMPACTS

11.239 Mitigation measures with respect to European protected species are detailed in full in the Combined Mitigation Strategy presented in Technical Appendix 5. A summary of mitigation measures for all ecological resources is provided below.

Designated Sites

11.240 In order to avoid adversely impacting on water quality within the River Wye, best practice guidelines (such as those issued by the Environment Agency) will be adhered to.

11.241 Such guidelines specify how to reduce surface water run-off and contain potentially polluting sources within the Site. Such measures are a standard component of construction work and have proven success.

Habitats

11.242 There are expected to be no significant adverse impacts on habitats as a result of the development. There is therefore no mitigation necessary; however, as outlined above and within the EcMP, enhancement measures are proposed in the form of initial measures at the construction phase and ongoing management.

Badgers

11.243 The main sett within the woodland belt is likely to be disturbed by the construction of the 3rd pitch. Prior to the commencement of development, an update badger survey should be undertaken to confirm the existence and precise location of sett entrances.

11.244 Assuming the sett remains active, a licence from Natural England will be required to close either certain entrances, or the entire sett, as appropriate.

11.245 It is likely that the majority of entrances will be sufficiently far from the construction area that it would be feasible to fence, gate and close a restricted number.

11.246 If necessary, the licence will involve standard measures to close the sett/part of the sett, including fencing, badger gates, a destructive search and recognised best practice construction works.

11.247 In the unlikely event that the entire main sett requires closure, it may be necessary to construct an artificial sett within the Site.

11.248 This could be feasibly carried out within the woodland further to the east, which, owing to close proximity, it is assumed would be within the current territory of the clan.

11.249 Such measures could be controlled though an appropriately worded planning condition and subject to a reserved matters application.

Bats

11.250 Buffer zones of 20 m will be maintained and appropriately fenced between the construction zone and the south of the woodland belt.

11.251 Construction will be carried out during daylight hours only; with lighting will be restricted to automatic security lighting throughout construction.

11.252 As described above, flood lighting at the site will be restricted to the 1st, 2nd and 4G pitches avoiding the south of the Site.

11.253 Whilst flood lighting will be used year round, it will rarely be used later than 10.00pm on any occasion, which will have a minimal impact on bats throughout the summer (and arguably most sensitive period for bats).

11.254 There will be no street lighting long the proposed access route to avoid disturbing likely flight lines between the woodland belt and proposed new waterbody/dwellings which will present suitable foraging and roosting sites.

11.255 A dark corridor (minimum of 50m wide (including areas up to 3.4 lux)) through the retained orchard will connect the existing woodland to off Site habitats.

Birds

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11.256 Impacts on actively nesting birds and infringement of the legislation protecting them would be avoided by timing clearance of suitable vegetation outside of the breeding season (March to August), unless a survey prior to clearance by a suitably qualified ecologist confirms that no active nests are present.

Great Crested Newts

11.257 Mitigation will be implemented to reduce the likelihood of great crested newt road mortality during the occupational phase of the development.

11.258 This will take the form of an underpass connecting two parallel ditches either side of the main access road and dropped kerbs at four points along the main access road and roads to the residential and Rugby Club areas.

Residual Impacts

Habitats

11.259 The loss of commercial orchard of no more than local ecological value will be more than outweighed by the beneficial management of 25.8 Ha of retained orchard.

11.260 The cessation of pesticide use and a relaxation in the mowing regime will deliver impacts in the short term and ongoing management is likely to increase to a major beneficial significant impact in the medium to long term.

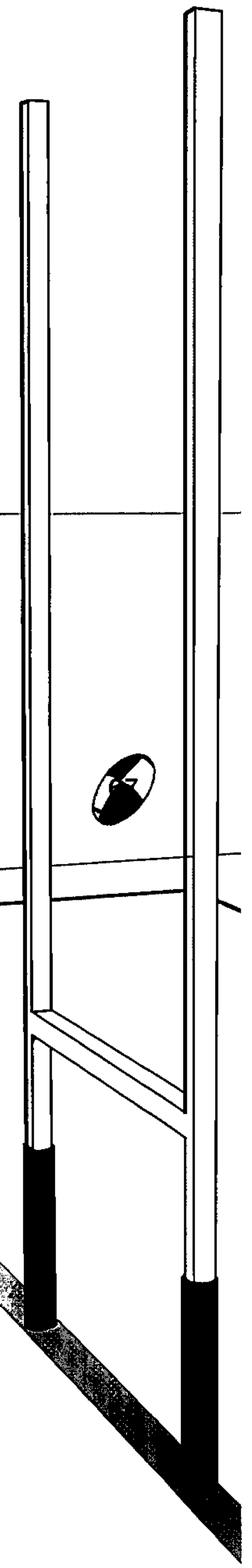
11.261 The creation of the waterbodies, with associated planting, together with the management of existing ponds and woodland, will increase the value of these habitats and connectivity across the Site.

11.262 Whilst such impacts are unlikely to be significant in terms of an increase in ecological value (above the local level), there will still be a minor beneficial impact.

Fauna

11.263 As a result of the creation and management of the new/existing habitats, together with the mitigation outlined above, there is likely to be an insignificant adverse impact on all species at the Site.

11.264 With the exception of the local badger population, there is likely to be a minor beneficial impact that would be significant within the context of the Site on all species, provided the mitigation described can be implemented fully and successfully.



CONCLUSIONS

11.265 An assessment of the ecology and nature conservation issues in respect of the proposed Development was undertaken, based on detailed surveys, background data searches and through consultation with wildlife agencies.

11.266 Likely significant impacts on valued ecological receptors were identified, with mitigation and enhancement devised, based on consideration of legislation and planning policy, and published ecological guidance and strategies.

11.267 The proposed Development has been designed to retain the majority of the valued habitats, all of which have the potential to be improved to provide greater ecological diversity.

11.268 Inevitably there would be some habitat loss, including loss of orchard habitat, scrub and minor areas of other common widespread habitats.

11.269 However, the impacts would be more than mitigated by habitat restoration through traditional management of retained orchard, together with management of retained habitats of value.

11.270 The cumulative improvements through ongoing management of these habitats are likely to have a major beneficial impact on the ecological value of the site overall.

11.271 The Site supports small populations of protected species including bats, badgers, birds and great crested newts; all of which are to be protected from any impacts during construction and are likely to benefit in the long term from improvements in habitat quality and provision of new roost sites, nest boxes and ponds.

11.272 Central to the mitigation and enhancement strategy is an EcMP (outlined in Technical Appendix 5) that would maximise the biodiversity potential of retained and newly created habitats alike.

11.273 Overall, this would improve the biodiversity value of the Site. A programme of monitoring would ensure management is successful in delivering its intended objectives.

11.274 The finalised EcMP would include measures to manage public access and raise awareness of the importance of the Site, thereby minimising adverse impacts to valuable habitats.

11.275 The mitigation and enhancement strategy can be controlled by means of appropriately worded planning conditions and obligations.