NORTH LINCOLNSHIRE HOUSING AND EMPLOYMENT LAND ALLOCATIONS DPD

MATTER 4: EMPLOYMENT LAND ALLOCATIONS

ALLOCATION: SANE-1 (SANDTOFT BUSINESS PARK)

Written Statement on behalf of T. A. White & Sons

Introduction

1. Savills (UK) Limited ("Savills") act on behalf of T.A. White & Sons .

2. T. A. White & Sons control 55.3 hectares (ha) of the 58.5h of land identified at Sandtoft Business Park (Policy SANE-1) to be allocated for a logistics park of B1 (Business/Light industrial) and B8 (Storage and Distribution) uses (see site ownership plan at **Appendix 1**).

3. T.A. White & Sons supports the allocation of land identified in Policy SANE-1 (Sandtoft Business Park IN1-13, 56-1) and considers the proposed allocation to be sound. T. A. White & Sons also supports the Minor Changes (HE/MIN37; HE/MIN38; HE/MIN39; HR/MIN40) presented in Schedule B (Ref: SUB02).

4. This statement responds to the relevant questions raised by the Inspector in relation to Policy SANE-1 to be discussed under Matter 4: EMPLOYMENT LAND ALLOCATIONS at the Examination Hearing session on Wednesday 21 January 2015.

Background

5. The proposed allocation at Sandtoft Business Park (Policy SANE-1) is supported by a evidence base which demonstrates that there are no overriding constraints that would prevent the deliverability of the allocation in a sustainable manner. This evidence base was also prepared to support of the identification of Sandtoft Airfield in the adopted NLC Core Strategy DPD (June 2011) in Policy *CS11: Provision and Distribution of Employment Land*.

6. The Inspector's report on the Examination into the NLC Core Strategy (dated 17 May 2011), concluded the following in relation to a strategic employment allocation at Sandtoft Business Park:

> *"15. Concerns have been raised that the identification of Sandtoft as a broad location for a business park is not a sustainable strategy. However the Sandtoft Evidence Base (2009) demonstrates the viability of connection to the existing road network and the SA highlights social and economic benefits, with the potential for significant job creation in the area to the west of Scunthorpe where employment opportunities are currently limited. Thus, the proposal to allocate land for employment at Sandtoft is supported by robust evidence."* [Our emphasis underlined].

SANE-1 Sandtoft Business Park

- ***Can this allocation provide a realistic sustainable development, in the context of the infrastructure constraints that exist at the site, and in its vicinity?***

7. The proposed allocation at Sandtoft Business Park provides a sustainable development for the following reasons:

Economic

- The sites proximity to the M180 makes it attractive to operators owing to its location on a main national route between the ports and the country's main north/south motorway network.

- A major employment allocation in this location is needed to support the development of estuary related industries on the South Humber Bank, the emerging offshore energy industry, as well as the more recent changes to traditional logistics and distribution occupiers

- This allocation will support the diversification and strengthening of the rural economy, consolidating the existing employment operations at Sandtoft and delivering a more coherent employment area.

Social

- This allocation will further employment opportunities to the circa 22,000 residents in the Isle of Axholme. This allocation will provide local work opportunities and could potentially create up to 1,500 local jobs in the Isle of Axholme. This is the only strategic employment allocation in the west of the District.

- The site is located within 20 minutes drive time from Scunthorpe, and is under 10 minutes drive time from the market towns of Epworth and Crowle (two of the six in North the District). This allocation has the potential to reduce overall journey to work trips from the Isle of Axholme as a key employment area.

Environmental

- A Framework Travel Plan (**Appendix 2**) has been prepared to demonstrate how the site can be accessed sustainably. This document has identified a range of potential measures for accessing the site other than by private car. The primary measure proposed at this stage is for a shuttle bus to/from Crowle train station to the site to be provided. Crowle train station (6km from the site) has frequent services to Scunthorpe, Doncaster and Sheffield reaching a wide population catchment area. The Framework Travel Plan also proposes, a review of the delivery of local bus services to Sandtoft and promotes local trips from the market towns of Epworth and Crowle by bicycle.

- At this stage, it is anticipated that land to the north of Hatfield Waste Drain will be used for drainage and on-site surface water storage which could also provide environmental benefits (please see Illustrative Masterplan and Indicative Phasing Plan at **Appendix 3**)

- Half of the proposed allocation is located on previously developed land, development on which is supported in the National Planning Policy Framework (p.17), and in the adopted Core Strategy DPD (Policy CS2).

- This allocation can provide a comprehensive solution for access to the strategic highway network through enabling existing HGV traffic to utilise a new link route through the site to Idle Bank road.

- ***The Deliverability, Phasing, Implementation, Infrastructure Requirements, Biodiversity considerations and Constraints, including any necessary Mitigation measures***

Deliverability

8. Sandtoft Business Park (Policy SANE-1) is deliverable for the following reasons:-

    - 55.3 ha at Sandtoft airfield is controlled by a single ownership (T.A. White & Sons) and is available immediately for development. As the majority landowner, the site is deliverable from an ownership perspective.

    - A Flood Risk and Drainage Assessment (**Appendix 4**) has been prepared which demonstrates the allocation is achievable in flood risk terms, with attenuation measures provided on-site ensuring that flood risk elsewhere is not increased.

- Access to the strategic highway network via Idle Bank to the A18 and then to junction 1 and 2 of the M180 provides for a deliverable an economically viable site solution to site access.

- Technical reports assessing ecology, archaeology, cultural heritage, landscape, and ground conditions have demonstrated that there are no major constraints to prohibit the development coming forward.

- A cost feasibility and viability appraisal has been prepared, which shows that the proposed allocation is economically deliverable.

- The site is deliverable, and will be developed, within the timeframe of the LDF plan-period to 2026.

Phasing

9. An Illustrative Masterplan and Phasing Plan has been prepared (**Appendix 3**), which shows that a phased approach will be taken to the site delivery, to ensure that the costs of new infrastructure can be linked to the actual impact of the development.

10. It is envisaged that that site will come forward in 3 phases (as shown on the Illustrative Masterplan and Phasing Plan **Appendix 3**)

11. The cost of the proposed highways infrastructure associated with the construction of the site has been considered in the cost feasibility and viability appraisal and are deliverable and economically viable in the light of the likely returns from the development.

12. The site will come forward during Phases 1 (Local plan period 2014-2019) and 2 (Local plan period 2019-2024).

Implementation

13. Development of Sandtoft Business Park is to be brought forward by the developer. The vision of the park will ultimately be dictated by market demand.

14. Demand for space at Sandtoft Business Park is summarised in terms of the national, and local demand below:

National

15. The M18 – M180 is a prime logistics area and as such the employment offer should be tailored to this particular use. The UK logistics market has experienced a fundamental shift in its operational profile over the past 15 years. There has been a fundamental change in the way consumers shop which has resulted in a re-evaluation of the retail logistics sector. The on-set of internet shopping has resulted in the need for logistics no longer being close to towns and cities to support retail facilities. The key criterion now is that of access, with the ability to get product on the road network for delivery to homes across whole regions rather than specific retail outlets. The result has seen large retailers who have both stores and on-line capability review the national map of the UK and identify locations that benefit from excellent accessibility where they can locate facilities that serve a region or possibly the whole country.

16. The second major factor to change the profile of retailing in the UK is the rise of the super store. The food retailers have sought to diversify over the past 15 years and offer customers a 'one-stopshop' approach to all their retailing needs. As a consequence the big food retailers are seeking more than one type of solution to their logistics needs as they have such a vast array of product.

17. The third fundamental change is the growth in imports over recent years. Fashion, white goods and DIY products are now mostly imported into the UK. An ever increasing percentage is coming by container ship. The east coast ports have seen huge increase in activity. The product that

arrives at port needs to be moved inland to dedicated distribution facilities where goods can be sorted in a central hub.

18. The consequence of the above factors has been the drive for larger facilities in easily accessible locations to store an ever increasing range of product that will be distributed to retail outlets or directly to the home. Technical advancement in the way product is stored and sorted has resulted in retailers and third party logistics (3PL) companies who contract to the retailers seeking to maximize the capacity of their facilities. Footprints of buildings have increased and so has their height so the operator can utilize all the cubic capacity available. A regional distribution centre is typically in excess of 250,000 sq ft.

19. Those seeking logistics solutions will continue to have a variety of needs. There will still be a need for smaller localized facilities serving particular markets. The emergence of the 'super shed' in the last 15 years has been a reaction to market demand. The economies of scale that result from basing a range of functions in a single facility are critically important in an industry that operates on very tight margins. Sandtoft Business Park is ideally placed to benefit from this now established market sector.

Local Market

20. Sandtoft Business Park is strategically well located, due to its proximity to the strategic road network, in particular its position near to the M18 corridor, which is preferred by occupiers.

21. The Road Transport Directive (RTD) is also a key consideration in supporting a major logistics and distribution allocation at Sandtoft Business Park. The impact of the RTD for Sandtoft is in relation to the access to the Humber Ports. Doncaster is located one to one and half hours from Hull and Immingham deep water ports and also with access to the wider motorway network and is therefore very well located for distribution companies whose drivers are required to work within the eight hour day restriction.

Market Interest to date

22. Savills is acting as Agent on behalf of T. A. White & Sons and has been exploring opportunities for a Joint Venture Agreement with a development partner to bring forward the delivery of the site. This has led to detailed negotiations with two developers who remain very interested in the reaching an agreement on the site.

23. Despite not formally marketing the site there is a general awareness of the site's availability and Savills have received several approaches from both local and national occupiers.

Infrastructure Requirements

24. The key issues relate to the delivery of highway and drainage infrastructure. This been assessed in some detail in the Highway Evidence Base report and the Flood Risk Assessment prepared in support of the Core Strategy. These matters are considered below:

Highways

- ***Access*** - It is proposed that the site will access the strategic highway network via the existing route of traffic from Idle Bank to the A18, which provides access to Junction 1 and Junction 2 of the M180. The Highways Evidence Base document demonstrate that the proposed site access solution and the proposed level of development will not have an adverse impact on either the local or strategic highway network, nor the operation of Junctions 1 or 2 of the M180 (please see technical note at **Appendix 5**).

- ***On-site infrastructure*** - Two new access points onto the site are proposed, with new junctions being provided onto Idle Bank and Belton Road. A new spine road through the site will link the two new access points, with a bridge crossing Hatfield Waste Drain. A phased approach will be taken to delivery, to ensure that the costs of new on-site highway infrastructure can be linked to the actual impact of the development. The cost of

the proposed on-site highways works associated with the site are deliverable and economically viable in the light of the likely returns from the development.

- ***Off-Site highway improvements*** - the following off-site highway improvements are anticipated to be required at the planning application stage, which are considered to be deliverable and viable :-
  - A18/A161 Double Rivers Junction;
  - A18/High Levels Bank;
  - Idle Bank Bridge over M180;
  - Traffic Calming along Westgate Road/Belton Road;and
  - A Supplementary Signing Scheme.

Drainage

25. The site is located in Flood Zones 2 and 3. It has been demonstrated through the Council's own Sequential Test that the site is sequentially preferable.

26. The Flood Risk Assessment has been prepared which demonstrates that the proposals comply with the Exceptions Test concludes that the development is achievable in flood risk terms, with attenuation measures provided on-site ensuring that flood risk elsewhere is not increased.

27. By adopting a sequential approach within the site boundaries to building location, it is not proposed to build to the north of the Hatfield Waste Drain. At this stage, it is proposed this area will be utilised for managing surface water and ensuring that flood risk to the surrounding area is either unchanged or reduced.

28. The Flood Risk Assessment is proposing that building finished floor levels are to be set at 2.0m AOD, to ensure that the buildings can secure insurance cover and will be above, with an appropriate freeboard, any flood reservoir that could conceivably develop following a defence failure or exceedance.

29. It is likely that an open storage solution will be utilised as this does not involve the purchase of proprietary tanks. A detailed solution has not been designed, but an appropriate solution can be achieved at a level of cost which is supportable by the envisaged end development.

30. Both the site access arrangements and flood risk issues have been assessed in detail and have demonstrated that that allocation is developable and viable.

Biodiversity considerations and Constraints, and Mitigation measures

31. An Ecological Walkover Survey and Assessment was undertaken in November 2010.

32. The Walkover identified the need for further site surveys to be undertaken to establish whether water voles, otters, reptiles, amphibians, aquatic invertebrate and nesting birds are present. If any of these species are present appropriate mitigation can be provided within the allocation boundaries. At this stage mitigation may include, the incorporation of ponds, hedgerows and native shrubs to enhance the connectivity of the site for biodiversity.

33. It is intended to leave Hatfield Waste Drain in situ. Should water voles and otters be present, an appropriate buffer zone will be provided to ensure this habitat is not adversely affected.

34. It is also intended that the area to the north of the drain will set aside for managing surface water and ensuring that flood risk to the surrounding area is either unchanged or reduced. This area could provide ecological benefits for reptiles and amphibians, if they are present on the site.

35. The emerging development proposals will incorporate further site wide habitat management and measures to integrate the adjoining landscape infrastructure into the site masterplan. The Illustrative Masterplan and Phasing Plan (**Appendix 3**) shows how the existing green buffer to the west and enhancement of the woodland edge to the rear of residential properties along Idle Bank will afford visual screening of future development proposals. The proposed landscape

infrastructure associated with a new spine road running through the site could also support further landscape infrastructure providing a 'green corridor' though the site with landscaped nodes along its length which will serve to connect to locally planned hedgerow within the development plots.

36. The draft allocation policy SANE-1 makes clear that detailed ecology surveys will need to be undertaken as part of a planning application coming forward on the site, which provides the necessary control to ensure appropriate mitigation will be provided.

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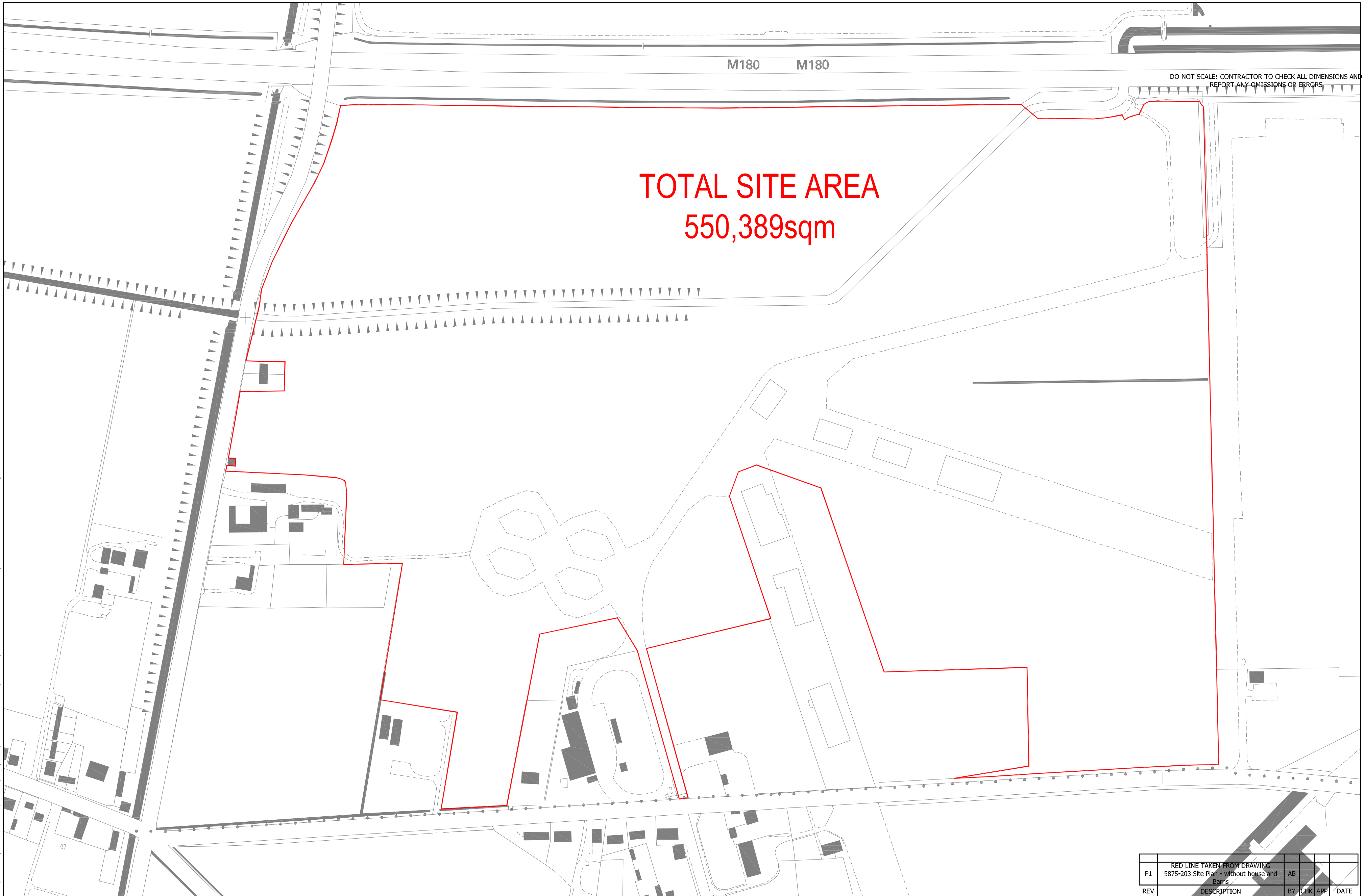
Appendix 1: T. A . White & Sons – land ownership plan



REV	DESCRIPTION	BY	CHK	APP	DATE
P1	RED LINE TAKEN FROM DRAWING 5875-203 Site Plan - without house and Barns	AB			

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Project: SANDTOFT LOCAL DEVELOPMENT FRAMEWORK EVIDENCE BASE

Drawing Title: RED LINE PLAN

Scale @ A3	Drawn	Date	Checked	Date	Approved	Date
NTS	AB	OCT 2010				

Project No.	Office	Type	Drawing No.	Revision
A067321	21	EPT	SK 001	P1

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Appendix 2: Framework Travel Plan

WYG Transport Planning

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Framework Travel Plan

Sandtoft Employment Site,
Sandtoft

creative minds safe hands

REPORT CONTROL

Document:	Framework Travel Plan
Project:	Sandtoft Employment Site
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1	December 2010	Final	GB
2			
3			
4			

CONTENTS

LIST OF APPENDICES

1 INTRODUCTION

1.1 This Framework Travel Plan has been prepared by WYG on behalf of T A White & Sons to support the Highways Evidence Base which has been prepared to support the allocation of the former Sandtoft Airfield for employment use.

1.2 The site has been identified in the Preferred Options Housing and Employment Land Development Plan Document to be allocated for Employment Uses in the Local Development Framework. (LDF).

1.3 The Housing and Employment Land Allocations DPD is one of the Local Development Documents included within North Lincolnshire's LDF. Its main purpose is to allocate sufficient land for housing, employment and retail, to meet the needs of North Lincolnshire to 2021 and beyond.

1.4 This report should be read in conjunction with the Highways Evidence Base for the development which demonstrates the sustainable nature of the site.

1.5 This report will build upon the Highways Evidence Base and will show how access to the site by alternative modes can be achieved by setting out measures that any future developer of the site would be expected to deliver.

1.6 Therefore, this report will establish a framework for future travel planning at the site. It is anticipated that there would be an overall Travel Plan Coordinator, possibly delivered through a management company, who would oversee the Travel Plans for each individual unit on the site as a whole.

1.7 At this early stage in the planning process it is not possible to be specific about the final content of the Travel Plan for the development. However, this Framework Travel Plan would form the basis for an over-arching Travel Plan to be delivered on a site wide basis for the whole development by the developer or a management company.

1.8 The content of the Travel Plan will be developed and more detail will be provided as the scheme moves forward. However, this document sets out a comprehensive package of deliverable and practical measures which demonstrate that the site is sustainable in terms of travel matters and has significant strength, such as its proximity to a good rail service and existing employment uses, which can be built upon via the Travel Plan.

1.9 The remainder of this report is structured as follows:

- **Chapter 2** outlines the development proposals;
- **Chapter 3** describes the site and the adjacent highway network;
- **Chapter 4** describes the existing public transport services available in the vicinity of the site;
- **Chapter 5** sets out the objectives of the Travel Plan;
- **Chapter 6** sets out the initiatives and measures to achieve the objectives of the Travel Plan;
- **Chapter 7** describes the monitoring and review process;
- **Chapter 8** sets out the Travel Plan Targets and Goals; and
- **Chapter 9** provides a summary to the report.

2 THE PROPOSED SANDTOFT SITE

Overview

2.1 It is proposed to develop the Sandtoft site for employment uses. Given its advantageous location adjacent to the M180 motorway, along with its proximity to the south Humber ports, it is considered that Distribution/Warehousing would constitute the most appropriate use and this is supported by the North Lincolnshire Council Housing and Employment Land Allocations DPD Submission Draft, as described previously.

2.2 The total area of the site comprises approximately 59Ha which, based on an approximate ratio of 30% developable area, was initially proposed to provide a Gross Floor Area (GFA) of 165,000m^2. The traffic impact is based on generated traffic flows derived using this amount of development.

2.3 However, following a Flood Risk Assessment of the site, the developable area has been reduced such that the current proposals do not include any development at the northern end of the site which lies between the Hatfield Waste Drain and the M180 motorway.

2.4 Therefore, the current masterplan for the site includes a total GFA of 125,834m^2 of distribution/warehouse space, contained in 11 buildings. All B1 office use has been removed from the current proposals in order to respond to the concerns of the HA.

2.5 The proposed masterplan is included at Appendix A.

Site Access

2.6 There are two points of access proposed for the site:

- A roundabout junction onto Idle Bank; and
- A roundabout junction onto Belton Road.

2.7 However, the route to the strategic highway network along Idle Bank will provide the primary route to the site for HGV traffic. This will be supported by a two way weight restriction through Belton.

2.8 The location of the site benefits from being within the catchment area of a relatively uncongested part of the Strategic Road Network.

Generated Traffic Flows

2.9 The generated traffic flows associated with the proposed development generally fall into two categories, namely:

- Journey To Work trips for employees travelling to and from the site at the start and end of their shift; and
- HGV trips associated with the individual business activities.

2.10 In order to determine the trips associated with employees travelling to/from the site for work, the Trip Rate Information Computer System (TRICS) database has been interrogated to provide AM and PM peak period person trip rates. The modal split for the Axholme Central Ward – Method of Travel to Work Daytime Population has been extracted from the NOMIS database and applied to the TRICS data to provide vehicular trips.

2.11 The vehicular trips associated with the business activities have also been derived from the TRICS database using sites of a similar nature to the proposals.

2.12 The traffic assessment has been based on a 165,000m2 development which gives rise to:

- 199 arrivals and 104 departures during the AM peak; and
- 115 arrivals and 246 departures in the PM peak.

2.13 In fact, the current proposals will only provide an approximate GFA of 125,000m2. Hence, the traffic flows which have been assessed are approximately 31% higher than those derived from the current proposals, resulting in a very robust analysis of the highway network.

3 THE EXISTING SITE AND HIGHWAY NETWORK

The Site

3.1 The 59 ha site is located off Belton Road and is located approximately 25km east of Doncaster Town Centre and 20km west of Scunthorpe. It is roughly rectangular in shape and is bounded to the north by the M180, to the east by a large car storage facility, to the south by Belton Road and to the west by Idle Bank.

3.2 It sits within the former Sandtoft Airfield which, over many years, has been redeveloped for industrial uses and is currently home to a large number of existing businesses.

3.3 Sandtoft Airfield is strategically located close to the SRN, including the M180, A180, M18, M62 and the A1/M1 which all provide good connectivity to the rest of the country.

3.4 The site is approximately 10 minutes drive from the M18, 20 minutes from the A1 and 25 minutes from the M62. All these roads are all served via the M180.

3.5 A plan showing the location of the site in relation to the strategic highway network is included at Appendix B.

3.6 A plan showing the site in relation to the local highway network can be seen at Appendix C.

3.7 Access to the existing site is gained from several locations along Belton Road and Idle Bank.

The Adjacent Highway Network

3.8 Junction 2 of the M180 motorway lies approximately 5km to the east of the site and is accessed via Belton Road/Sandtoft Road/Westgate and the A161. The slip roads to/from the motorway form simple priority junctions with the A161.

3.9 The A161 is a single carriageway road approximately 7.3m wide. In the village of Belton, it forms a mini roundabout junction with Westgate.

3.10 Westgate is also a single carriageway road that connects the site to the wider highway network. Within the village, Westgate is approximately 6m wide and is subject to a 30mph speed limit. A weight restriction prohibiting vehicles above 7.5 tonnes is in operation through Belton which prohibits HGV's from travelling eastbound. The road is bounded by residential properties, with discontinuous footways along both sides of the carriageway.

3.11 Westgate changes to Sandtoft Road and the nature of the link changes from serving mainly residential properties to mainly commercial. The road width continues to be approximately 6m wide and the provision of footways more sporadic.

3.12 Sandtoft Road becomes Belton Road adjacent to the site. It connects to Idle Bank at a four arm mini roundabout immediately adjacent to a simple priority junction, giving the effect that it is a 5 arm mini roundabout junction.

3.13 Idle Bank is a single carriageway road approximately 7m wide which sits adjacent to the eastern boundary of the site. This provides the existing access to the wider strategic highway network and all HGV's exiting the existing businesses at Sandtoft use this route to the A18.

3.14 The A18 itself runs along an east / west alignment approximately parallel to the M180.

3.15 The site abuts the M180 which forms the northern boundary. It runs for 30km to the east where it links with A180 at Junction 5. A180 continues in an easterly direction to provide access to Grimsby, Immingham and the Humber ports

3.16 Junction 4 is the M180 /A18 junction and Junction 3 is the M180 / M181 junction giving access to Scunthorpe. Junction 2, where M180 meets A181, lies 3.2km to the east of the site.

3.17 Junction 1 lies 8km to the west of the site and the A18 Tudworth roundabout lies to the north east of this junction.

3.18 A further 9km to the west, M180 meets M18 at Junction 5 of M18. As M18 runs to the south, it passes through Junction 3 where it meets the A1(M) and continues through to M1. to the north of Junction 5, the M18 runs to meets M62.

4 SUSTAINABLE TRAVEL

Rail Services

4.1 Crowle Railway Station is located some 6.5km to the north east of the site. There is a regular service every 30mins in each direction which provides routes from Doncaster, Sheffield, Scunthorpe and Grimsby as well as Barnetby, which serves Humberside Airport.

4.2 The station is managed by Northern Rail and facilities at the station include;

- Step free access across the whole station;
- Cycle storage;
- A bus stop is located nearby.

4.3 A plan showing the location of Crowle Railway Station and the other stations along the line is included at Appendix D.

4.4 Therefore, given that the site is relatively close to Crowle, with its regular commuter services to major regional destinations, it is well placed to provide an important link for journeys to/from the site.

Bus Services

4.5 Services 292 and 58 operate in both directions along Belton Road immediately to the south of the site.

4.6 The 292 service connects Doncaster with Belton via Edenthorpe and Hatfield. There are only two services on a Saturday and these operate between 0945 and 1035 in the AM and between 1601 and 1648. in the PM period. This service does not operate on weekdays.

4.7 The 58 is a limited stop service along Belton Road, Sandtoft Road and Westgate Road and operates between 0900 and 1400 hours in both directions with 1 bus in each direction every 120 minutes. The service operates on a Wednesday and Friday only.

4.8 Although the existing level of bus service in proximity to the site is relatively poor, the development of the site, coupled with the existing employment opportunities on the adjacent sites, will provide the potential level of patronage that would support a more regular and commercially viable service.

Bus Stops

4.9 There are four bus stops within the vicinity of the site. All stops are simple flag and pole stops. The drawing included at Appendix E shows the location of these stops.

4.10 The CIHT's document "Planning for Public Transport in New Developments" advises that:

'The maximum walking distance to a bus stop should not exceed 400m and preferably be no more than 300m.'

4.11 All the bus stops are located outside of the CIHT's recommended maximum preferred walk distances for employment developments with the nearest bus stops located some 1200m to the west of the centre of proposed development along the public highway.

4.12 However, given the potential of the site, along with the adjacent sites, to ultimately attract a commercially viable service, the internal access roads will be designed to accommodate the

necessary infrastructure (Bus shelters, bus boarder kerbing, real time information etc) to support any future bus services that may be delivered at the site. This, coupled with improved pedestrian links, will provide a high quality experience for those using the services.

4.13 A plan showing the location of the existing bus stops in relation to the site can be seen at Appendix E.

Cycling

4.14 PPG13 'Transport' states that:

'*Cycling has the potential to substitute for short car trips, particularly those under 5km, and to form part of a longer journey by public transport.*'

4.15 The plan at Appendix F shows that a large proportion of Belton, Epworth and Crowle is therefore accessible from the site by cycle.

4.16 Furthermore, the topography of the surrounding hinterland is such that cycling would be particularly attractive as a means of transport from further afield than the typical 5Km catchment (i.e. the approaches on all sides are relatively flat, making cycling easy). This makes cycling a particularly attractive mode of transport for those living in Belton, Epworth and Crowle.

4.17 Therefore, the infrastructure within the site will be designed to accommodate cycling with shared footway/cycleway routes connecting into the existing highway network.

Walking

4.18 There is a footway along the north side of Belton Road from the Wood Carr Lane Industrial Estate towards Belton which connects the site to the wider industrial area.

4.19 However, the footways do extend as far as the existing employment opportunities, and the site would connect into the existing facilities. Furthermore, the internal site networks would be designed in such a way to encourage walking, at least for part of the journey to work (e.g. those car-sharing with people who work elsewhere).

4.20 This would provide a safe route for pedestrians from the nearest residential areas in Belton.

5 TRAVEL PLAN OBJECTIVES

Introduction

5.1 A Travel Plan is a sustainable access strategy for the management of travel to and from work, home and places of leisure.

5.2 There are numerous local and national policies in place to protect and enhance the environment and encourage sustainable development and travel patterns. This Travel Plan proposes measures to encourage accessibility via a variety of transport modes which will be implemented across the whole development.

Objectives

5.3 The specific objectives of the Travel Plan are to:

- Improve the accessibility of the site by means other than the single occupancy private car;
- Ensure the Travel Plan meets the needs of the employees and visitors;
- Minimise the impact of HGV traffic on the local roads. This is particularly true for the residential area of Belton, where a total HGV ban could be implemented;
- Make employees and visitors to the site aware of the environmental, financial and health benefits to be derived from the Travel Plan;
- Minimise the level of vehicular traffic generated by the development; and
- Enable the development to protect and enhance the environment

6 TRAVEL PLAN INITIATIVES

6.1 This section sets out measures that could be implemented in order to increase the sustainability of the site should it be brought forward for development. An employment development of the size of the Sandtoft site would be expected to deliver most of the measures described here.

6.2 It is anticipated, therefore, that the following measures and actions could be implemented at the site in order to discourage the use of the single occupancy private car and encourage and promote the use of sustainable transport modes.

Measures to Reduce the Need to Travel

6.3 To reduce the need to travel, the following measures could be delivered:

- Recruit staff from the local area where possible.
- The potential delivery of additional services could be investigated, such as (although not an exhaustive list):
  - Post Office;
  - Cash Machine;
  - Sandwiches (or Fast Food);
  - Retail (small shop); and
  - Pub/restaurant/café.

Measures to Reduce Car Usage

6.4 To encourage a reduction in the use of the private car the following measures could be delivered:

- The promotion of Car sharing to employees.
- A guaranteed a ride home for car-sharers in emergencies. Examples of successful car sharing schemes can be found at liftshare.com and travellincs.com.
- Clearly marked out car share spaces in a preferential location, nearer to building entrances, in order to encourage car sharing.
- The provision of a site-wide web page, including a database of potential car sharers. This could also be extended to include the existing employment opportunities on adjacent sites.
- Incentives for reducing car use, such as the offer of a free meal for those who use sustainable travel modes on specific event days, could also be investigated.

Measures to Promote Public Transport

6.5 Public transport could be promoted through the following measures:

- The provision of a privately run shuttle bus service provided by the occupiers could be delivered, providing a link to Crowle Railway Station. The operation of the buses would be geared to the demands of the development so that employees could access the commuter rail services at Crowle. It is expected that a service of this type would cost in the region of £250 per day for three buses in each of the AM and PM peak periods which would connect to the half hourly train service at Crowle. It is expected that such a service would be provided free or heavily subsidised to employees and, given the relatively low daily cost, it is a realistic prospect that this service could be funded by a site of this size.

- The provision of a shuttle bus service could be phased with the development of the site and connected to the existing employment opportunities on the adjacent sites, which would make it more viable and therefore an attractive measure to increase the sustainability of the area in general. Ultimately, the Sandtoft area would provide a core of approximately 2500 employees (1500 on the Sandtoft Site and 1000 on existing sites). This number of employees would provide an attractive base for bus companies to provide a commercially viable service to the area, particularly during peak periods at the start and end of shifts. This would also provide a much improved bus service for those living in Belton, who could utilise the increased bus service to access the railway station at Crowle for their own journeys to work. This would greatly increase the sustainability of the whole area by offering much improved public transport links to the wider regional area for everyone.

- In addition to the shuttle bus, the Travel Plan would seek to divert services through the site, improve the level of existing bus provision and provide bus shelters better located to serve the site.

- The provision of information on existing rail services and schedules to staff. This could also be displayed on site-wide notice boards, or web-site.

- Direct convenient and attractive pedestrian links to bus stops will be provided within the site, with appropriate, high quality facilities at bus stops.

- The promotion of journey planning tools such as 'Your next bus' and the A to B journey planner.

- Staff and visitors could be provided with the addresses of websites that can assist in planning journeys by public transport examples of this are travelline.co.uk and various bus operators' websites.

Measures to Promote Walking

6.6 Walking could be further encouraged by the following measures:

- The provision of high quality, safe pedestrian routes within the development. These will be designed to take account of common pedestrian desire lines and linked into the external pedestrian network and adjacent employment sites.

- The health and fitness benefits of walking would be directly promoted to employees and patients.

- Advice for employees will on personal safety. The provision of free attack alarms to members of staff could also be investigated.

- Websites which promote walking such as livingstreets.org.uk and walkit.com could be conveyed to visitors and staff through notice boards and written communications, or the development web-site.

Measures to Promote Cycling

6.7 Cycling could be further promoted and encouraged by the following measures:

- The provision of segregated footway/cycleway routes through the site which connect to the existing highway network.
- The provision of secure, well lit and conveniently located cycle parking in accordance with North Lincolnshire Council's standards.
- Shower and Changing facilities which would include lockers to store equipment and clothing.
- The provision of Cycle Hire facilities or assisted purchase schemes (or free bicycles).
- DfT cycling promotions and assistance initiatives and websites such as sustrans.org.uk could be disseminated to staff.
- The health and fitness benefits of walking would be directly promoted to employees.

Measures to Promote the Travel Plan

6.8 The Travel Plan would be promoted through the following measures:

- The inclusion of the Travel Plan measures in the marketing material for the site (e.g. employment packs, staff inductions, notice boards etc) and these will be provided to each new employee.
- A website for the development to promote the Travel Plan and provide links to Car Sharers, Public Transport Information, and the like.

7 MONITORING AND REVIEW

7.1 The initial goal of any future Travel Plan would be to implement the measures and opportunities for sustainable travel identified previously.

7.2 The Framework Travel Plan Coordinator would be expected to liaise with individual TPC's for each unit and also to look to the existing businesses in the vicinity for additional opportunities. This could result in the provision of measures and facilities which would not necessarily be viable if the site was considered in isolation.

7.3 At every anniversary following completion of the development, the TPC would review the Travel Plan in consultation with the Council's Travel Plan Team and an Annual Action Plan would be prepared and agreed.

7.4 The Action Plan would typically contain a programme of measures designed to help achieve the Travel Plan targets on travel modal share over the coming year. It would clearly set out the tasks involved, the person(s) responsible, and dates by which the measures should be achieved over the next 12 months.

7.5 The TPC would instruct surveys on an annual basis to monitor the use of different modes of transport to and from the site. The first of the surveys would typically be carried out within three months of initial occupation of the site and used to give the baseline information against which the future year data is compared. The TPC would then forward the results of the first surveys and all subsequent surveys to the North Lincolnshire Council Travel Plan Team within 3 months of the survey for comparison against agreed targets. The surveys will typically be carried out for a minimum of 5 years after the development is fully occupied and will cover how employees travel to work.

7.6 A travel survey could be distributed to all staff and visitors on a predefined day each year. This would be a short questionnaire asking about methods of travelling to and from the site, the normal mode of travel and will also provide an opportunity to raise questions or provide feedback on travel to and from the site generally.

8 TRAVEL PLAN TARGETS

8.1 Targets are measurable goals which are set in order to assess whether the objectives of the plan have been achieved. They need to be realistic and take into account the situation of the proposed development and should be determined from the predicted levels of traffic.

8.2 The principal goal of a Travel Plan is to reduce the number of single occupancy vehicle trips to and from the site.

8.3 To this end, initial targets are established below, based on the existing modal splits in North Lincolnshire and the reasonable expectations of a Travel Plan. It is expected that this type of data would form the basis of any future Travel Plan (subject to ongoing changes).

8.4 Therefore, in order to present an example of the site specific target split, reference is made to the current national, regional and local travel patterns from the 2001 census. Table 8.1 sets out the existing modal splits and shows that the Axholme ward has a higher than average rate for people commuting by car.

Mode	2001 Census			
	England	Yorkshire & Humber	North Lincolnshire	Axholme
Underground, metro, light rail or tram	3.5	0.4	0	0.0
Train	4.7	1.5	0	0.4
Bus, minibus or coach	8.3	11.5	3	2.4
Taxi or minicab	0.6	0.6	-	0.2
Driving a car or van	60.6	61.5	70	75.1
Passenger in a car or van	6.7	8.0	8	7.4
Motorcycle, scooter or moped	1.2	1.1	2	0.8
Bicycle	3.1	3.2	6	2.9
On foot	11.0	11.9	10	10.2
Other	0.4	0.3	-	0.6

Table 8.1: Travel Patterns - 2001 Census Data

8.5 The DfT report *"Smarter Choices: Changing the Way we Travel"* provides evidence that Workplace Travel Plans can achieve reductions in peak period car travel of between 10-25%. Therefore, given the location of the site and its mode share when compared to the rest of North Lincolnshire, adopting a shift at the lower end of the scale will still result in a modal split for the site that is better than the regional (North Lincolnshire) average.

8.6 For the purpose of setting these initial targets, the shift from car travel is shared equally across cycling, car sharing, bus and rail use.

8.7 The resultant target modal splits for the site, over the first five years of the Travel Plan are demonstrated in Table 8.2.

Mode	Travel Plan Period					
	Existing	1	2	3	4	5
Train	0.4	0.9	1.4	1.9	2.4	2.9
Bus, minibus or coach	2.4	2.9	3.4	3.9	4.4	4.9
Taxi or minicab	0.2	0.2	0.2	0.2	0.2	0.2
Driving a car or van	75.1	73.1	71.1	69.1	67.1	65.1
Passenger in a car or van	7.4	7.9	8.4	8.9	9.4	9.9
Motorcycle, scooter or moped	0.8	0.8	0.8	0.8	0.8	0.8
Bicycle	2.9	3.4	3.9	4.4	4.9	5.4
On foot	10.2	10.2	10.2	10.2	10.2	10.2
Other	0.6	0.6	0.6	0.6	0.6	0.6

Table 8.2: Target Modal Splits

8.8 The Travel Plan Coordinator (TPC) should not omit or change these targets without prior consultation with the Transport Planning Team at North Lincolnshire Council.

9 SUMMARY

9.1 This Framework Travel Plan has been prepared by WYG on behalf of T A White & Sons to support the Highways Evidence Base which has been prepared to support the allocation of the former Sandtoft Airfield for employment use.

9.2 The Highways Evidence Base demonstrates that the site is in a sustainable location and this Framework Travel Plan shows that further measures can be implemented to ensure that the whole development operates in a sustainable manner.

9.3 This provides spin-off benefits for the existing businesses in Sandtoft, which collectively could lead to improvements in public transport services for everyone, including the residents in Belton.

9.4 The developer would be responsible for appointing a Travel Plan Coordinator (TPC) prior to occupation of the site, who typically would remain in post until 5 years after final occupation of the site.

9.5 Ultimately, the occupiers of any development on the site would implement the details of the Travel Plan described in this report.

9.6 This document also clearly outlines the role and responsibilities of the TPC and describes how the Framework TPC would interact with individual TPC's.

9.7 This document outlines various measures aimed at achieving the objectives of a Travel Plan for the TPC to implement. It should be noted that these measures are not exhaustive and that the TPC can develop other measures as appropriate.

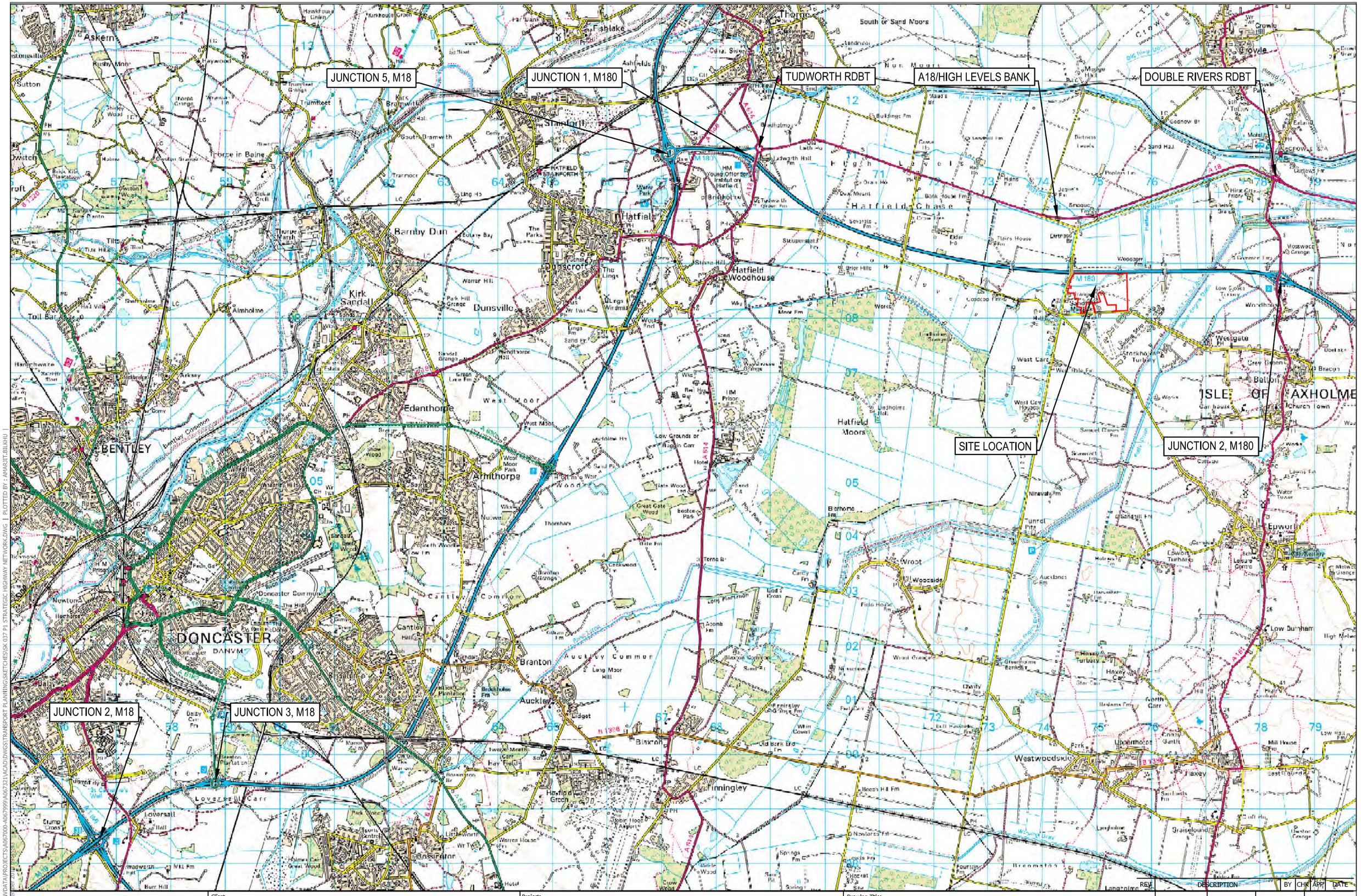
Appendix A

Schedule of Accommodation

Plot	Plot area	Building footprint m2	Building footprint sq ft
A	15 360	6 144	66 000
B	16 080	6 432	69 234
C	16 200	6 480	69 750
D	61 000	24 400	262 641
E	13 050	5 220	56 188
F	45 586	18 234	196 275
G	25 392	10 156	109 275
H	34 780	13 912	149 748
I	28 450	11 380	122 494
J	33 300	13 320	143 376
TOTAL	**314 590**	**125 834**	**1 354 360**

Proposed Distribution/ Warehouse Development
SANDTOFT
for
White Property Group
Proposed Site Layout
November 2010 scale 1:5000 at A3 Drawn SHS
10 009 SK 001 think architecture+design

Appendix B



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Client
T A WHITE & SONS

Project:
SANDTOFT

Drawing Title:
STRATEGIC HIGHWAY NETWORK

REV	DESCRIPTION	BY	CHK	APP	DATE

Scale @ ##	Drawn Date	Checked Date	Approved Date
NTS	AB DEC 10		

Project No.	Office	Type	Drawing No.	Revision
A067321	21	EPT	SK 037	P1

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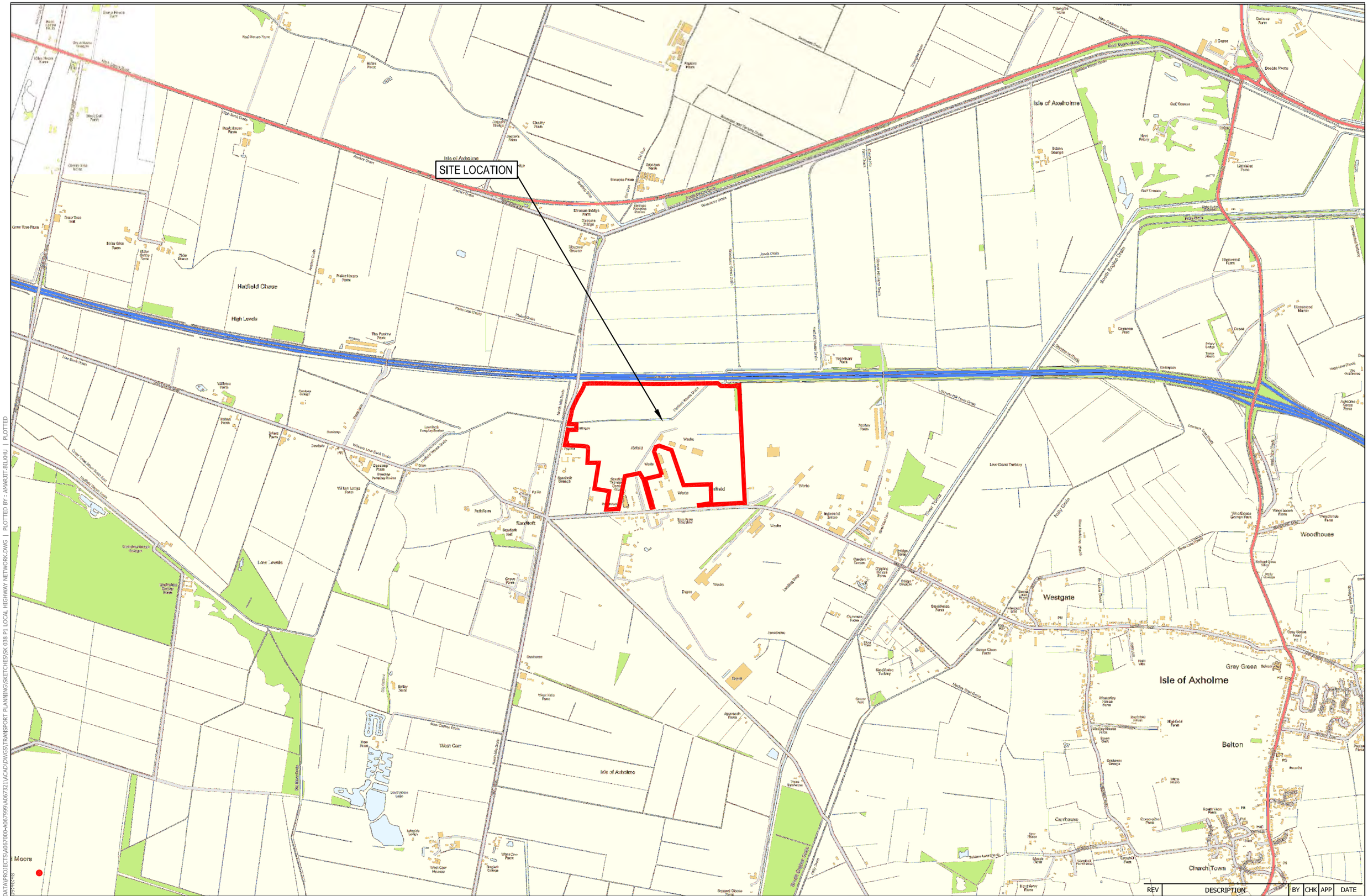
Appendix C



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REV	DESCRIPTION	BY	CHK	APP	DATE

Client: T A WHITE & SONS

Project: SANDTOFT

Drawing Title: LOCAL HIGHWAY NETWORK

Scale @ ##	Drawn	Date	Checked	Date	Approved	Date
NTS	AB	DEC 10				

Project No.	Office	Type	Drawing No.	Revision
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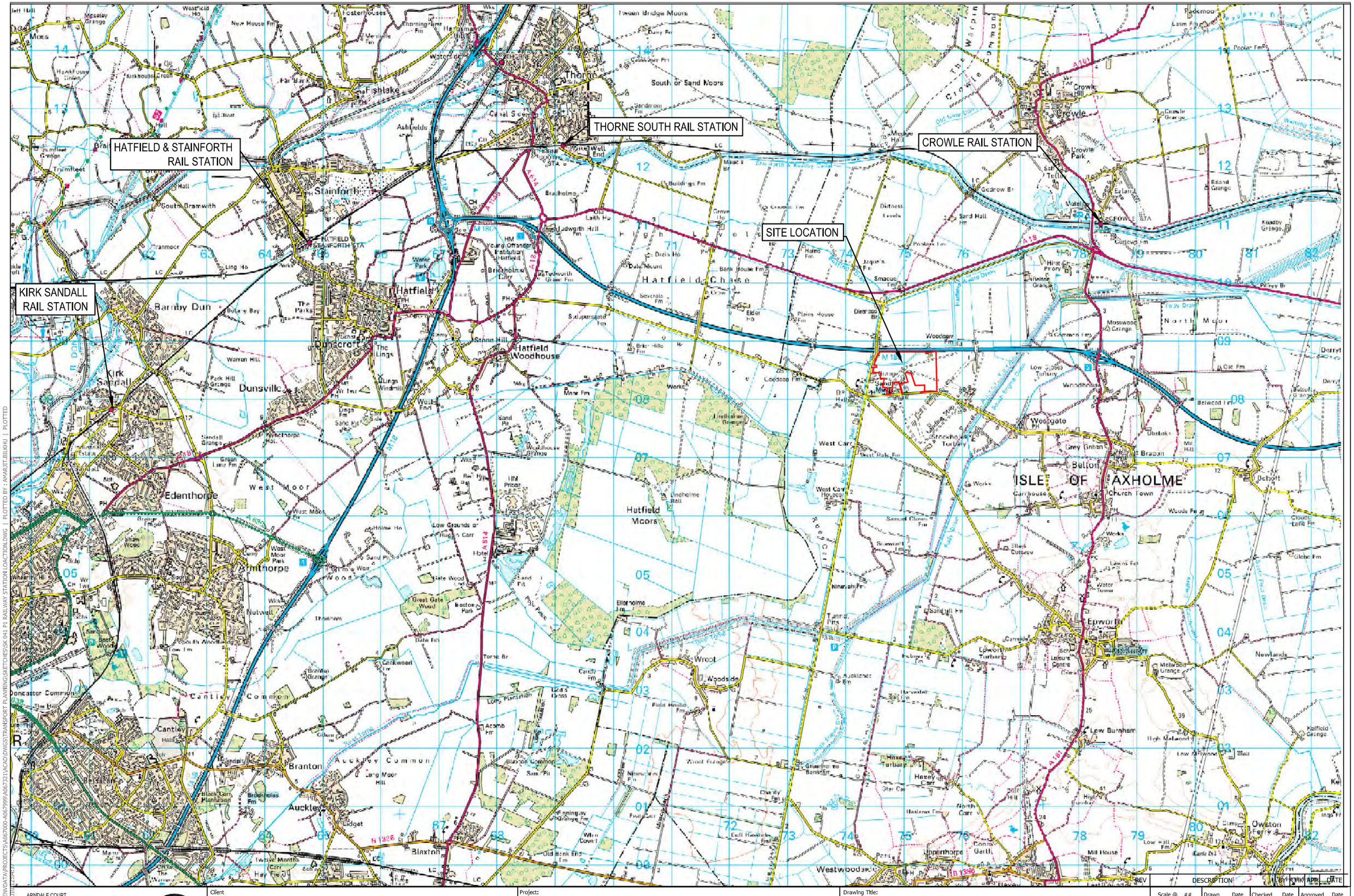
FILENAME : \\LEEDS2\ENVDATA\PROJECTS\A067000-A067999\A067321\ACAD\DWGS\TRANSPORT PLANNING\SKETCHES\SK 038 P1 LOCAL HIGHWAY NETWORK.DWG | PLOTTED
DATE: 14 December 2010 | PLOTTED BY : AMARJIT.BILKHU

Appendix D



ARNDALE COURT HEADINGLEY LEEDS LS6 2UJ TEL: +44 (0)113 278 7111 FAX: +44 (0)113 278 3487 e-mail: leeds@wyg.com	Client T A WHITE & SONS	Project: SANDTOFT	Drawing Title: RAIL FACILITIES

REV	DESCRIPTION	BY	CHK	APP	DATE

Scale @ ##	Drawn	Date	Checked	Date	Approved	Date
NTS	AB	DEC 10				

Project No.	Office	Type	Drawing No.	Revision
A067321	21	EPT	SK 041	P1

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Appendix E

SITE LOCATION

KEY

BUS STOP LOCATIONS

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Client: T A WHITE & SONS

Project: SANDTOFT

Drawing Title: EXISTING BUS STOP LOCATIONS

REV	DESCRIPTION	BY	CHK	APP	DATE

Scale @ ##	Drawn	Date	Checked	Date	Approved	Date
NTS	AB	DEC 10				

ProJect No.	Office	Type	Drawing No.	Revision
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Appendix F

SITE LOCATION

ARNDALE COURT
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Client: T A WHITE & SONS

Project: SANDTOFT

Drawing Title: 5KM CYCLE CATCHMENT AREA

REV	DESCRIPTION	BY	CHK	APP	DATE

Scale @ ##	Drawn	Date	Checked	Date	Approved	Date
NTS	AB	DEC 10				

Project No.	Office	Type	Drawing No.	Revision
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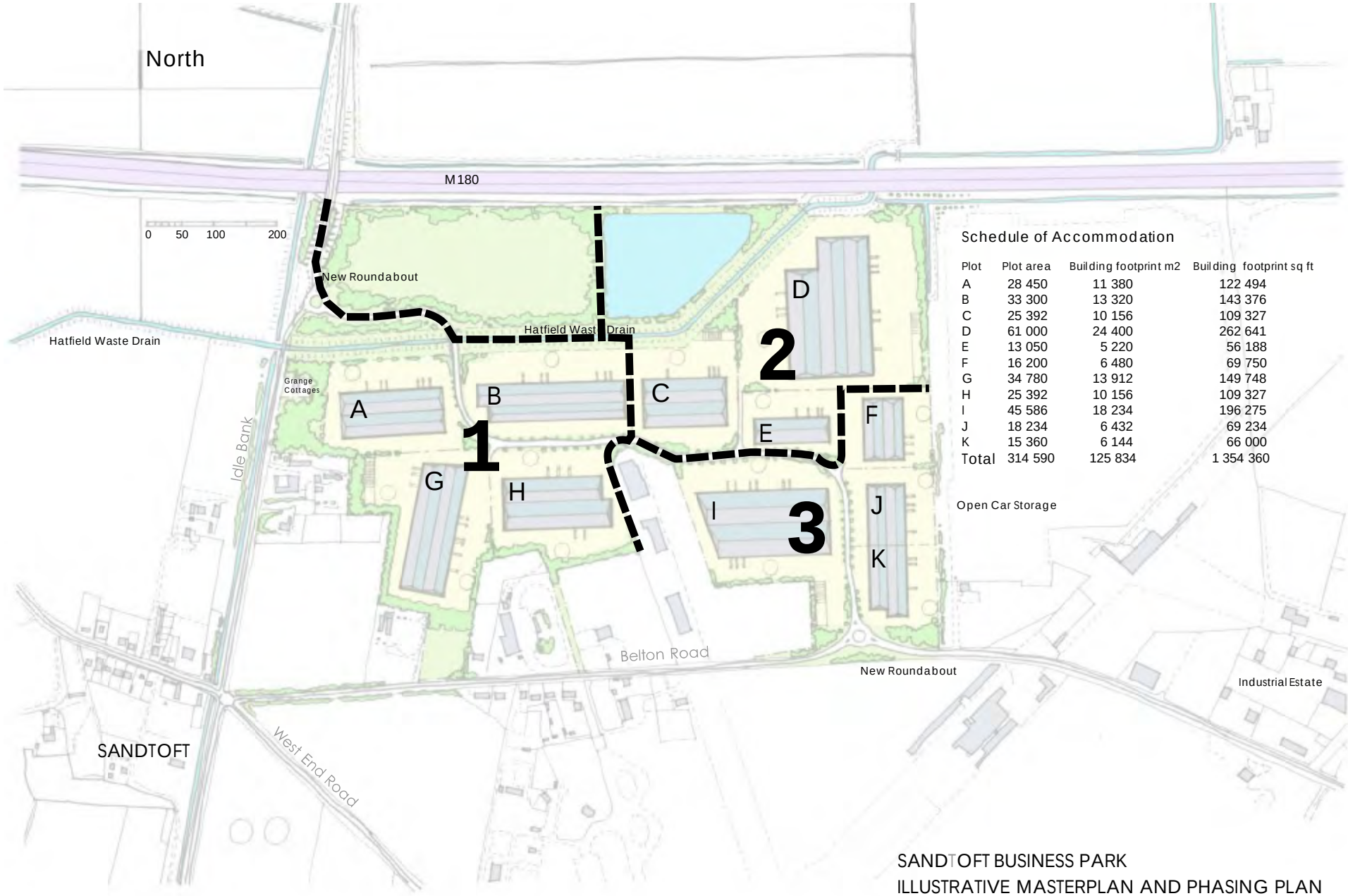
Appendix 3: Illustrative Masterplan and Phasing plan



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G	34 780	13 912	149 748
H	25 392	10 156	109 327
I	45 586	18 234	196 275
J	18 234	6 432	69 234
K	15 360	6 144	66 000
Total	314 590	125 834	1 354 360

SANDTOFT BUSINESS PARK
ILLUSTRATIVE MASTERPLAN AND PHASING PLAN

December 2014

scale 1:5000 at A3

Appendix 4: Flood Risk Assessment and Drainage Strategy

T A White and Sons

Sandtoft

Flood Risk Assessment

14th December 2010

REPORT CONTROL

Document:	Flood Risk Assessment Report
Project:	Sandtoft
Client:	T A White and Sons
Job Number:	A067321
File Origin:	N:\Projects\A065001 - A070000\A067321\reports\Flood Risk & Drainage\A067321 - Sandtoft FRA (MSE 07-12-2010).doc

Document Checking:

Primary Author	Matthew Elliott	Initialled:
Contributor	Daniel Alstead	Initialled:
Review By	Tom Beavis	Initialled:

Issue	Date	Status	Checked for Issue
1	09/12/10	DRAFT	
2	14/12/10	FINAL	
3			
4			

Contents

Appendices

1 EXECUTIVE SUMMARY

WYG has been appointed by T.A White and Sons Ltd to provide evidence in relation to the viability of allocating a site at Sandtoft in the Local Development Plan for Employment. This report specifically considers issues in relation to flood risk and drainage.

An evidence review has taken place, including site inspection and consultation with the Environment Agency, Severn Trent Water and the Internal Drainage Board. Information in respect to flood risk has been purchased from the EA and a minuted meeting conducted with Agency staff. It is noted that the EA Isle of Axholme Flood Study is due for pre publication consultation imminently and that this study will shed some light on flood risk and its management on this area.

The site is shown as being entirely within Flood Zones 2 and 3 on the EA flood maps. These maps ignore the presence of flood defences. The site is in fact defended against flooding from the River Trent (both fluvial and coastal) due to defences that provide protection up to a 1 in 200 (0.5% Annual Exceedance Probability (AEP)) event.

Flood risk at the site is complex and potentially arises from the River Trent, Hatfield Waste Drain, the River Torne and the local land drainage system. Additionally, secondary flood risks arise from potential failure of the defence systems. The defence systems constitute embankments, sluices and pumping stations.

In terms of policy, PPS 25 requires the Sequential Test to be passed if development (other than water compatible) is to be allocated in flood zones 2 or 3 (as defined by the EA flood maps). It is concluded that due to the specific employment opportunities offered by this site in terms of its size and location there are no sequentially preferable sites within a reasonable geographical search area.

If a site is to be brought forwards having passed the Sequential Test it is also necessary to pass the Exception Test. This requires, amongst other things, demonstration that the site can be developed safely without increasing flood risk to adjacent areas.

To ascertain whether or not the Exception test can be passed for a viable development at this site it has been necessary to make a preliminary evaluation of the flood risk at this site.

The EA consider that the primary flood risk to the site arises from the Hatfield Waste Drain and the River Torne. This report concludes that the flood risk from these sources would, in the first instance overflow into

the low lying land to the north of the M180 prior to flooding occurring on the site. This provides a massive volume to accommodate floodwater prior to the site being directly affected.

Secondary flood risks may arise at this site due to a failure or exceedance of the flood defence systems. This report concludes that due to the location of the site and the local topography, inundation of the site due to system failure would only occur in what would be a regional catastrophe. Even in these circumstances, this would be a disaster that would slowly unfold and therefore safe evacuation of the site is possible.

Given the complexity of the flood risk at this site and the potential for combinations of risks to arise, a precautionary approach to development is proposed within the masterplan considered in this study. This approach allows for potential changes in future policy that might occur within the contemplated lifetime of the development and emerging information on climate change and sea level rise that are likely to impact on the standard of defence provided in the region.

By adopting a sequential approach within the site boundaries to building location it is not proposed to build to the north of the Hatfield Waste Drain. This area will be utilised for managing surface water and ensuring that flood risk to the surrounding area is either unchanged or reduced.

Building finished floor levels are to be set at 2.0m AOD. This approach should ensure that the buildings can secure insurance cover and will be above, with an appropriate freeboard, any flood reservoir that could conceivably develop following a defence failure or exceedance.

Surface water drainage from the redeveloped site will be restricted to existing levels (noting that existing runways discharge into the North Idle Drain) on the assumption that existing greenfield areas will discharge at 1.4l/s/hectare. Sufficient space has been retained for the extensive attenuation that this will require. It will be necessary to drain the site via a siphon under the Hatfield Waste Drain into this facility.

It is not considered that foul drainage and effluent treatment present insurmountable obstacles.

It is concluded that the flood risk and drainage issues do not make allocation of this site for employment purposes inappropriate.

2 INTRODUCTION

WYG have been appointed by TA White and Sons to review the evidence base for the allocation of land at Sandtoft for employment purposes. The site is located directly to the south of the M180 motorway, approximately 15km west of Scunthorpe and 17km north east of Doncaster. The land is located on the former Sandtoft Airfield at Belton Road and is approximately 59Ha in area. Specifically this report considers the flood risk and drainage issues in relation to this land and its prospective allocation within local planning documents.

In preparing this report the site has been inspected, consultation letters have been issued to the Environment Agency (EA), Severn Trent Water, and the local Internal Drainage Board. Flood risk data has been purchased from the EA and a minuted meeting has been held with EA officers at their West Bridgeford Office. Correspondence is reproduced in Appendix D. LIDAR data has been purchased to provide topographical data of sufficient accuracy to allow an assessment of flood risk within the site boundaries to a level of detail sufficient to inform preliminary masterplanning and decisions in respect of the viability of the proposed development. A copy of a contour plan based on the LIDAR data together with the development proposals are contained in Appendix A. Additionally; a Groundsure Report has been consulted to provide historic information and geotechnical data in respect of the site.

The site is on land that has been artificially drained on account of its flat low lying aspect. As a result the flood risk issues at the site are complex with risks arising from the Hatfield Waste Drain (which runs through the site), the River Torne to the east and south of the site and the surrounding land drainage system (North Idle Drain to the west of the site and the area served by an EA pumping station which discharges into Hatfield Waste Drain at the north east corner of the site). Additionally, the site would be at risk from a breach or overtopping of existing defences on the River Trent due to either high fluvial flows or tidal surges. Finally, a further set of flood risks arise on account of potential pumping station failures given that the Hatfield Waste Drain, the River Torne and the land drainage system all rely on pumping where water level differentials make this necessary. The complex flood risk issues are in part the subject of a current study commissioned by the Environment Agency regarding drainage in the Isle of Axholme area. It is understood that this study will be published in draft for public consultation prior to finalisation. Final publication of this report is anticipated in 2011.

This report also considers how foul and surface water drainage of development on this site can be managed.

3 SITE DESCRIPTION

The site is broadly rectangular in nature being bounded by the M180 on the north, the road that runs parallel to North Idle Drain on the west and Belton Road to the south. The eastern boundary appears to represent a historic field boundary. Land immediately to the east of the site is used for storage of automobiles. The boundaries of the automobile park are provided with earth bunds as a security measure. Parts of the site along the southern and western boundaries are either not within the ownership of T A White and Sons or would not form part of an allocation for employment use.

Currently the site is occupied by a number of buildings and contains areas of impermeable surface that reflects its former use as an airport. The Hatfield Waste Drain runs through the site (from west to east). In the north eastern corner of the site, the Hatfield Waste Drain passes out of the site boundary northwards under the M180. As a result the north western quadrant of the site is to a certain extent severed from the remainder by the Hatfield Waste Drain. The north western quadrant is currently undeveloped and used for agricultural purposes.

The acquired LIDAR data shows that levels across the site are generally in the range 3.0m to 1.5m above ordnance datum (AOD). LIDAR data is accurate to plus or minus 150mm. Levels in the north west quadrant (to the north of Hatfield Waste Drain) are generally around 1.5m. Most of the area to the south of the Hatfield Waste Drain is around 2.0m AOD with the highest parts of the site are to the south and west. The LIDAR data indicates that the southern and western perimeters of the site are consistently above 2.5m. There is a localised low area in the east where levels fall to 1.0m. Screening and security bunds have been placed on the site relatively recently and these are not picked up on the LIDAR data.

The M180 is on an embankment along the northern boundary of the site. This embankment is dissected by bridges routing the Hatfield Waste Drain and the North Idle Drain under the motorway. An EA operated pumping station lifts land drainage disrupted by the construction of the M180 into the Hatfield Waste Drain. The EA have an access road to this facility which is located at the north east corner of the site.

An inquiry lodged with Severn Trent Water has confirmed that there are no public sewers within the vicinity.

4 EXISTING FLOOD RISK

The site is on land that has been artificially drained on account of its flat low lying aspect. As a result the flood risk issues at the site are complex with risks arising from the Hatfield Waste Drain (which runs through the site) the River Torne to the east of the site and the surrounding land drainage system (North Idle drain just beyond the western boundary of the site and the area served by the EA pumping station at the north east corner of the site). Additionally, the site would be at risk from a breach or overtopping of existing defences on the River Trent due to either high fluvial flows or tidal surges. Finally, a further set of flood risks arise on account of potential pumping station failure given that the Hatfield Waste Drain, the River Torne and the land drainage system all rely on pumped outfalls to deal with potential level differentials with in the receiving watercourse. The complex flood risk issues are in part the subject of a current study commissioned by the Environment Agency regarding drainage in the Isle of Axholme area. It is understood that this study will be published in draft for public consultation prior to finalisation. Final publication of this report is anticipated in 2011.

4.1 RIVER TRENT (FLUVIAL)

The River Trent is located approximately 10 km to the east of the site. The Hatfield Waste Drain, the River Torne and North Idle Drain (via North Engine Drain to which it connects) all discharge into the River Trent via a permanently manned pumping station located at Keadby (as can be seen from the excerpt from the EA flood map below).

The River Trent is provided with defences that provide protection up to a 1 in 200 year coastal (or tidal) event (0.5% Annual Exceedance Probability (AEP)) and to a 1 in 100 year standard fluvial event (1.0% AEP). Therefore, a high level of defence is provided to the site at Sandtoft against fluvial flooding from the River Trent. The EA have confirmed that key flood levels in the River Trent, to the east of the site, are as follows:

Return Period	Level above Ordnance Datum
1 in 10	5.45-5.47
1 in 100	5.83-5.86
1 in 200	5.85-5.88

However, there is a residual risk that would arise from breach of the defences or overtopping due to an event in excess of the defence standard. In respect of these residual risks it should be noted that the River Trent is generally isolated from the catchments of the Torne and Hatfield Waste Drain south of the M180. This is because a low ridge, of which the Isle of Axholme is a part, runs north to south. The A161 follows this ridge. A break in this ridge can be identified to the west of West Stockwith where the River Idle enters the River Trent. On the basis of a consideration of FZ 2 and FZ 3 extents it is possible that if a breach or overtopping could generate sufficient depth, in theory it could create a link to the site by backwatering of the River Idle catchment and overflow into the Torne catchment.

To the north of the M180, this ridge is less distinct, although not entirely absent.

The key issues in respect of breach analysis are:

(i) breach location,

(ii) the volume of water that can escape from the breach before measures are put in place to stem the flow of water (or flood water levels drop with the passing of the flood peak)

(iii) The speed at which the resultant flood will occur

(iv) The extent of the resultant flood (and its depth at specific locations)

Analysis of the above issues requires complex modelling and this is currently an area of innovative study and emerging practice. Current EA breach analysis, undertaken in 2005 indicates that the site is located within a breach reservoir. Details of the breach reservoir data have been requested form the EA. At this point in time, clarification as to the meaning of the data has not been received.

However, certain conclusions regarding River Trent breach or overtopping risks to the Sandtoft site can be drawn by an inspection of local topography:

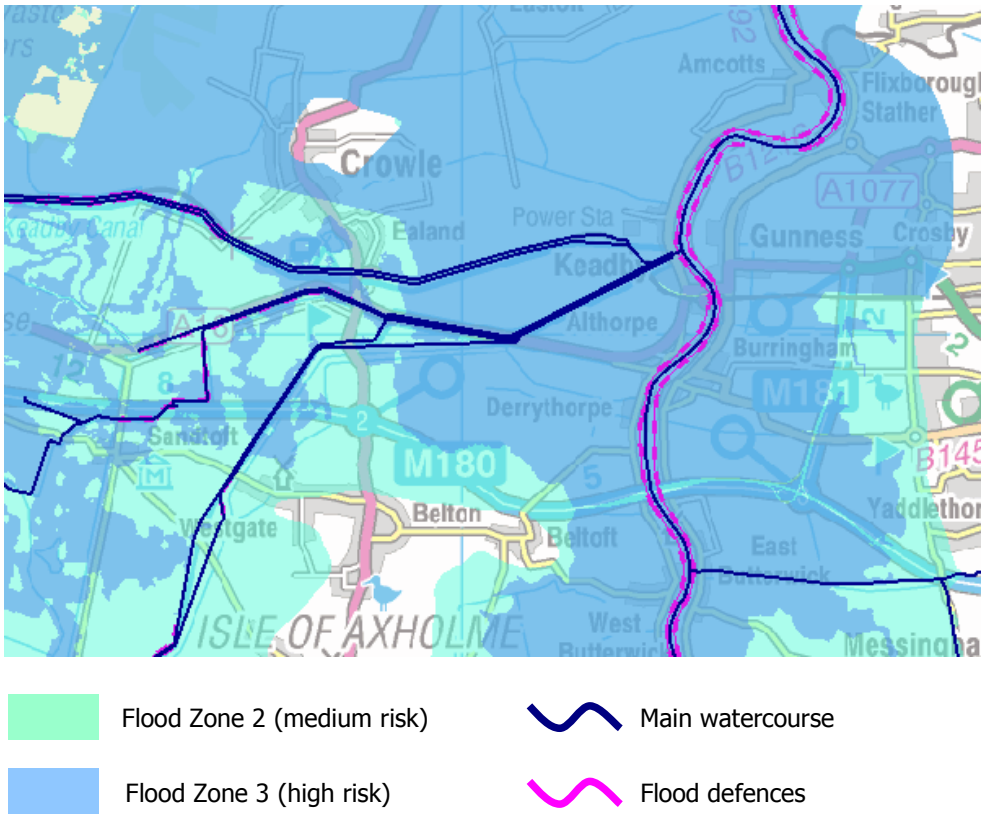
(i) In the event of a breach or overtopping of the Trent defences to the south of the M180 risks to Sandtoft are negligible because the area is generally separated from the potential breach reservoir by the ridge of higher ground that intervenes.

(ii) Any incursion of breach or overtopping water into the Sandtoft site would occur very slowly and with substantial notice. This point has been confirmed and agreed with the EA.

(iii) Breach or overtopping water would enter the site via rising levels in the following first: North Idle Drain and the land drainage system that is pumped into Hatfield Waste Drain at the north east corner of the site.

(iv) In the event of continued growth and deepening of the breach/overtopping reservoir water levels would rise in the Hatfield Waste Drain.

(v) In the event of a breach or overtopping of the Trent defences to the north of the M180 there is a substantial area of lower land that would be capable of absorbing a very large volume of water before the flood reservoir reached a level of 2.0m AOD. (This is the minimum floor level for proposed buildings on the site)



Flood Zone 2 (medium risk)

Flood Zone 3 (high risk)

Main watercourse

Flood defences

4.2 COASTAL FLOOD RISK

The EA approach to mapping of flood risk is to ignore the presence of defences. Given the potential severity of coastal flooding the standard considered is the 1 in 200 year event (0.5% AEP).

Without defences this area would be at risk from coastal flooding. The area is defended against tidal flooding with protection up to a 1 in 200 year standard. The defences are provided along the main tidally influenced rivers in the area. These constitute the Humber and the River Trent. The Hatfield Waste Drain, the River Torne and the local land drainage system are not influenced directly by coastal flooding as these discharge water into the potentially tidally influenced Trent.

However, as set out under considerations of fluvial flood risk from the River Trent, many of the considerations are of equal applicability to the flood risk issue. One of the key differences is that due to the tidal cycle breach or overtopping would only occur for defined periods coincident with high tide within the cycle.

The duration of overtopping is likely to be of such short duration as not to pose a risk to the site on account of the available storage prior to any inundation of the site. Sea levels will continue to rise in this area and the allowances in PPS 25 Annex A, Table B1) for the East of England, South of Flamborough Head relative to 1990 are set out in the table below.

Period	Net Sea Level Rise (mm/yr)
1990-2025	4.0
2025- 2055	8.8
2055-2085	12.0
2085- 2115	15.0

Ongoing increase in sea level has the effect of reducing the standard of defence of the measures currently in place. This report assumes that ongoing investment will continue in order to maintain current standards of defence.

4.3 HATFIELD WASTE DRAIN

The Hatfield Waste Drain enters the site from the west and runs at a higher level than the local land drainage system. To accommodate this difference in level the Hatfield Waste Drain runs across the top of

the North Idle Drain. Similarly the land drainage system to the east of the site and along the southern embankment of the M180 to the east of the site is pumped into the Hatfield Waste Drain via the EA pumping station at the north eastern corner of the site.

The catchment of the Hatfield Waste Drain extends to eastern Doncaster and Armthorpe. However, once the system drains to the east of the A614 and onto the Hatfield Moor local land drainage systems tend to capture most of the run off from the local area. The Hatfield Waste Drain is in its lower reaches primarily a conveyance system with only limited local inputs of water from local land drainage pumping stations (i.e. the EA pumping station at the north east corner of the site)

The EA have expressed the opinion that direct fluvial flooding from the Hatfield Waste Drain and the River Torne constitute the primary flood risk to the site.

The interface between the Hatfield Waste Drain, the North Idle Drain and the road bridge over the Hatfield Waste Drain create an unusual situation. The Hatfield Waste Drain passes over the North Idle Drain and bunds and walls on the side of the former prevent flows in normal circumstances spilling into the latter. However, the road bridge over the Hatfield Waste Drain presents a significant restriction providing a noticeably smaller area of flow that that provided by the upstream and downstream channels of the Hatfield Waste Drain. The road level (not to mention associated bridge walls) is at a higher level than the bunds at the side of the waste drain where it crosses over the North Idle Drain. Photographs of this arrangement are contained within Appendix C. Therefore, in the event that the conveyance capacity of the Hatfield Waste Drain through the bridge is exceeded, flows would spill into the local land drainage system (i.e. North Idle Drain) before impacting the Sandtoft site. This unusual arrangement of bridges is a listed structure and therefore seems unlikely to be modified. If water levels in the Hatfield Waste Drain build up behind the bridge, they will overflow into the North Idle Drain. It is therefore considered unlikely that a direct flood risk is presented to the site by the Hatfield Waste Drain. The risk would only arise in conjunction with a catastrophic flood event that led to overtopping first into North Idle Drain in conjunction with massive and widespread flooding of the entire area.

In the very severe 2007 flood event in this part of Yorkshire, fluvial flooding of the site from the Hatfield Waste Drain did not occur. Given the above, and assuming existing infrastructure remains in place, there is very little primary fluvial flood risk to the site posed by the Hatfield Waste Drain and any restrictions on its capacity within the site boundaries itself.

As has been mentioned above, the Hatfield Waste Drain relies on the manned pumping station at Keadby for its discharge into the River Trent when the level differential so requires. There is a secondary risk that in the event of a pumping station failure, flows in Hatfield Waste Drain might backwater and flood the site. However, given the substantial areas of land below the 2.0m contour downstream of the site, the possibility that a failure of the Keadby pumping station of sufficient duration in coincidence with a severe flood event would result in the subsequent flood reservoir encroaching the site would appear to be a very remote possibility. Assumptions in relation to this matter assume that backwatering of the Hatfield Waste Drain would result in overtopping of existing flood bunds on the drain resulting in flooding of adjacent land drains and adjacent low lying land before any overtopping within the site occurs. The North Lincs Strategic Flood Risk Assessment includes specific data regarding 'Compartment 3F4: 'Three Rivers' (see Appendix D). This is the hydrological zone in which the site lies. This document suggests that the standard of defence provided by defensive bunds on the Hatfield Waste Drain is only 1 in 10 year (i.e. 10% AEP). It therefore seems highly likely that overtopping onto the low lying land to the north and east of the site would occur.

Certain conclusions regarding a failure of the Keadby Pumping Station and its impact on the Sandtoft site can be drawn by an inspection of local topography:

(i) Any backwatering from the pumping station into the Sandtoft site would occur very slowly and with substantial notice.

(ii) The flood reservoir created by backwatering from the pumping station would encroach upon the site via rising levels in the North Idle Drain and other land drainage systems in the area.

(iii) In the event of continued growth and deepening of the failed pumping station flood reservoir water levels would rise in the Hatfield Waste Drain.

(iv) In the event of a pumping station failure and the a resulting flood reservoir, there is to the north of the M180 a substantial area of lower land that would be capable of absorbing a very large volume of water before the flood reservoir reached a level of 2.0m AOD. (This is the minimum floor level for proposed buildings on the site). This conclusion assumes that defences on the Hatfield Waste Drain downstream of the site are in places lower than 2.0m AOD this allowing flooding of the lower lying land prior to floodwaters reaching a level of 2.0m AOD on the site. Given that the defence standard of the Hatfield Waste Drain is only 1 in 10 year (ie 10% AEP). this seems a reasonable assumption.

4.4 RIVER TORNE

The River Torne catchment extends to the south east of Doncaster. The potential interfaces of the River Torne with the site have not been investigated in detail at this point in time (i.e. by purchase of topographic data and detailed survey of land drainage interfaces)

The EA have expressed the opinion that direct fluvial flooding from the Hatfield Waste Drain and the River Torne constitute the primary flood risk to the site. The North Lincs Strategic Flood Risk Assessment includes specific data regarding 'Compartment 3F4: 'Three Rivers' (see Appendix D). This is the hydrological zone in which the site lies. This document suggests that the level of defence provided by embankments on the side of the river (where necessary) is 1 in 30 year (30% AEP) if freeboard is taken into account.

The LIDAR data acquired for the site indicates that land above the 2.5m contour generally separates the site from the River Torne catchment to the south of the site. LIDAR data has not been acquired for areas beyond the site boundary. However, the following have been observed:

(i) Land is higher at the point where Belton Road crosses the River Torne, and at this location the Torne is not bunded due to the natural elevation of the land in this area.

(ii) A bridge, with associated side embankment, crosses over the M180 between the eastern boundary of the site and the River Torne. This breaks the bottom of embankment land drain and marks the eastern extent of the land drainage catchment that drains to the pumping station at the North East corner of the site.

It is therefore concluded that the site is protected from fluvial flooding from the Torne on its eastern boundary by land at an elevation of 2.5m or over that links into the M180 embankment.

However, there is clearly a potential for fluvial flooding from the River Torne to cause floodwater to raise the levels of the local land drainage system in the Sandtoft area. Precisely how this might occur requires an assessment of the potential interface points. At Tunnel Pits the southern extension of North Idle Drain is pumped into the River Torne. Inspection of North Idle Drain identifies that just to the south of Sandtoft; it has been deliberately blocked to isolate the northern section (which flows northwards) and the section to the south. It would appear therefore that there is no direct land drainage link south of the M180 that impacts the site with the River Torne. Such a linkage would only occur in the event of massive catastrophic area wide flooding.

In the very severe 2007 flood event in this part of Yorkshire, fluvial flooding of the site from any fluvial floodwaters form the River Torne entering the local land drainage system and raising levels did not occur. Given the above, there appears to be very little primary fluvial flood risk to the site posed directly by the River Torne.

Like the Hatfield Waste Drain, the River Torne enters the River Trent at the Keadby pumping station. The comments made in respect of the Hatfield Waste Drain regarding the secondary flood risk arising from a failure of Keadby Pumping Station apply equally to the River Torne.

4.5 LOCAL LAND DRAINAGE SYSTEM

The local land drainage system is managed by a number of Internal Drainage Boards. However, the pumping station that lifts water from the system intercepted by the M180 embankment to the east of the site is operated by the Environment Agency.

The land drainage system is generally the lowest level drainage system in the area. This is because its original and continued primary purpose is to lower groundwater levels to permit agriculture. The river systems (Hatfield Waste Drain and the River Torne) are required to convey water from the higher land to the east across what is reclaimed former marshland and wetland and into the River Trent.

The EA do not consider that the capacity of the land drainage system itself poses the primary flood risk to the site.

As the land drainage system generally serves much smaller catchments of agricultural land its capacity will be challenged by short duration events. The catchments of the river systems are substantially larger and are therefore most at risk from longer duration events.

In the event of an event causing levels to rise in North Idle Drain, this would overflow into the Hatfield Waste Drain before it posed a threat to the site. In the event that a rainfall event caused levels in the system served by the EA pumping station (Wood Carr Farm PS; see Appendix C for photograph) to rise this may impact on parts of the eastern site perimeter. Inspection of this system shows that it serves a relatively small area including the eastern part of the site. For the reasons explained above, it is considered that this system is, to all practical purposes, isolated from the Torne. Measures to mitigate risks arising from the land drainage system are dealt with below.

5 SUMMARY OF FLOOD RISK

As the above discussion demonstrates, the flood risks to this site are complex and necessarily inter related.

The EA are of the view that the primary fluvial flood risk to the site is due to the Hatfield Waste Drain and the River Torne. For the reasons set out above this report concludes that fluvial flooding from the Hatfield Waste Drain or the Torne would only occur following massive inundation of the low lying land to the north of the M180. The site is effectively protected by the 2.5m contour on the west, south and east.

The large areas of land to the north of the M180 which are below the 2.0m contour provides a very substantial volume for flood water storage before levels reach 2.0m AOD (the proposed FFL for the new development buildings). It is accepted that it is not possible to accurately establish a return period to a flood level of 2.0m AOD on the site without undertaking extensive surveys and complex modelling. However, the evidence would suggest that a 2.0m FFL would locate buildings above the 1 in 100 year flood line with an element of freeboard.

There are secondary flood risks at this site due to its reliance of defences.

Flood risk is not the same as hazard. Hazard considers the combined impact of the event occurring and its consequences. Generally, breach, overtopping and pumping station failure (i.e. defence system failures or exceedance) result in significant hazard. At this location, however, the following should be noted:

(i) The possibility of a defence failure or capacity exceedance occurring causing a resultant flood to reach the site boundaries is extremely remote. Such an event would be a regional catastrophe.

(ii) Should such an event occur, it would do so very slowly giving substantial opportunity for precautionary measures to be taken and site evacuation to be managed safely.

6 EXISTING SITE DRAINAGE

Inquiries with Severn Trent have confirmed that there are no public sewers within the site or the adjacent locality.

As a former airfield, there are substantial impermeable surfaces on the site. At this point in time an accurate measurement of the impermeable areas has not been undertaken. It is understood that the former runways were positively drained into North Idle Drain.

Land Drainage from the eastern part of the site discharges into the EA operated Wood Carr Farm PS (see Appendix C for photograph)

7 PLANNING POLICY AND FLOOD RISK

7.1 OVERVIEW OF POLICY AND RELEVANT DOCUMENTS

The key documents in terms of planning policy are PPS 25 'Development and Flood Risk' and the associated 'Practice Guide'. The core of the policy is the Sequential Test which seeks to direct new development to areas of least flood risk. Assessment of flood risk for the application of policy is in practice based on the EA flood maps. It is unfortunate for an area such as North Lincolnshire where there is much low lying land which benefits from defences, often of a high standard, that these defences are ignored by the EA flood maps. This can have the result of both overstating flood risk and disguising local flood risks.

7.2 SEQUENTIAL TEST

As stated above, the Sequential Test is a key component of flood risk policy and is a matter of substantial importance in low lying areas where there may be a shortage of developable land in Flood Zone 1 (as defined by the EA flood maps).

A Strategic Flood Risk Assessment (SFRA) is the key to application of the sequential test. The North Lincolnshire Council (NCL) SFRA was undertaken when PPG 25 was in force and is therefore due for replacement. It is understood that in the interim period NLC has prepared a Sequential Test of potential development sites in April 2010. This report demonstrates that the following:

- The Sandtoft site is the only site in North Lincolnshire which is available and of sufficient size for the proposed development.
- Other sites that may, on the face of it be suitable are also in Flood Zone 3.
- The site is appropriate to the development site.

Whilst it is acknowledged that the EA flood maps are the starting point for application of the sequential test, this report has identified that flood risk at this site (if defences are taken into account and local flood risks assessed) is, on the basis of evidence currently available, capable of development whereby buildings are provided with a defence against flooding that would appear to provide a 1 in 100 year standard with some freeboard.

7.3 EXCEPTION TEST

If a site is considered to pass the sequential test it is then necessary to demonstrate the exception test. The exception test requires the following issues to be addressed:

(a) It must be demonstrated that the site provides wider sustainability benefits to the community that outweigh flood risk

(b) The development must be on developable previously developed land

(c) An FRA must demonstrate that the development will be safe without increasing flood risk elsewhere.

With respect to item (a) of the exception test the proposed development of the Sandtoft airfield site for logistics and distributions purposes will provide employment opportunities for the local residents within the Aisle of Axholme. Development in this location will be supported by a robust Travel Plan, which will support access of the site by means other than by car. These travel planning measures as detailed above include the potential introduction of a shuttle bus to Crowle train station. The proposed link road through the site will enable existing HGV traffic operating at Sandtoft airfield to route through the site out to the A18. This will provide a number of environmental and amenity benefits to residents along Westgate Road, Belton and Sandtoft village. The development will allow North Lincolnshire to broaden its economic base in this part of the District and has the potential to reduce out commuting from within the Aisle of Axholme.

With respect to item (b) the part of the site proposed for development is the former Sandtoft Airfield. It is therefore, on previously developed land.

Finally , in respect of item (c) for the site to pass the exception test it must be demonstrated that the development will be (i) safe and (ii) can take place without increasing flood risk elsewhere (and, where possible, reducing flood risk overall).

The approach to satisfying these requirements is dealt with in detail below within the section entitled 'mitigation'.

8 PROPOSED MITIGATION

It has previously been demonstrated that despite the complex flood risks within the area, and the fact that the site is entirely within Flood Zones 2 and 3 on the EA flood maps, the actual primary flood risk to the site is overstated by the EA flood maps. This is because the mapping does not take account of flood defences. Unfortunately, in this locality, whatever the merits elsewhere of this approach to flood mapping, in this locality it obscures the issues and the risk.

The EA are of the view that the primary fluvial flood risk to the site arises from the Hatfield Waste Drain and the River Torne. This report concludes that the risk from these sources would only manifest itself via extensive flooding of the low lying land to the north of the M180.

Secondary flood risks arise from failure or exceedance of the various defence systems (flood banks, sluices and embankments). This report concludes that the potential for this to result in flooding of the site would only be in relation to a regionally catastrophic event. Furthermore, it concludes that should such an event occur, the impacts on the site would only occur very slowly giving adequate time for the safe evacuation of persons employed at the site.

A local source of flood risk would arise from floodwater building up behind the Wood Carr Farm PS (EA operated) at the north east corner of the site in the event of system exceedance or a pump failure.

Nonetheless, given the complexity of flood issues at the site and that how flood risk might change in this area during the contemplated lifetime of the development measures to mitigate flood risk are necessary. These are explained in detail below.

8.1 SEQUENTIAL APPROACH WITHIN THE SITE

The area to the north of the Hatfield Waste Drain is generally, the lowest part of the site. Adopting a sequential approach a decision has been taken not to construct new buildings within this area.

8.2 APPROACH TO SETTING FFLS

It is proposed to set building finished floor levels at a minimum level of 2.0m AOD. Adoption of this approach reduces to an absolute minimum the possibility of building flooding on account of a flood defence system failure or capacity exceedance. This report has concluded that by adoption of this approach the buildings will be provided with a defence against flooding that would appear to provide a 1 in 100 year

standard with some freeboard. As such, insurance should be readily available and there should be no danger to personnel within the buildings on account of either primary or secondary (ie defence failure or capacity exceedance) flood risk.

Adopting a sequential approach has meant that the area to the north of Hatfield Waste Drain will not be developed with buildings. It is proposed to use this area to attenuate surface water discharges and by local lowering of ground levels to provide the option of increasing flood storage within the site.

Lorry parks and car park levels will be set such that any displacement of floodwater on account of the building footprints is offset such that there is a net benefit in terms of flood risk through implementation of the proposals.

8.3 PLACE OF REFUGE

It is considered that the assessed flood risk at the site does not require the specific provision of a place of refuge. Furthermore, given the fact that the growth of a flood reservoir sufficient to inundate the site will occur very slowly, thus permitting adequate time for evacuation, a place of refuge is not required.

8.4 SURFACE WATER DRAINAGE

Existing surface water drainage from the airfield discharges in North Idle Drain. It is noted that the EA and the IDB would want future discharges form existing Greenfield areas to be limited to 1.4 l/s/ha. Given the large area available for attenuation (to the north of Hatfield Waste Drain) this should not be a constraint to the development. Connection form the site into this area will be via a siphon under the waste drain. The attenuation will be discharged by pumping at the agreed limitation into the appropriate land drainage network or Hatfield Waste Drain

9 CONCLUSIONS

The site is within FZ 3 and 2 on the EA flood maps (which ignore the presence of defences). However, Sequential Testing undertaken by NLC demonstrates that this is the most sequentially preferable site for this development.

The first two elements of the Exception Test are passed because (a) The development provides wider sustainability benefits to the community and (b) The site is on previously developed land

This assessment has demonstrated that the site can be developed safely without increasing flood risk elsewhere. The basis for this conclusion is that the fluvial flood risk to the site presented by the Hatfield Waste Drain and the River Torne would only occur from extensive flooding of the low lying land to the north of the M180.

The site is protected from inundation from the south, west and east by land above the 2.5m contour. Excessive flows in the Hatfield Waste Drain are prevented from entering the site by the existing arrangement of listed bridges at the interface of the North idle Drain, the Hatfield Waste Drain and the road along the western boundary.

Secondary flood risks arising from a failure of defence systems (either pumping stations or flood embankments) would only present a risk to the site following very extensive flooding of low lying land to the north of the M180. In the event that such a catastrophic event should occur its approach would be heralded by very extensive warning allowing timely and safe evacuation of the site.

A local flood risk arises from potential exceedance or failure of the Wood Car Farm PS (EA operated) at the north east corner of the site. The catchment of this station is small and any flooding would therefore occur with substantial notice and would not affect buildings with a FFL set at 2.0m AOD.

Building levels should be set at 2.0m AOD unless further detailed investigation justifies a relaxation. On the basis of the information assessed this would appear to provide a 1 in 100 year standard of protection with some freeboard.

Setting aside the area to the north of the Hatfield Waste Drain allows for adequate space to deal with surface water attenuation and opportunity to bring benefits in terms of providing increased flood storage within the area.

It is concluded that flood risk and drainage, if handled sensitively, are not an impediment to development of this site.

Appendix A

Site Layout (Existing and Proposed)

Schedule of Accommodation

Plot	Plot area	Building footprint m2	Building footprint sq ft
A	15 360	6 144	66 000
B	16 080	6 432	69 234
C	16 200	6 480	69 750
D	61 000	24 400	262 641
E	13 050	5 220	56 188
F	45 586	18 234	196 275
G	25 392	10 156	109 275
H	34 780	13 912	149 748
I	28 450	11 380	122 494
J	33 300	13 320	143 376
TOTAL	**314 590**	**125 834**	**1 354 360**

Proposed Distribution/ Warehouse Development
SANDTOFT
for
White Property Group
Proposed Site Layout
November 2010 scale 1:5000 at A3 Drawn SHS
10 009 SK 001 think architecture+design

DO NOT SCALE: CONTRACTOR TO CHECK ALL DIMENSIONS AND REPORT ANY OMISSIONS OR ERRORS

NOTES

1. THIS DRAWING TO BE READ IN ACCORDANCE WITH ALL OTHER RELEVANT WYG DRAWINGS, THIRD PARTY DRAWINGS, SPECIFICATIONS AND OTHER SUPPORTING DOCUMENTATION.

N

Drain
M180
North Idle Drain
Hatfield Waste Drain
Track
3m
Grange Cottages
Sewage Works (dis)
Ppg Sta
Airfield (disused)
Works
Depot
Sandtoft Grange
Sandtoft Transport Centre (Mus)
Pp Ho
Burntwood
BELTON ROAD
PH
Sandtoft
Sandtoft Hall
Ross Farm Bungalow

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0 25 50 75 100 125 m
SCALE 1:2500

DRAFT ISSUE

SUBJECT TO THE APPROVAL OF THE RELEVANT AUTHORITIES

REV	DESCRIPTION	BY	CHK	APP	DATE

ARNDALE COURT
HEADINGLEY
LEEDS
LS6 2UJ

TEL: +44 (0)113 278 7111
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Project:

Drawing Title:

Scale @ A1	Drawn Date	Checked Date	Approved Date
1:2500	NGP NOV 2010		

Project No.	Office	Type	Drawing No.	Revision
A067321	21	C	D100	P1

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Appendix B

Correspondences

Daniel Alstead
WYG Engineering Ltd
Arndale Court
Headingley
Leeds
LS6 2UJ

Our Ref: CS 30900/EC/JR

Date: 4th November 2010

Dear Sir

Provision of Product 4 for FRA/FCA/SFRA – Sandtoft Airfield, Belton Road, Sandtoft, DN9 1PH

Thank you for your request of 07/12/2010 to use Environment Agency data, Product 4, in the development of the FRA/FCA/SFRA/Strategic – Sandtoft Airfield, Belton Road, Sandtoft, DN9 1PN. The information is attached.

If you have requested this information to help inform a development proposal, then you should note the detail in the attached advisory text on the use of Environment Agency Information for Flood Risk Assessments / Flood Consequence Assessments.

This information is provided subject to the enclosed notice, which you should read.

Yours faithfully

STEVEN TUPPER
Team Leader - External Relations

For further information please contact External Relations on 0115 846 3696
Fax:- 0115 982 8319
Direct e-mail **midseast@environment-agency.gov.uk**

Enc. Detailed FRA/FCA Map
Standard Notice (Commercial)

CS30900

The following information has been produced including the effect of any local defences. The modelled extents map shows the flooding situation if the defences are partially removed.

Node point reference	Location	50% (1 in 2 year) modelled level (mAOD)	20% (1 in 5 year) modelled level (mAOD)	10% (1 in 10 year) modelled level (mAOD)
Trent17470	SE 83373 09402	5.45	5.62	5.69
Trent19400	SE 83091 07558	5.46	5.63	5.70
Trent21020	SE 83731 06070	5.47	5.63	5.71

Source: Tidal Trent Strategy, Black & Veatch, April 2005

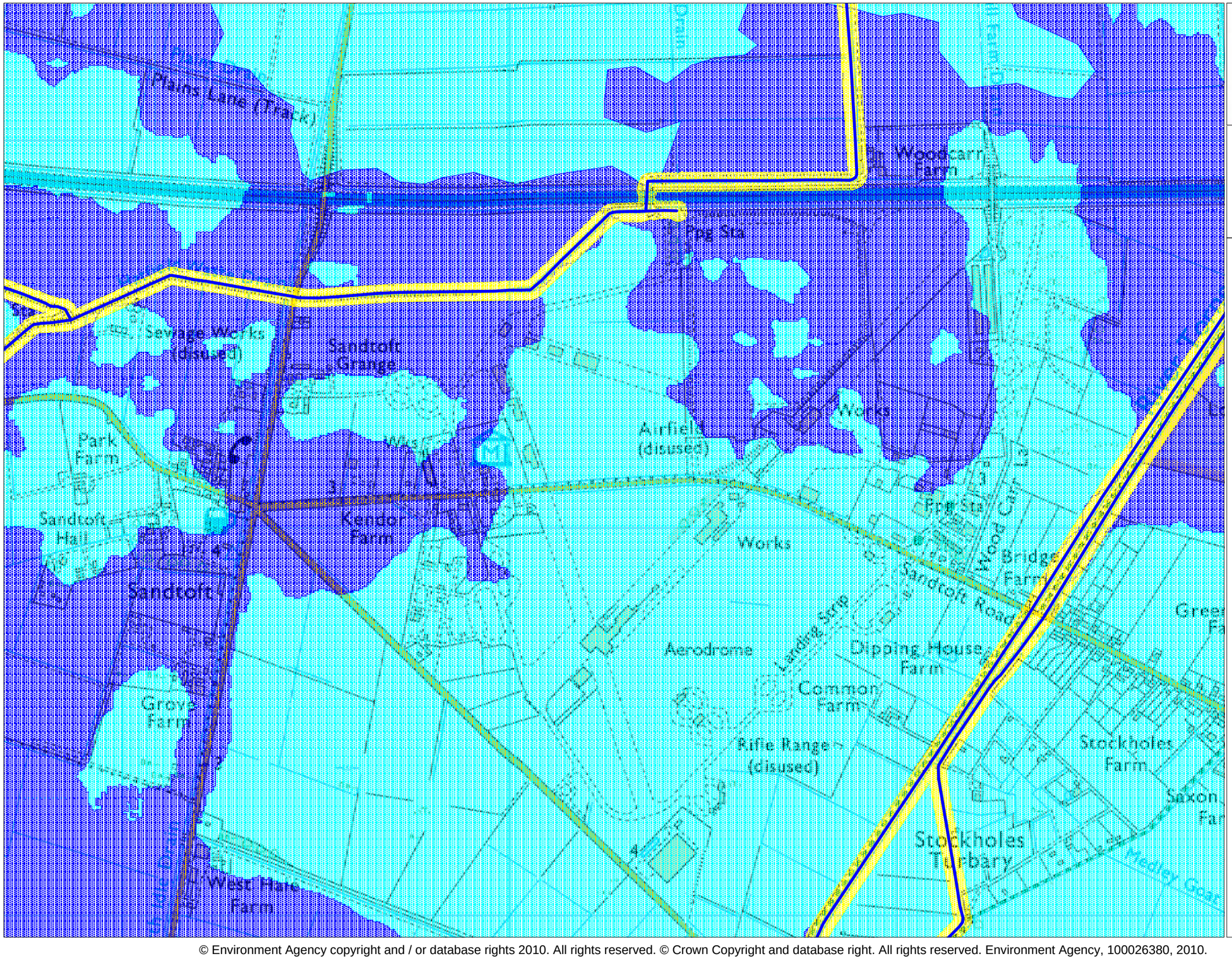
Node point reference	Location	4% (1 in 25 year) modelled level (mAOD)	2% (1 in 50 year) modelled level (mAOD)	1.33% (1 in 75 year) modelled level (mAOD)
Trent17470	SE 83373 09402	5.77	5.80	5.82
Trent19400	SE 83091 07558	5.78	5.82	5.83
Trent21020	SE 83731 06070	5.79	5.83	5.85

Source: Tidal Trent Strategy, Black & Veatch, April 2005

Node point reference	Location	1% (1 in 100 year) modelled level (mAOD)	0.5% (1 in 200 year) modelled level (mAOD)
Trent17470	SE 83373 09402	5.83	5.85
Trent19400	SE 83091 07558	5.85	5.87
Trent21020	SE 83731 06070	5.86	5.88

Source: Tidal Trent Strategy, Black & Veatch, April 2005

Detailed FRA/FCA Map centred on Belton Road, Sandtoft - created 3 November 2010 Ref: [CS30900]



Environment Agency

Scale 1:10,000

N
W E
S

Legend

- 0.5% (1 in 200 year) floodplain
- 0.1% (1 in 1000 year) floodplain
- Bank Top ePlanning Tool
- Main River

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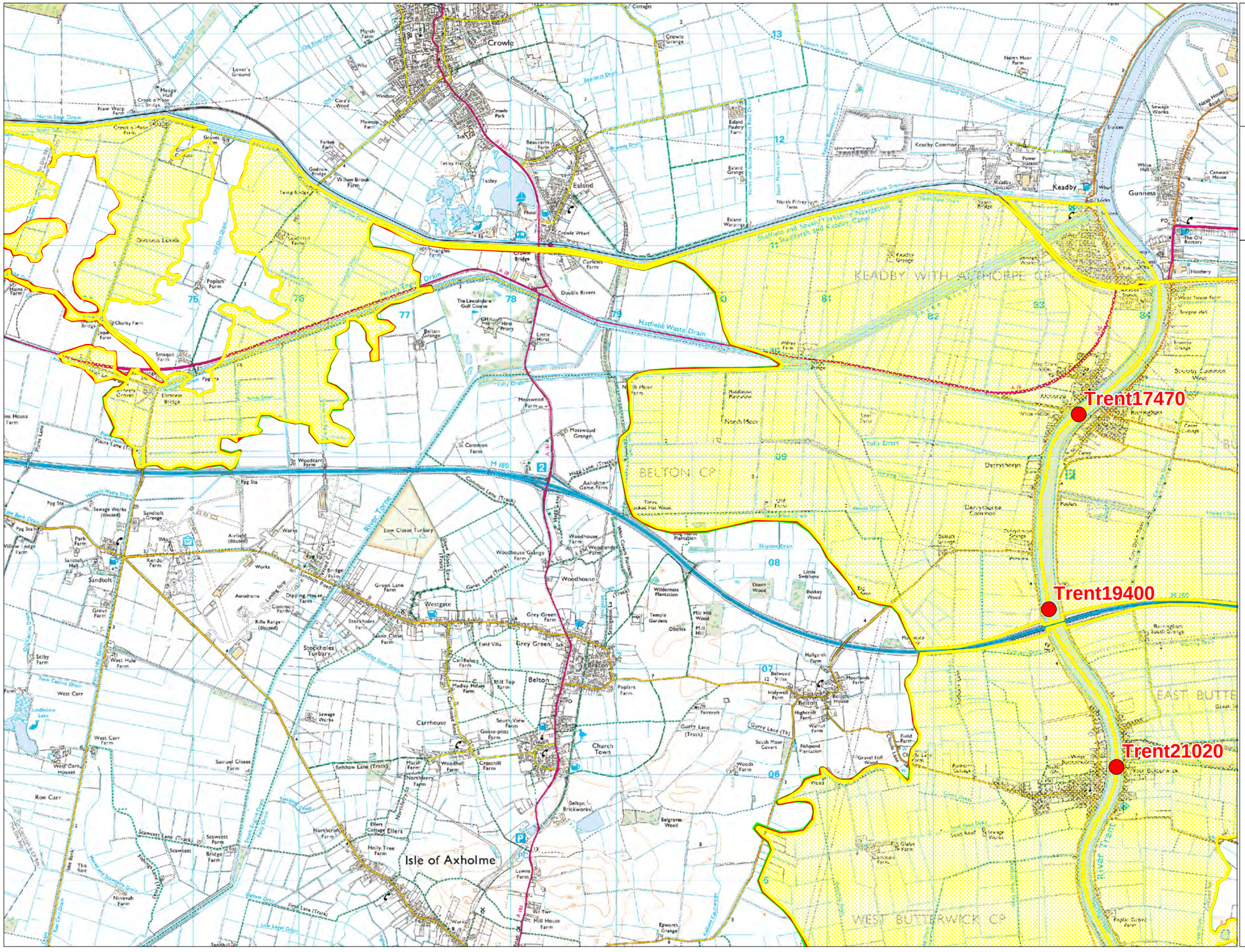
Contact Us: National Customer Contact Centre, PO Box 544, Rotherham, S60 1BY. Tel: 08708 506 506 (Mon-Fri 8-6). Email: enquiries@environment-agency.gov.uk

Modelled Extents Map centred on Belton Road, Sandtoft - created 3 November 2010 Ref: [CS30900]



Environment Agency

Scale 1:37,000

N W E S

Legend

- 1 in 75 year modelled outline
- 1 in 200 year modelled outline
- 1 in 1000 year modelled outline
- Modelled Node Location & Reference

Source: Tidal Trent Strategy, Black & Veatch, April 2005

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Contact Us: National Customer Contact Centre, PO Box 544, Rotherham, S60 1BY. Tel: 08708 506 506 (Mon-Fri 8-6). Email: enquiries@environment-agency.gov.uk

Daniel Alstead
WYG Engineering Ltd
Arndale Court
Headingley
Leeds
LS6 2UJ

Our Ref: CS 30900/EC/JR – follow on

Date: 2nd December 2010

Dear Sir

Request for information – Sandtoft Airfield, Belton Road, Sandtoft, DN9 1PN - Product 4 – follow on

Thank you for your letter requesting information about the above.

Please find attached the follow on information you have request in relation to the above site.

Yours faithfully,

STEVEN TUPPER
Team Leader - External Relations

For further information please contact External Relations on 0115 846 3696
Fax:- 0115 982 8319
Direct e-mail **midseast@environment-agency.gov.uk**

daniel.alstead

From: matthew.elliott
Sent: 06 December 2010 14:25
To: 'dan.widdowson@environment-agency.gov.uk'
Cc: 'Woolley, David'; daniel.alstead
Subject: FW: CS 30900/EC/JR - follow on

Dan,

Further to our meeting we have now received the requested information in respect of the breach reservoir flood depth for the site we are considering at Sandtoft. It would appear tom me that the breach reservoir in which Sandtoft lies is designated 'JJ' (Isle of Axholme). The absolute breach level corresponding to this reservoir is stated as being in the range 0.0 to -0.6 Above Ordnance Datum.

Would you be able to confirm to me that the above is a correct interpretation of the data purchased and sent via your External Customer Relations Team?

Regards

Matthew Elliott
Technical Director

Tel: +44 (0)113 2787111

WYG Engineering Ltd. Registered in England number: 1959704. Registered Office: Arndale Court, Otley Road, Headingley, Leeds, West Yorkshire LS6 2UJ VAT No: 431-0326-08

From: daniel.alstead
Sent: 02 December 2010 14:34
To: matthew.elliott
Subject: FW: CS 30900/EC/JR - follow on

Matthew, FYI we now have the breach maps/levels for Sandtoft.

Regards

Daniel Alstead

Tel: +44 (0)113 2787111

WYG Engineering Ltd. Registered in England number: 1959704. Registered Office: Arndale Court, Otley Road, Headingley, Leeds, West Yorkshire LS6 2UJ VAT No: 431-0326-08

From: MidsEast-MINOT [mailto:MidsEast@environment-agency.gov.uk]
Sent: 02 December 2010 13:47
To: daniel.alstead
Subject: CS 30900/EC/JR - follow on

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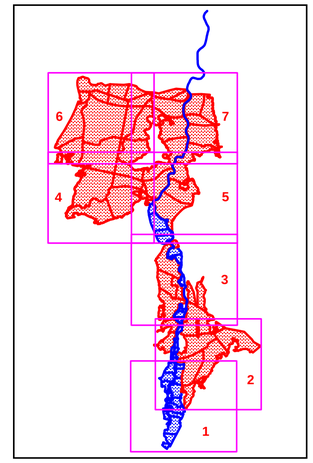
Designed	JMH	Date: Oct 04
Checked	TPMP	Date: Oct 04
Drawn	JMH	Date: Oct 04
Checked		Date:
Reviewed	TPMP	Date: Oct 04

Rev.	Nature of Revision	Drawn	Chkd.	Rvwd.	Appd.	Date



Key

- Model Reservoir Outline
- Breach Reservoir Outline
- Floodplain Unit
- ISIS Reservoir Unit
- Gauging Station
- Structure in Model
- Model Interconnection
- Major Embankment
- Minor Embankment

Interconnections between reservoirs are all modelled as floodplains. Connections between reservoirs and the river (not shown for breach reservoirs) are modelled as spills.

Tidal Trent Strategy

Geographical Layout of ISIS Model (6 of 7)

Environment Agency

Midlands Region

Contract no. 108638	Approved:	Date: April 05
BLACK & VEATCH Black & Veatch Consulting		Scale : NTS
		Drawing no. Figure F.3.6

P:\108638_Tidal_Trent_Strat_Ph2\60_Generated_documents\62_Generated_drawings\MapInfo\Figs3.wor, MH, CHE, Apr 2005, (c)BVCs

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Designed	JMH	Date:	Oct 04
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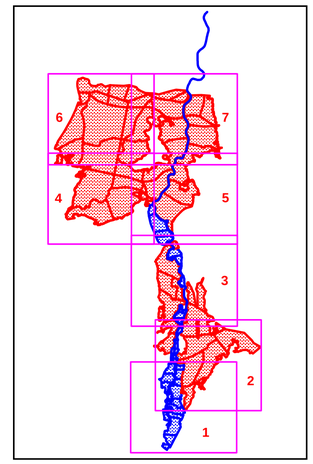
Drawn	JMH	Date:	Oct 04
Checked		Date:	
Reviewed	TPMP	Date:	Oct 04

Rev.	Nature of Revision	Drawn	Chkd.	Rvwd.	Appd.	Date



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- Floodplain Unit
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Tidal Trent Strategy

Geographical Layout of ISIS Model (7 of 7)

Environment Agency

Midlands Region

Contract no. 108638	Approved:	Date: April 05
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		Drawing no. Figure F.3.7

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5. Intellectual Property Rights

No Intellectual Property Rights are transferred or licensed to you save those which are expressly provided in this agreement

6. Assignment

You may not transfer or in any other way make over to any third party the benefit of this agreement either in whole or in part

7. Waiver

Failure by either of us to exercise or enforce any rights available to it, or any forbearance, delay or grant of indulgence, will not be construed as a waiver of rights under this agreement or otherwise

8. Entire agreement

This agreement constitutes the entire agreement between us and supersedes all oral or written agreements, representations, understandings or arrangements (whether previous, contemporaneous or future) relating to its subject matter. You agree to waive any right to rescind this agreement by virtue of any misrepresentation and not to claim damages for any misrepresentation that is not fraudulent

9. Severance

If any part of the agreement is found by a court of competent jurisdiction or other competent authority to be unenforceable, then that part will be severed from the remainder of the agreement which will continue to be valid and enforceable to the fullest extent permitted by law

10. Variation and Termination

This agreement may not be amended, modified, varied or supplemented but it may if both of us agree be terminated or replaced by a new agreement

11. Relationship of Parties

We are not in a partnership or joint venture, nor is either of us the agent of the other or authorised to act on behalf of the other

12. Rights Of Third Parties

No third parties shall have rights to enforce any part of this agreement under the Contracts (Rights of Third Parties) Act 1999

13. Governing Law

This agreement shall be governed and construed in accordance with English law

Use of Environment Agency Information for Flood Risk Assessments / Flood Consequence Assessments

Important

If you have requested this information to help inform a development proposal, then you should note the following:

In **England**, you should refer to the Environment Agency's Flood Risk Standing Advice and PPS25 and its associated Practice Guide for information about what flood risk assessment is needed for new development in the different flood zones. These documents can be accessed via:
http://www.environment-agency.gov.uk/research/planning/82587.aspx
http://www.communities.gov.uk/publications/planningandbuilding/pps25floodrisk
http://www.communities.gov.uk/publications/planningandbuilding/pps25practiceguide

You should also consult the Strategic Flood Risk Assessment produced by your local planning authority.

In **Wales**, you should refer to TAN15 for information about what flood consequence assessment is needed for new development in the different flood zones
http://new.wales.gov.uk/topics/planning/policy/tans/tan15?lang=en

You should also refer to any Strategic Flood Consequence Assessment produced by your local planning authority.

In **both England and Wales** you should note that:

1. Information supplied by the Environment Agency may be used to assist in producing a flood risk or flood consequence assessment (FRA/FCA) where one is required, but does not constitute such an assessment on its own.

2. This information covers flood risk from main rivers and the sea, and you will need to consider other potential sources of flooding, such as groundwater or overland runoff. The information produced by the local planning authority referred to above may assist here.

3. Where a planning application requires a FRA/FCA and this is not submitted or deficient, the Environment Agency may well raise an objection.

4. For more significant proposals in higher flood risk areas, we would be pleased to discuss details with you ahead of making any planning application, and you should also discuss the matter with the local planning authority.

daniel.alstead

From: Barrie Onions [Barrie.Onions@northlincs.gov.uk]
Sent: 08 October 2010 14:52
To: daniel.alstead
Cc: Sue Barden; Andrew Taylor
Subject: Fw: Sandtoft
Follow Up Flag: Follow up
Flag Status: Completed

Hello Daniel.

Sue has passed your query to me. I will try to respond appropriately as we are currently in the position of SFRA review.

You will be aware that the Council's web page relating to SFRA states that "the SFRA will shortly be reviewed to take account of new data, which is to become available and to reflect the new Planning Policy Statement (PPS25). **Until it is reviewed it is advised that the SFRA and PPS25 be used together for managing development and flood risk**." This is still the case although we have largely completed the SFRA Review, but still have certain issues to resolve with the EA so we cannot publish this Review at present. It is therefore advised that you closely liaise with the Environment Agency (EA) in addition to North Lincolnshire Council - this would be good advice whatever the circumstances as your site lies within flood zone 2/3a (as you acknowledge). I will also make you aware that the SFRA Review in agreement with the EA has combined flood zones 2 and 3a - these are referred to as SFRA flood zones and not PPS25 flood zones. PPS25 EA zones 1, 2, 3a and 3b do not factor in climate change assessments or historical flood risk from all sources of flooding. Also you should be aware that the existing SFRA is not fully compliant with the latest PPS25 as it only includes an assessment of 50 years climate change and does not distinguish between Level 1 and Level 2 assessments. The SFRA Review will be PPS25 fully compliant by including 100 years of climate change assessment and Level 1 and Level 2 assessments based on the most up to date Lidar mapping and flood modelling.

However, despite this situation, hopefully i can help. In the SFRA and review your site is classified as being within Flood Compartment "3F4 Three Rivers". Your specific questions are answerred to the best of my knowledge as follows:-

- The council have studied historical flood complaints in the SFRA and because essentially of the summer 2007 floods the SFRA Review has updated these historical records. I can inform you that this has revealed no records of flooding at the site outlined on your map. However, you will need to consider the following. The EA shows a map that notates a blanket coverage of the Isle of Axholme having historical flood records - this includes your site. The council has no records of any detail of this EA historical flooding map. The EA are currently carrying out a flood mananagement study of the Isle of Axholme (i believe it includes your site) - the results of this study were due to be published by the end of September 2010, but we still await this EA publication. On both these EA issues you will have to consult with the EA directly, although hopefully soon the council will be in a position of more knowledge on these matters and the forthcoming EA anouncement on the Trent Catchment Flood Management Plan. In carrying out the Isle of Axholme Study it is understood that the EA have included substantial flood modelling of the area. Another source of records will be the Isle of Axholme Drainage Board, but they have been consulted as part of the SFRA and SFRA Review processes.
- Your second two bullet points about flood defence and sources of flood risk, i think are best answerred by referring to the attached text extract from the SFRA Review.
- Your last bullit point regarding environmentally sensitive receptors - i would suggest you contact in addition to the EA, the council's ecologist, Andrew Taylor on 01724

297370. I have copied Andrew in to give him some background to the query. Andrew might be able to help you further, but the issue does seem to more about water quality.

Further information - the council have commissioned Halcrow to carry out an Outline Water Cycle Strategy for North Lincolnshire and we are currently nearly ready to complete. This WCS may also be of assistance once it becomes available - hopefully in late October/November 2010. The WCS strategic approach provides a plan and programme of Water Services Infrastructure implementation. It is determined through an assessment of the environment and infrastructure capacity for:-

- Water resources and water supply
- Wastewater collection. treatment and disposal and water quality
- Flood risk and surface water management
- Biodiversity and ecology.

I hope this e-mail is of assistance.

Kindest Regards Barrie.

-----Forwarded by Barrie Onions/PL/NorthLincs on 08/10/2010 12:10PM -----

To: Barrie Onions/PL/NorthLincs@NorthLincs
From: Planning/PL/NorthLincs
Sent by: Sue Barden/PL/NorthLincs
Date: 07/10/2010 02:38PM
Subject: Fw: Sandtoft

Hi Barrie,

Planning has received this e-mail re: flooding at Sandtoft, see below, however we cannot help this gentleman with the information he is requesting. Can you help him at all or do we need to direct him towards the Environment Agency.

Kind Regards,
Sue Barden
Planning Support Officer
Tel: 7424
-----Forwarded by Sue Barden/PL/NorthLincs on 07/10/2010 02:35PM -----

To: <planning@northlincs.gov.uk>
From: "daniel.alstead" <daniel.alstead@wyg.com>
Date: 07/10/2010 02:26PM
cc: "matthew.elliott" <matthew.elliott@wyg.com>
Subject: Sandtoft

To whom it may concern

PROPOSED DEVELOPMENT: SANDTOFT AIRFIELD, BELTON ROAD, SANDTOFT, DN9 1PN

WYG is investigating flood risk and drainage information in respect of the former Sandtoft Airfield, just off Belton Road (DN9 1PN). The site is shown on the enclosed attached location plan.

We are aware that the site lies in Flood Zone 2/3 and that there is a Strategic Flood Risk Assessment available, however would be grateful if you could provide us with further information as listed below:

- Do you have any records of historical flooding or other flood data for the site? If you are aware of historical flooding at the site, can you please provide us with details of these historical flood events where it is available, including flood levels, estimated return periods, photographs, and other such data as may be relevant to our study?

- Please provide us with details of flood defences, if any, that may affect the flood risk at the site. If there are flood defences protecting the site, please can you also provide us with any available information regarding the impact of possible breaches of these defences?

- Are you aware of any other sources of flood risk to the site, other than the River Torne, Hatfield Waster Drain and North Idle Drain?

- Please can you also indicate to us whether you are aware of any relevant environmentally sensitive receptors (such as aquatic wildlife in receiving watercourses, etc.) in the area around the site that we should be aware of when preparing this Flood Risk Assessment?

Thank you for your assistance in this. Should you have any queries, please call me on 0113 2787111.

Regards

Daniel Alstead
Assistant Engineer

WYG ENGINEERING LTD
Arndale Court, Headingley, Leeds, LS6 2UJ
Tel: +44 (0)113 2787111
Fax: +44 (0)113 2783487

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Winner Sustainable City Award for Sustainable Building 2008

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daniel.alstead

From: Laura.Lewis@severntrent.co.uk on behalf of new.connections@severntrent.co.uk
Sent: 14 October 2010 10:59
To: daniel.alstead
Subject: Re: Sandtoft
Follow Up Flag: Follow up
Flag Status: Red

Good morning and thank you for your recent email. Please accept my apologies for the slight delay in response, we had to check with our Asset Protection department that the developer enquiry application would provide you with all the information you need. They have confirmed that this is the case, and I have sent under separate cover the relevant application form you will need to complete in order to obtain a response.
Kindest regards
New Connections
Tel : 0800 707 6600
Fax : 0845 603 6792
new.connections@severntrent.co.uk

New Connections
Severn Trent Water Ltd.
PO BOX 5309
Coventry
CV3 9FH
If you wish to respond to us regarding this email please forward your reply to "new.connections@severntrent.co.uk". Replying to the sender of this email may cause a delay or failure in our response.

"daniel.alstead" <daniel.alstead@wyg.com>

"daniel.alstead" <daniel.alstead@wyg.com>
07/10/2010 12:34

To: <new.connections@severntrent.co.uk>
cc: "matthew.elliott" <matthew.elliott@wyg.com>
Subject: Sandtoft

forwarded to net dev east to see if this is appropriate for a developer enquiry to be sent out to the customer. CL 07/10/10
To whom it may concern

PROPOSED DEVELOPMENT: SANDTOFT AIRFIELD, BELTON ROAD, SANDTOFT, DN9 1PN

Severn Trent Water responded to an enquiry regarding sewer records to WYG (dated 16-02-2009, STW Ref: RMC34044) for a site at Sandtoft, DN9 1PN. A copy of the STW response has been attached along with a site boundary map and a site location map.

Furthermore, in relation to this proposed development, we would be grateful if you could provide us with the following information:

- The response indicated that there were no sewers recorded on site. Please could you inform me whether this information still stands? If the information has changed we would need to purchase a copy of the sewer maps. I have attached a completed STW request form and await instruction as to whether we will need to purchase a sewer map, after which I can send a cheque payment. I presume you may need to coordinate a response to this enquiry with Asset Data Management, therefore could you please pass this request and site plans onto them?

- Is the site at risk of flooding from the existing drainage system? Do you have any records of historic flooding?

- Can you please confirm whether any of the sewers within the area around the site (foul, surface or combined) have a history of surcharging, or whether there are likely to be any potential constraints to a free (i.e. not surcharged) discharge of flows from the site?

Thank you for your assistance in this. Should you have any queries, please call me on 0113 2787111.

Regards

Daniel Alstead
Assistant Engineer

WYG ENGINEERING LTD
Arndale Court, Headingley, Leeds, LS6 2UJ
Tel: +44 (0)113 2787111
Fax: +44 (0)113 2783487

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Winner RoSPA Occupational Health and Safety Gold Medal Award 2009
Winner Contract Journal Consultancy of the Year 2008
Winner Sustainable Energy Ireland Awards 2008
Winner ACEI Innovation Award 2008
Winner Sustainable City Award for Sustainable Building 2008

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If verification is required please request a hard-copy version. *(See attached file: STW response.pdf)(See attached file: Request Form STW - 07-10-2010.pdf)(See attached file: Appendix 1 - Strategic Location Map.pdf)*

(See attached file: 5875-203 Site Plan - without house and Barns.pdf)

****

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18 FEB 2009

Severn Trent Water

SEVERN TRENT WATER Ltd
Waterworks Road
Edgbaston
Birmingham
B16 9DD

Tel 0845 601 6616
Fax 0121 452 3569

Direct Line **0845 601 6616**
Contact
Your Ref S Mann
Our Ref RMC34044
16/02/2009

Apparatus Location Enquiry

Further to your enquiry re: Sandtoft Airfield Belton Road DN9 1PN

May I advise you that Severn Trent Water has no record of any sewers within the vicinity of the designated area shown on your plan. However, development may have taken place for which we have not received any information and this should be anticipated during any excavation.

The area covered by your plan for clean water does not fall within the Severn Trent region. For details of existing water mains you may need to contact :-

Anglian Water (Asset Information Team)
P.O. Box 486
Huntingdon
PE29 6YN
Tel: 01480 323891
Fax: 01480 323892

This enquiry has now been closed. No charge has been made.
Please find your enquiry with cheque 062875 attached.

Records Management Centre

Appendix C

Photographs

Hatfield Waste Drain running over North Idle Drain

Bridge

Woodcarr Farm Pumping Station

Appendix 5: Highways and Access Technical Note

TECHNICAL NOTE

Transportation Planning : Infrastructure Design

SANDTOFT BUSINESS PARK (Policy SANE-1)
NORTH LINCOLNSHIRE HOUSING AND EMPLOYMENT LAND ALLOCATIONS DPD
GWB/14941/TN01 – 01 December 2014

1. Detailed highways work has been carried out as the allocation at Sandtoft Business Park (Policy SANE-1) has been promoted through the Local Development Framework (LDF), and ultimately identified in the adopted Core Strategy as a strategic employment allocation. This work includes Highways Evidence Base (prepared by WYG) and a Framework Travel Plan (prepared by WYG). The key aspects of both documents are considered below.

Highways Evidence Base

2. At this stage it is proposed the site will have two means of access from Idle Bank and Belton Road. It is anticipated that both points of access will be roundabouts.

3. The roundabout on Idle Bank will provide access to and from the site to the north. The route to and from the strategic highway network along Idle Bank to the A18 and then Junction 1 and Junction 2 of the M180 will provide the main route to the site for all development generated traffic and the principal route for HGV's.

4. The second roundabout will be located on Belton Road and will be predominantly used by cars and LGV's. These two roundabouts will be connected by an internal link road running through the site from south-east to north-west. HGV traffic will be prevented from passing through Belton by a Traffic Regulation Order prohibiting HGV's and a series of traffic calming and traffic management measures for which a preliminary design has been produced.

5. The site benefits from being within the catchment area of a relatively uncongested part of the strategic road network. At this stage, the following off-site highway improvements are anticipated to be required at the planning application stage :-

    - A18/A161 Double Rivers Junction;
    - A18/High Levels Bank;
    - Idle Bank Bridge over M180;
    - Traffic Calming along Westgate Road/Belton Road;and

- A Supplementary Signing Scheme.

6. These works are considered to be deliverable and viable.

7. A new bridge over Hatfield Waste Drain is proposed, the detailed design of which will be considered in detail as part of a future planning application.

8. The site is proposed to come forward in three phases as shown on the Illustrative Masterplan and Phasing Plan. Phases 1 and 2 are proposed to be accessed via the Idle Bank roundabout and Phase 3 will deliver the roundabout on Belton Road and the completion of the internal link road through the site. The delivery of the infrastructure improvements will be also be phased accordingly so as to mitigate the impact of the development as the scheme is built out.

9. The Highways Evidence Base report assessed generated traffic flows based on a Gross Floor Area (GFA) of 165,000m2 of development and the resulting traffic impact was assessed. The actual quantum of development is now expected to be less than this so the resulting analysis is extremely robust. The total vehicular trips associated with all peak period traffic movements at the site were previously estimated as being 199 arrivals and 104 departures during the AM peak; and 115 arrivals and 246 departures in the PM peak.

10. The traffic impact study assessed the impact of the development on:-

- The M180 at Junctions 1 and 2;
- The M18 at junctions 2, 3 and 5 (M180 Junction 1);
- The A18 at the junctions with the A614 (Tudworth Roundabout) and the A161;
- The A161 at the junctions with the M180 and the A18;
- Idle Bank; and
- Sandtoft Road/Belton Road/Westgate.

11. The results of the study of the junctions and the links identified above shows that the generated traffic flows associated with the development will not have a detrimental effect upon the operation of the local and strategic highway network.

12. The Highways Evidence Base demonstrates that there is no highways reason why the allocation is not deliverable. Access to the site can be achieved safely, the traffic impact of the

development can be mitigated by appropriate highway improvements and the impact on the wider network will not be detrimental.

Framework Travel Plan

13. A Framework Travel Plan has been prepared in support of the proposed allocation. This has adopted a comprehensive yet realistic approach and demonstrates that the site is accessible by all modes of travel and sets out a series of practical and deliverable measures to improve access to the site by sustainable modes of travel.

14. In due course, the Framework Travel Plan will form the basis of an overarching Travel Plan for the whole of the site when it is brought forward. The Framework Travel Plan will set out the principles for travel planning on a site wide basis and will provide a framework for Travel Plans for individual plots within the site as the development is built out.

15. Opportunities for sustainable travel include:-

- Crowle Railway station which lies 6.5km to the north-east of the site and benefits from a 30 minute service between Doncaster, Sheffield, Scunthorpe , Grimsby and Barnetby, which serves Humberside Airport.
- The 292 and 58 bus services which operate along Belton Road. Whilst these services are relatively infrequent they do provide a starting point from which service frequencies and routes will expand as the site is built out and demand for bus travel increases.

16. The need to travel will be reduced by the introduction of measures such as:-

- Recruitment of local staff;
- Issue of Travel Packs to all new employees;
- Provision of on-site facilities such as cash machines, sandwich shops, cafes;
- Providing travel information throughout the development and within individual plots;
- Appointment of a Travel Plan Coordinator with the necessary funding to deliver a successful travel related outcomes;
- Publicising the Travel Plan through a web site which will be set up specifically for the Sandtoft site. This will provide access to up to date travel information; travel related initiatives; car sharing opportunities; bus, train and shuttle bus routes and times;

contacts of the Travel Plan Coordinators for individual plots on the development and any other relevant travel related information.

17. Incentives in the Travel Plan to reduce car dependency include:-

- Promoting car sharing;
- Guaranteed ride home for employees in emergencies;
- Car share car parking spaces; and
- Financial incentives and prizes to encourage sustainable travel.

18. Measures to promote public transport include for the provision of a shuttle bus between the site and Crowle Station. This could be implemented on a phased basis as the development is occupied. It is anticipated that there will be three shuttle trips between Crowle Station and the site in the both the morning and evening peak periods.

19. Measures to improve walking and cycling include;-

- Provision of footways and cycleways within the site, with links to existing routes;
- Provision of showers, changing facilities and lockers as an integral part of each plot; and
- Assisted cycle purchase schemes, bike maintenance sessions etc.

20. The Framework Travel Plan includes for the production of monitoring reports to quantify the effects of the Travel Plan. This will enable NLC Highways to monitor progress against a set of realistic targets. The Framework Travel Plan will provide flexibility throughout the lifetime of the development to bring forward new initiatives as the development is built out.

21. The Framework Travel Plan demonstrates that a package of meaningful measures can be implemented to ensure that the site is readily accessible by all modes of travel. It has therefore been demonstrated that the whole development could operate in a sustainable manner in respect of travel and access.