



Strawsons Property

Witham St Hughs, Lincolnshire

A scheme for the delivery of outdoor playing fields

Discharge of Planning Condition 27

October 2022



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CONTENTS

1.0 INTRODUCTION & POLICY BACKGROUND 2

2.0 LOCATION OF THE PLAYING FIELDS 8

3.0 GROUND CONDITIONS - DRAINAGE AND TOPOGRAPHY 8

4.0 DESIGN 9

5.0 MAINTENANCE 14

FIGURES

- 1: Site Location
- 2: Illustrative Masterplan
- 3: Soil Types
- 4: Topographical Survey
- 5: Phase 3 Drainage Strategy
- 6: Phase 3 Earthworks Strategy
- 7: Sports Pitch Layout

1.0 INTRODUCTION & POLICY BACKGROUND

- 1.1 The purpose of this document is to outline a scheme for the delivery of outdoor playing fields to discharge Condition 27 of the Outline Planning Permission (North Kesteven District Council Ref. 15/1347/OUT) which states:

'Prior to the commencement of any development, a scheme for the delivery of the outdoor playing fields shall be submitted to and agreed in writing with the District Planning Authority (following consultation with Sport England). The scheme shall comprise:

- i) Details of the location of the playing fields;*
- ii) A detailed assessment of the ground conditions (including drainage and topography) of the land proposed for the playing fields which identifies constraints which could affect playing field quality; and*
- iii) Based on the results of the assessment to be carried out pursuant to (ii) above, a detailed scheme which ensures that the playing fields will be provided and maintained to an acceptable quality. The scheme shall include a written specification of soils structure, proposed drainage, cultivation and other operations associated with grass and sports turf establishment and a programme of implementation.*

The approved scheme shall be carried out in full and in accordance with a phasing plan agreed with the District Planning Authority (following consultation with Sport England). The land shall thereafter be maintained in accordance with the scheme and made available for playing field use in accordance with the scheme in perpetuity.

Reason: To ensure that the playing field is prepared to an adequate standard and is fit for purpose, and to maintain the quality and quantity of playing field provision in the interests of visual and residential amenity to accord with policies LP24 and LP26 of the Central Lincolnshire Local Plan 2017, and to accord with Chapter 8 of the NPPF.

National Planning Policy Framework (NPPF, 2021)

- 1.2 The National Planning Policy Framework (2021) (NPPF) sets out planning policies for England and is a key part of the government's reform of the planning system, which seeks to make planning more accessible. It provides a framework of economic, environmental and social planning policies, setting out what sustainable development means in practice and how the planning system can contribute to its achievement.

Section 8 at para 98 states:

Access to a network of high quality open spaces and opportunities for sport and physical activity is important for the health and well-being of communities, and can deliver wider benefits for nature and support efforts to address climate change. Planning policies should be based on robust and up-to-date assessments of the need for open space, sport and recreation facilities (including quantitative or qualitative deficits or surpluses) and opportunities for new provision. Information gained from the assessments should be used to determine what open space, sport and recreational provision is needed, which plans should then seek to accommodate.

Central Lincolnshire Local Plan 2017

- 1.3 The Central Lincolnshire Local Plan was adopted in April 2017. Policies LP24 and LP26 along with relevant extracts from the supporting text are provided below:

Accessible, quality open spaces, sport and recreation facilities make a significant contribution to the health, wellbeing, and social cohesion of the communities and people living in Central Lincolnshire...

To ensure such above benefits are achieved, new residential developments in Central Lincolnshire will be required to include a level of new open space and recreation provision to meet the development's needs.

An Open Space Audit and Provision Standard Assessment (2016) has been undertaken for Central Lincolnshire which has informed the required standards and improvement opportunities. The required standards are summarised in respect of quantity, quality and accessibility of open space provision within Central Lincolnshire and has been used to inform the provision requirements for new development as outlined in the Central Lincolnshire Developer Contributions SPD.

Policy LP24: Creation of New Open Space, Sports and Recreation Facilities

The Central Lincolnshire Authorities will seek to:

- *reduce public open space, sports and recreational facilities deficiency;*
- *ensure development provides an appropriate amount of new open space, sports and recreation facilities; and*
- *improve the quality of, and access to, existing open spaces, sports and recreation facilities.*

Residential development will be required to provide new or enhanced provision of public open space, sports and recreation facilities in accordance with the standards set out in Appendix C and in compliance with the latest Central Lincolnshire Developer Contributions Supplementary Planning Document (or similar subsequent document).

Open space, sports and recreation provision requirements should:

- a. *as first preference be provided on-site in a suitable location. Where on site provision is not feasible or suitable within a local context, consideration of a financial contribution to the creation of a new facility or the upgrading and improvement of an existing usable facility will be considered as per the criteria set out in the Developer Contribution SPD and in accordance with national legislation;*
- b. *be multifunctional, fit for purpose and support health and outdoor recreation;*
- c. *consider the context of any existing provision and maximise any opportunities for improvement within the wider area where these are relevant to the development of the site;*
- d. *when new provision is provided, have appropriate mechanisms secured which will ensure the future satisfactory maintenance and management of the open space, sports and recreational facility.*

A holistic approach to the design of new open space should be taken including considering the contribution to place making, the green network and protecting and enhancing nature conservation and the water environment. New provision should also aim to protect, enhance and manage integrated paths for active travel and/or recreation, including new and existing links to the wider countryside.

To design successful places, all development should meet the aspiration for quality and sustainability in their design and layout. In short, good design is inseparable from good planning.

High quality sustainable design is design that is of a notable standard, which, by its nature, features and usability, will sustain over the longer term as it is fit for purpose, has potential to respond to changing needs, and enables occupants / users to live more sustainable.

...All development must make a positive contribution to the character and appearance of the environment within which it is located, having regard to its local context, and should not impact negatively upon the amenity experienced by neighbours.

Policy LP26: Design and Amenity

All development, including extensions and alterations to existing buildings, must achieve high quality sustainable design that contributes positively to local character, landscape and townscape, and supports diversity, equality and access for all.

Development proposals will be assessed against the following relevant design and amenity criteria.

Design Principles

All development proposals must take into consideration the character and local distinctiveness of the area (and enhance or reinforce it, as appropriate) and create a sense of place. As such, and where applicable, proposals will be required to demonstrate, to a degree proportionate to the proposal, that they:

- a. Make effective and efficient use of land;*
- b. Maximise pedestrian permeability and avoid barriers to movement through careful consideration of street layouts and access routes;*
- c. Respect the existing topography, landscape character and identity, and relate well to the site and surroundings, particularly in relation to siting, height, scale, massing, form and plot widths;*
- d. Not result in the visual or physical coalescence with any neighbouring settlement;*
- e. Not result in ribbon development, nor extend existing linear features of the settlement, and instead retain, where appropriate, a tight village nucleus;*
- f. Incorporate and retain as far as possible existing natural and historic features such as hedgerows, trees, ponds, boundary walls, field patterns, buildings or structures;*
- g. Incorporate appropriate landscape treatment to ensure that the development can be satisfactorily assimilated into the surrounding area;*
- h. Provide well designed boundary treatments, and hard and soft landscaping that reflect the function and character of the development and its surroundings;*
- i. Protect any important local views into, out of or through the site;*
- j. Duly reflect or improve on the original architectural style of the local surroundings, or embrace opportunities for innovative design and new technologies which sympathetically complement or contrast with the local architectural style;*

- k. *Use appropriate, high quality materials which reinforce or enhance local distinctiveness, with consideration given to texture, colour, pattern and durability;*
- l. *Ensure public places and buildings are accessible to all: this should not be limited to physical accessibility, but should also include accessibility for people with conditions such as dementia or sight impairment for example.*

Amenity Considerations

The amenities which all existing and future occupants of neighbouring land and buildings may reasonably expect to enjoy must not be unduly harmed by or as a result of development.

Proposals should demonstrate, where applicable and to a degree proportionate to the proposal, how the following matters have been considered, in relation to both the construction and life of the development:

- m. *Compatibility with neighbouring land uses;*
- n. *Overlooking;*
- o. *Overshadowing*
- p. *Loss of light;*
- q. *Increase in artificial light or glare;*
- r. *Adverse noise and vibration;*
- s. *Adverse impact upon air quality from odour, fumes, smoke, dust and other sources;*
- t. *Adequate storage, sorting and collection of household and commercial waste, including provision for increasing recyclable waste;*
- u. *Creation of safe environments.*

Similarly, proposals for development adjacent to, or in the vicinity of, existing 'bad neighbour' uses will need to demonstrate that both the ongoing use of the neighbouring site is not compromised, and that the amenity of occupiers of the new development will be satisfactory with the ongoing normal use of the neighbouring site, taking account of criteria m to u above.

Central Lincolnshire Open Space Audit and Provision Standard Assessment (April 2016)

1.4 This document reports the outputs of an open space audit and provision assessment for Central Lincolnshire undertaken in support of the Central Lincolnshire Local Plan which sets out the framework for development across the Districts of West Lindsey, North Kesteven and the City Of Lincoln to 2036.

1.5 National Standards for open space provide the context for considering standards across central Lincolnshire. Relevant extracts are provided below:

1.9 Formal playing Fields: Fields in Trust (FIT) is the operating name of the National Playing Fields Association. In 2008 FIT published "Planning and Design for Outdoor Sport and Play with benchmark standards". These benchmark standards are recommended as a tool for assisting the development of local standards.

1.12 Sport England publish guidance on the minimum standard pitch size requirements ("Comparative sizes of Sports pitches and Courts April 2011 update"). Sport England also publish National Governing Body quality standard guidance on the design, specification and construction of different types of pitches (reference <http://www.sportengland.org/facilities-planning/tools-guidance/>)

1.13 Fields in Trust recommend that access to pitches should be within 1.2 KM of all dwellings in major residential areas

The new provision need identified in draft Pitch study 2013 for Central Lincolnshire is summarised in table below. Table 10 Playing field provision requirements summary					
Central Lincolnshire	Existing provision ha	Need requirements to be met through access improvements to existing underused sites	New provision need requirements	Pitch size Need required	Additional quantity requirements to 2036 ha
adult football *pitches			8	1.21ha	9.68
Junior pitches **			21	0.33ha	6.93
Cricket pitch ***		12	1	1.29 ha	16.77
Rugby pitch		1	-	0.61	0.61
Hockey pitch		1	-	0.64 ha	0.64
Bowling Green			2	0.12 ha	0.24
General need AGP ***			2	0.64 ha	1.28
	324				36.15
<p>*Ref Sport England Comparative Size and sports pitch and courts doc http://www.sportengland.org/media/30561/Comparative-Sizes-Checklist-April2011.pdf minimum standards and budget costs for the Protecting Playing Fields Programme documents</p> <p>** Junior u 13</p> <p>*** Minimum adult standard</p> <p>*** based on Sport England minimum size for outdoor Hockey pitch</p>					

Summary: Neighbourhood/Local Playing Fields provision

Provision has been audited across the sample settlement types and identified an average quantity provision of 1.2 ha/1000 pop in urban areas and a median provision quantity standard of 1.6 ha/1000 pop in the sample villages. This is slightly above the 1.1 ha/1000 pop standard proposed at the strategic level for playing pitches. However the surplus is presumed to equate to smaller scale or informal provision associated with parks, play areas and recreation grounds.

No specific neighbourhood or local quantity standard is proposed for Playing Field provision within Central Lincolnshire. It is presumed that any need arising from new development can be accommodated for in the compliance with the proposed 1.1 ha/1000 pop standard for strategic formal playing pitch provision and local useable greenspace standard of 1.8 ha/1000 pop for urban areas and 1.5 ha/1000 pop for rural areas.

An access standard of 1200 m (10 minute walk) in line with Fit NEAP facility access standard is recommended for adoption within Central Lincolnshire.

Provision quality standards should be based on the Sport England Governing body recommendations. Where provision is required in new development the design and layout should be compliant with Sport England Governing body standards and quality assessment criteria.

- 1.6 On site provision of playing fields will be in accordance with the required Open Space standards (Central Lincolnshire Local Plan Adopted April 2017 Appendix C).

Open Space standards			
Central Lincolnshire Local Plan Adopted April 2017 Appendix C			
Open Space Type	Quality Standard	Requirement	Proposed on site
Strategic Formal Playing Fields	1.1Ha/1000 population	3.3Ha	3.3Ha

The above calculations are based on 3,000 people (1,250 dwellings @ 2.4 persons per dwelling).

2.0 LOCATION OF THE PLAYING FIELDS

- 2.1 The proposals include 3.3Ha of formal playing field to be provided as part of the open space provision.
- 2.2 The broad location of the Site is shown on Figure 1: Site location Plan, whilst Figure 2 shows the Illustrative Masterplan and proposed playing field location. Industrial premises at Camp Road border the proposed open space / playing fields to the west, whilst Warren Lane lies to the south. Proposed residential development and primary road infrastructure (Phase 3 development) lie to the east and north.

3.0 GROUND CONDITIONS - DRAINAGE AND TOPOGRAPHY

Soil Resources, Agricultural use and Quality

- 3.1 In 2016 Land Research Associates (LRA) undertook an assessment of soil resources and agricultural use and quality of land at Witham St Hughs, submitted as part of the outline application.
- 3.2 The land comprises a number of fields, sown to oilseed rape and spring cereals at the time of the survey. The detailed soil survey was carried based on observations at intersects of a 100 m grid. These included surveys of the proposed playing fields location. During the survey soils were examined by a combination of pits and augerings to a maximum depth of 1.2 m. The distribution of soils types are shown on Figure 3.
- 3.3 LRAs report identifies land within which the playing fields are proposed as heavy soils with clay subsoil, agricultural land quality sub-grade 3b. On such soils seasonal wetness may be caused by water ponding over the impermeable clay subsoils (soil wetness class III). As a consequence winter rainfall tends to run off.
- 3.4 Other areas of medium loam or sandy topsoil occur within the northern and southern parts of the Site. These soils are mainly moderately permeable but suffer slight seasonal wetness caused by groundwater (soil wetness class II). They have a high capacity to absorb excess winter rainfall.
- 3.5 A detailed earthworks specification, highlighting the classifications of soils required within the construction of the playing fields, has been produced and the details can be found within BWB's Earthworks Specification report (ref: WSH-BWB-GZZ-XX-SP-CE-0600).

Flood Risk Assessment

- 3.6 BWB undertook a Flood Risk Assessment of land at Witham St Hughs, submitted as part of the outline application.
- 3.7 A topographical survey of the site undertaken by Oakes Surveys is provided at Figure 4.

Drainage Strategy

- 3.8 BWB prepared a Phase 3 Drainage Strategy for the site as part of the outline application (Figure 5) - the existing surface water drainage strategy states:

Phase 3 Existing Surface Water Strategy

The topographical survey shows that the existing site is predominately greenfield. The majority of the site is collected by local field ditches which discharge to 3 outfalls (1 to the west & 2 to the east).

The outfall to the west runs under camp road & eventually discharges to the river trent (which falls under the ea's remit). That said this area lies directly within the newark area internal drainage board's (naidb) jurisdiction. Therefore the discharge rates for this area will need to be agreed with the naidb.

Although the site lies outside of the upper witham internal drainage board (uwidb) area, the outfalls to the east will eventually make their way to the river witham. These discharge rates will therefore need to be agreed with the uwidb.

Phase 3 Proposed Surface Water Strategy

In accordance with current legislation & best practice the proposed surface water should, in the first instance, be directed to a soakaway. Where this is not possible, flows should discharge directly to a watercourse. Finally if the above options are not practicable the surface water should connect to a sewer. To ensure the proposed development does not increase flood risk to the surrounding areas or itself it is proposed to limit the surface water run-off to the existing greenfield runoff rates. The excess storm water generated by the more severe rainfall events will be attenuated on site by a series of balancing ponds. These ponds will provide storage up to and including the 100yr + 30% (climate change) event.

- 3.9 During 2017-18 BWB updated the drainage strategy for the site and prepared the Phase 3 Earthworks Strategy, based upon the Illustrative Masterplan. The Sustainable urban Drainage Scheme (SuDS) includes a series of swales and attenuation basins (Figure 6).

4.0 DESIGN

- 4.1 The following specification outlines the pitch design, specification and maintenance. The detailed design of the drainage system will be subject to engineering requirements and confirmation of soil types.
- 4.2 The proposals include the provision of 1No. adult football pitch and 1No. junior grass pitch. The location and orientation of the football pitches are shown on Figure 7. It is intended that the playing fields would be provided as part of the public open space and managed by Witham St Hughs Parish Council.
- 4.3 There will be convenient access to the playing fields from the nearby primary street and public footpath network. The proposed primary street to the east also includes on street parallel parking for visitors. An existing footpath occurs within open space to the south, whilst other routes are proposed to the west and north of the playing fields.

- 4.4 The design outlined below provides the standards required for the sports pitch areas. The design and build specification will be in accordance with the standards set out in this document and the Sport England Design Guidance Note - *Natural Turf for Sport* (2011), *The FA Guide to Pitch and Goalpost Dimensions* (2012), the ECB *Recommended Guidelines for the Construction, Preparation, and Maintenance of Cricket Pitches and Outfield at all Levels of the Game* (2011) and the Sports Turf Research Institute.

Sports Pitch

Adult Football Pitch

- 4.5 One adult football pitch will be marked out for football use, at 100m x 64m with a run off / safety margin area of at least 3.66m on all sides of the pitch. This dimension accords with the Football Association (FA) and Sport England guidance for senior pitch dimensions (minimum) which is 100.58m x 54.01m.

Junior Football Pitch (U11/U12)

- 4.6 One junior football pitch will be marked out for football use, at 73m x 46m with a run off / safety margin area of at least 3.66m on all sides of the pitch. This dimension accords with the Football Association (FA) and Sport England guidance for junior pitch dimensions (minimum) which is 80.32m x 53.32m.
- 4.7 Goalposts are to be provided as required for the adult and junior football pitches. Goalposts are to be manufactured and installed in accordance with industry standards: BSEN 748 (2004) and BS 8461:2005+A1:2009. BS 8462:2005+A2:2012 (updated in March 2012).

Site preparation

Clearance Works

- 4.8 Prior to works the Contractor should check and verify the location and type of utilities/underground services that might affect construction.
- 4.9 Existing debris, materials and vegetation within the area proposed for playing fields are required to be removed off-site. Existing hedgerow situated along the Site perimeter by the industrial estate is to be retained.

Tree root removal

- 4.10 Tree root systems should be removed by mechanical excavation. For any larger tree stumps which remain a stump grinder will be required to mechanically grind out the root plate to a depth of 50cm.

Excavations, regrading and formation works

- 4.11 Levels are required to be regraded to produce a playing surface with suitable levels. The proposed levels are indicated on Figure 4. Works include reprofiling of the existing soil. Low

cutting and embankment will need to be formed within parts of the Site. Slopes should not exceed a gradient of 1 in 3 to facilitate mowing.

- 4.12 Excavations should be carried out when there are suitable ground conditions so that minimal damage is caused to the soils. No sub soil should be scraped off with the top soil. Any surplus material should be disposed of as agreed by the client's representative.
- 4.13 Soils and subsoils are required to be cultivated to alleviate compaction. Filling, if required must be done in consecutive layers not exceeding 250mm. Each layer must be adequately consolidated to avoid subsequent settlement. The final formation must be trimmed smooth to the required level before replacing the topsoil. The BWB earthworks specification provides the classification of the soils to be used and the thicknesses in which they are to be laid.
- 4.14 On completion of the grading operations the topsoil is replaced to a uniform depth to produce a finished surface that marries in with the surrounding ground levels.
- 4.15 Soil levelling will always have some impact on the soil structure and so it is essential to minimise this by conducting earthworks only under dry conditions. Stockpiling the soil for long periods should be avoided and the height of the stockpile should be kept to a minimum if possible. As a guide, the maximum height should be no more than two metres. It may be helpful to firm the surface of the soil to facilitate the shedding of surface water.
- 4.16 Where possible, the best topsoil should be recovered for the playing areas and care should be taken to prevent contamination with stones or rubble from any building work.

Seeding

Preparation

- 4.17 Areas of bare ground to be sown should be first ploughed or rotovated and raked or harrowed to produce a medium fine, firm tilth. Seed will be sown in the autumn or spring, selecting a time when the soil is moist and can be worked. A Cambridge (ribbed) roll is recommended to be used for one or two passes to firm and level the surface and create good seed soil contact.
- 4.18 The seed mix below includes perennial species that can be slow to germinate and grow. Ground cover will therefore likely take longer to develop than conventional lawn sowings and may take 12-18 months to knit together as turf. Newly seeded areas will therefore be protected to prevent seedling destruction by pedestrians.
- 4.19 There will likely be a flush of annual weeds from the soil during the first growing season. This will be controlled by topping or mowing.

Seeding

- 4.20 At the time of starting work, the areas to be seeded will be covered by topsoil at a minimum of 175mm thick for sports pitches and spread by the contractor. Use Germinal Seeds A20 Ryesport mix or similar approved for the pitch areas:
 - 25% Eugenius (Perennial Ryegrass)
 - 20% Cadix (Perennial Ryegrass)
 - 20% Carnac (Perennial Ryegrass)

- 20% Vesuvius(Perennial Ryegrass)
 - 15% Promotor (Perennial Ryegrass)
- 4.21 Sow at a rate of application: 35g/m² in accordance with supplier recommendations.
- 4.22 Seed mix for the remaining amenity grass areas will be Germinal Seeds A9 General Outfield Mix, or similar approved.
- 4.23 Purchase fresh seed for each growing season. Do not use seed purchased for previous seasons. Use blue label certified seed varieties complying with EC regulations for purity and germination. When requested, supply to CA samples of mixtures as delivered to site or copy of original certificate of germination, purity and composition carried out by an Official Seed Testing Station.
- 4.24 Sow seed in calm weather between April to October, when conditions are suitable. Spread seed evenly at the specified rate(s) applied in two equal sowings in transverse directions. Lightly harrow or rake. On light soils roll and cross roll after seeding using a lightweight roller.
- 4.25 The playing fields should be restricted from any pedestrian access whilst the grass pitch establishes. Therefore temporary protective fencing may be required to be provided.

Drainage System

- 4.26 Where the indigenous soil has a high sand content, the natural drainage capacity of the site soil may form an effective basis for a good playing surface. At this site the majority of the soil is less permeable and so an effective drainage system must be provided to prevent deterioration of the playing surface and to ensure that the required standards can be met.
- 4.27 It is anticipated that a basic pipe drainage system will be suitable for the Site. Details of the drainage system will depend upon soil conditions and subject to engineering requirements.
- 4.28 The pipe system is to be installed after replacement of the topsoil and prior to seeding.
- 4.29 Outlet drain (Main Drain) is to be unperforated plastic to BS 4660 an BS EN 1401-1. Outlet drain to connect into existing drainage system / main sewer or an effective soakaway system.
- 4.30 For Filter Drains (pipe drainage) perforated plastic pipe drains of 75mm diameter to BS 4962 and Kitemark certified to be installed with laterals at c5m centres in a trench 450mm deep and at least 150mm wide at 600mm below ground level. All drains will be laid with a steady fall, no less than 1:200.
- 4.31 Lay pipes and backfill drain trenches in good weather conditions using methods suitable for the site conditions to prevent compaction, smearing, top ponding, rutting and damage to soil structure. Lay to line and gradient on a firm bed free from loose soil to give a free-draining installation without backfalls. Do not lay on soil backfill or in slurry. Carefully backfill with filter material ensuring that pipes are not damaged distorted or displaced. Do not lay or backfill plastic pipes at temperatures lower than 5 degrees.
- 4.32 All joints in the line of drains shall be made with purpose made junction connectors, or by other approved proprietary means according to the type of pipe.
- 4.33 End stops shall be provided to seal open ends to prevent ingress of soil/animals.

Drain Laying

- 4.34 Do not lay drains until soiling operations, including spreading and grading of topsoil, have been completed. Carefully remove topsoil when forming trenches and prevent mixing with subsoil.
- 4.35 Before commencing excavation, set out and check that specified gradients and invert levels, particularly at outfalls, can be achieved. Form line of drain to the depth specified to engineering requirements, true to line and gradient. When bedding material is not specified, shape trench bottom to secure and bed the pipe. Remove subsoil from site or to approved locations at the end of each day and before pipe laying. Do not disperse on topsoiled areas.
- 4.36 Excavate trench to formation immediately before laying beds or pipes. Mud, rock projections, boulders and hard spots to be removed and replace with consolidated bedding material. Local soft spots to be hardened by tamping in bedding material.
- 4.37 Lay and compact granular materials to a minimum thickness of 50 mm. Scoop out locally at couplings / sockets and lay pipes digging slightly into bed and resting uniformly on their barrels.
- 4.38 Backfill drain trenches up to 150mm from ground level using an approved 6-10mm gauge clean hard non-calcareous gravel or stone chippings. Adequately and evenly firm, leaving the surface flat. Cover the permeable fill with a 50mm firmed depth of course sand finishing.
- 4.39 All fittings shall be carried out carefully to avoid displacement or damage of pipes. Approved permeable fill materials shall be carefully and accurately introduced by shovel or chute.


5.0 MAINTENANCE

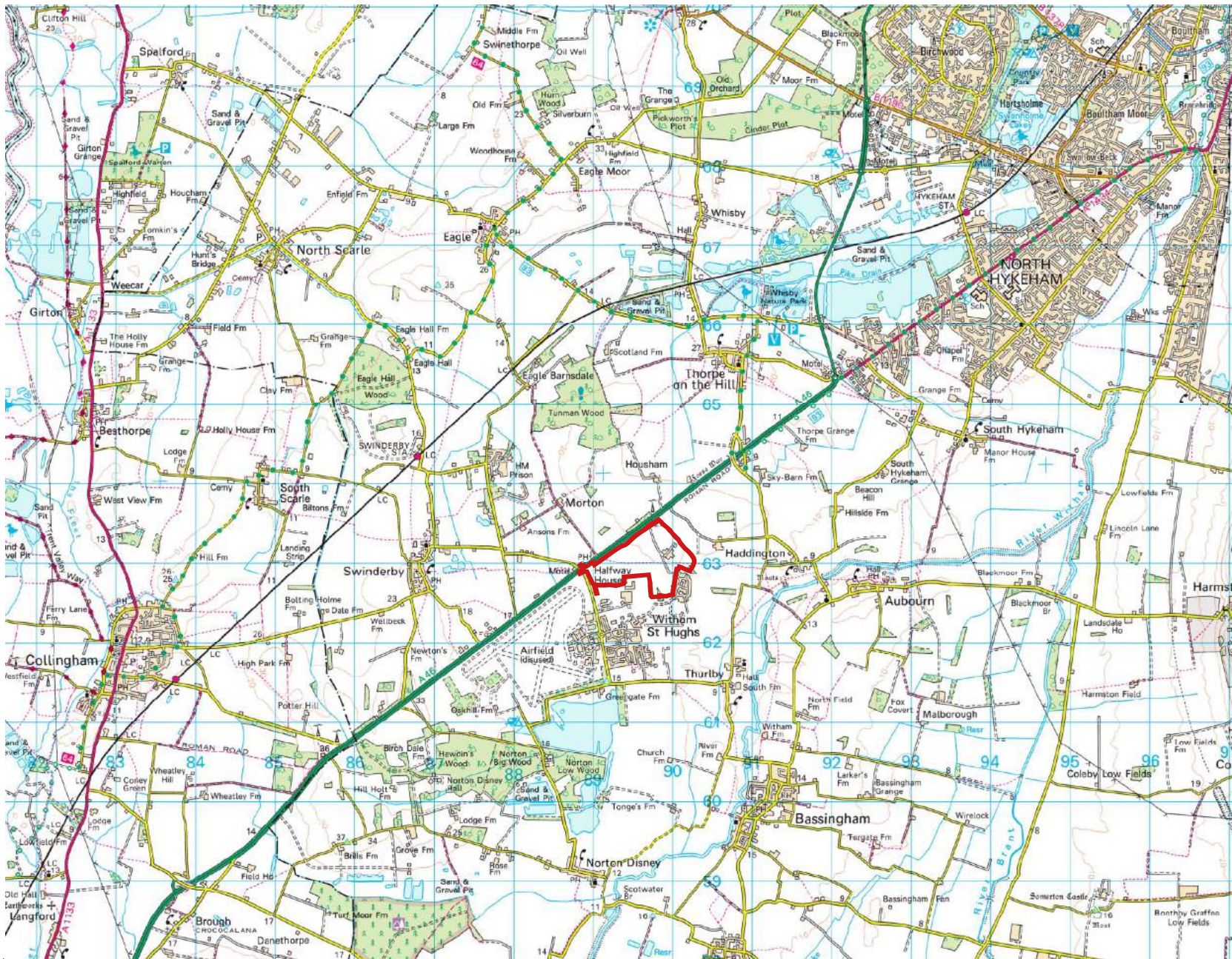
Initial Maintenance to Ensure Establishment

Football Pitches

- 5.1 The Contractor should submit for approval a schedule of works in accordance with the necessary guidance.
- 5.2 Water as necessary to ensure the establishment and continued thriving of all seeding. If water supply is likely to be restricted by legislation do not carry out seeding until instructed. During establishment of grass areas ensure that sufficient water is applied using a fine sprinkler or oscillating spray to maintain healthy growth.
- 5.3 When grass is 50-60 mm high remove debris, litter and all stones and earth clods larger than 25 mm in any dimension, and when grass is reasonably dry, cut to approximately 25-40 mm high, using cylinder mower. Remove arisings off site.
- 5.4 Remove soil and arisings from hard surfaces and leave the works in a clean, tidy condition after any maintenance operations.
- 5.5 Bare areas, areas of dead grass that have failed to thrive during establishment must be made good by recultivation and reseeding.
- 5.6 The height of growth on the pitches must not exceed 40 mm at any time. Cut as and when necessary to a height of 25 mm, using cylinder and remove all arisings. Before each cut remove all litter and debris. At the time of each cut, trim all grass edges round the base of trees, manholes, etc. and remove arisings. Sweep all adjoining hard areas clear of cuttings and remove. Keep the sward substantially free of broad leaved weeds by applying a suitable selective herbicide. Water as necessary to ensure establishment.
- 5.7 In March apply 15:10:10 Spring turf fertilizer at 35 g/sq m or equivalent.
- 5.8 In September apply 5:10:10 Autumn turf fertilizer at 50 g/sq m or equivalent.
- 5.9 For the annual maintenance regime, please refer to the necessary guidance, including the Sport England Design Guidance Note – *Natural Turf for Sport* (2011), the FA *Guidelines for the Preparation & Maintenance of Football Pitches* and the ECB *Recommended Guidelines for the Construction, Preparation, and Maintenance of Cricket Pitches and Outfield at all Levels of the Game* (2011)

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 Phase 3 - Site Location



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Strawsons Property
Witham St Hughs
Lincolnshire

FIGURE 1: SITE LOCATION

masterplanning
environmental assessment
landscape design
urban design
ecology
archaeology
archaeology

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Application Site Boundary 68.45ha

Built Development

- Residential** 36.05ha
Up to 1000 homes at circa 31 dwellings per hectare.
Residential Land includes Primary Street.
- Residential - Extra Care / Retirement** 3.00ha
Up to 150 units at circa 50 dwellings per hectare.
To include Retirement Care, Extra Care (Assisted Living) & Retirement Bungalows
- Proposed Points of Access**
1. Halfway House Lane
2. Warren Lane
- Primary Street**
Including Roadside Swale
- Raised Table Junction Nodes**
- Secondary Lanes**
- Shared Driveways / Green Lanes**
- Home Zones**
- Existing property to be retained**

Green Infrastructure

- Existing Public Right of Way Retained**
- New Multi-purpose Recreational Routes**
- Existing Hedgerow, Trees and Vegetation to be Retained**
- Greenspace**
Includes retained vegetation and watercourses, new habitat creation, woodland, hedgerows, tree planting, open space and play areas, allotments, grassland, wetlands, SuDS detention basins and sports provision.
- Proposed Structural Planting**
Woodland, hedgerows and tree cover.
- Potential Noise Attenuation**
Adjacent to the A46.
- Provision for Adults Football Pitches**
- Proposed Detention Basins**
- Swales and Drainage Ditches**
- Play Areas** 1.64ha
- Children's Equipped Play Areas**
Indicative Location.
- Scout Hut**
Indicative Location.

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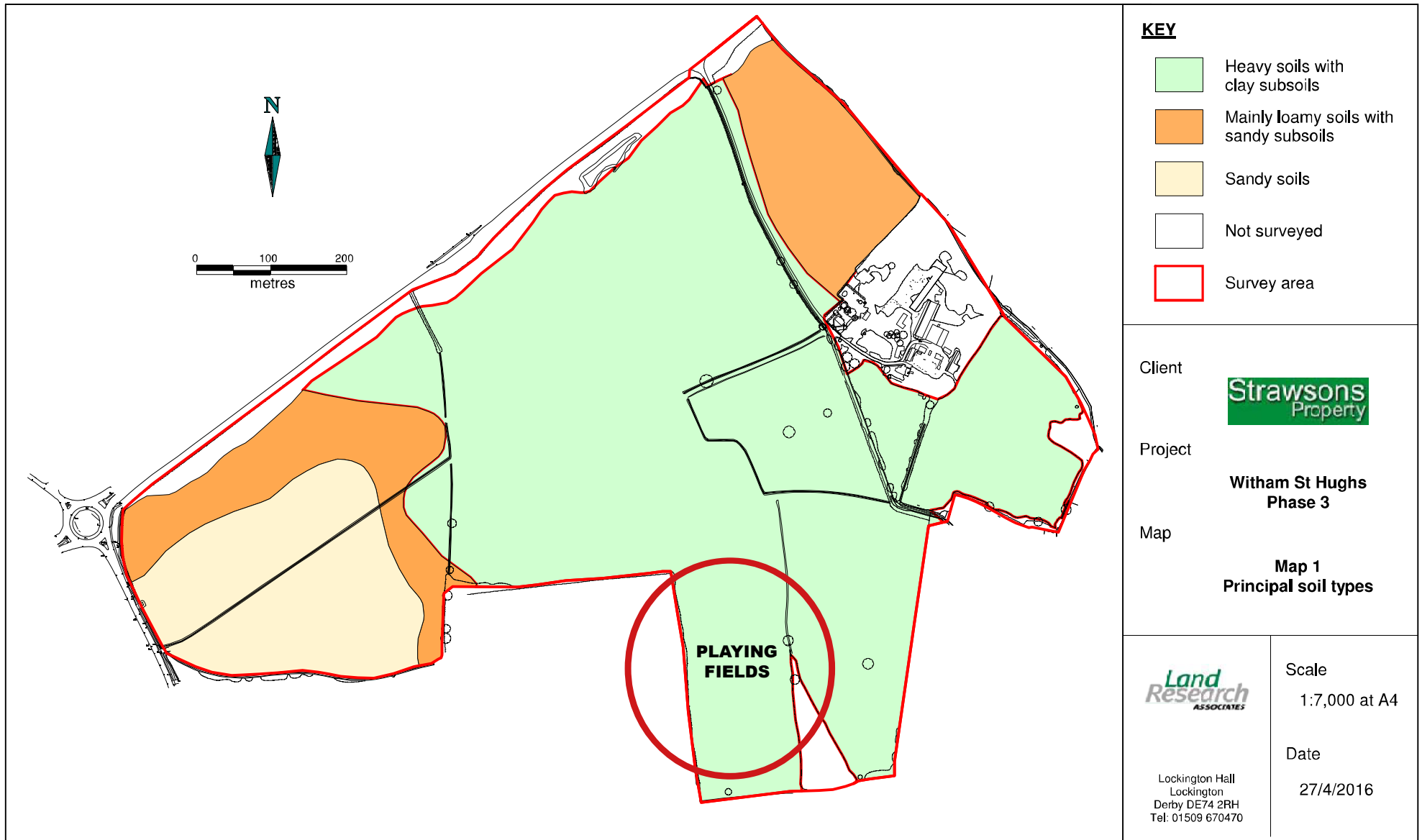
FIGURE 2: ILLUSTRATIVE MASTERPLAN

1:2500 @ A1

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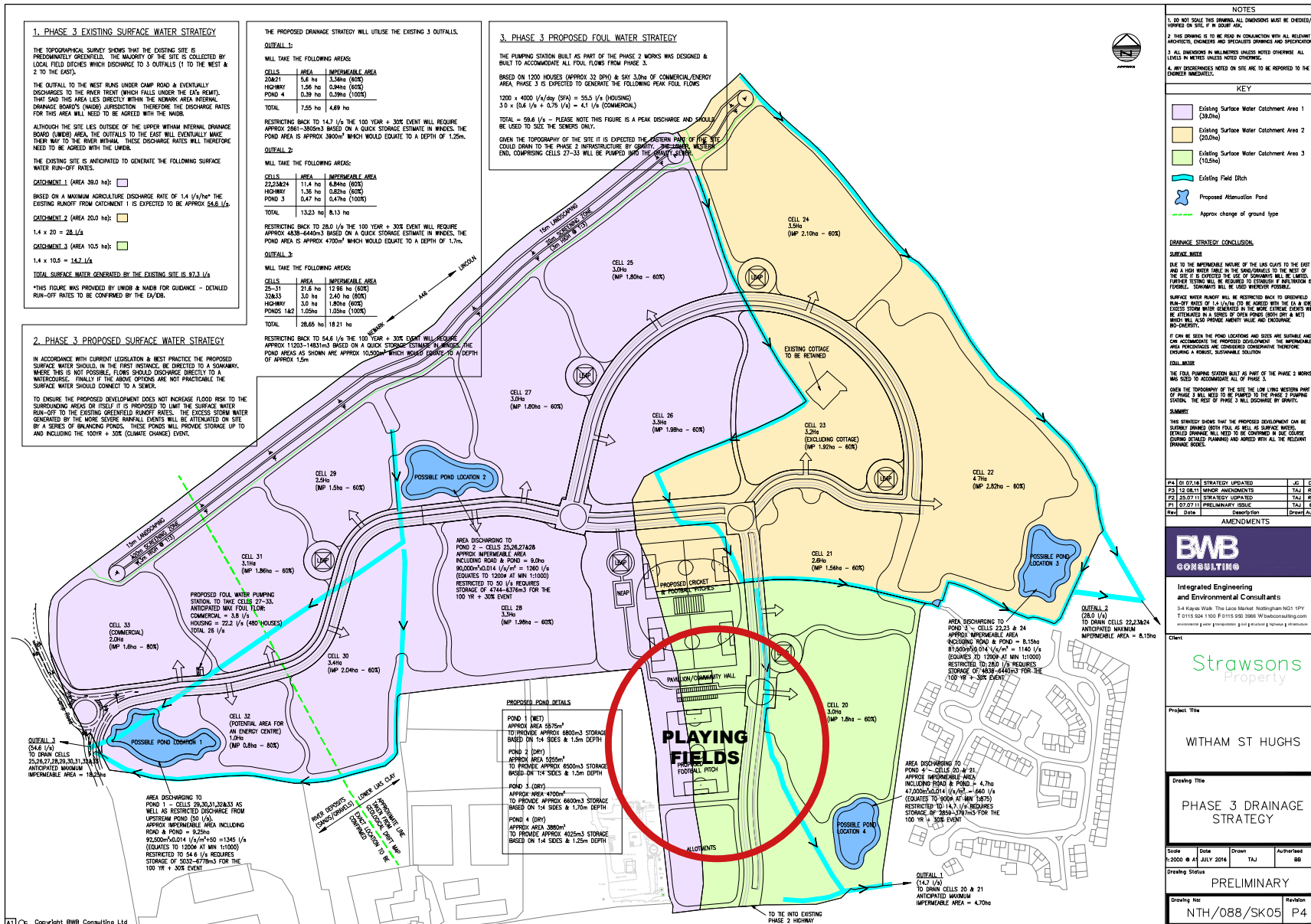
masterplanning -
 environmental assessment - FPCR Environment and Design Ltd
 landscape design - Lockington Hill
 urban design - Lockington Hill
 ecology - Derby DE74 2PH
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 1. 01550 873772
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FIGURE 3: SOIL TYPES



1. PHASE 3 EXISTING SURFACE WATER STRATEGY

THE TOPOGRAPHICAL SURVEY SHOWS THAT THE EXISTING SITE IS PRELIMINARILY ORIENTED. THE MAJORITY OF THE SITE IS COLLECTED BY LOCAL FIELD DITCHES WHICH DISCHARGE TO 3 OUTFALLS (1 TO THE WEST & 2 TO THE EAST).
THE OUTFALL TO THE WEST RUNS UNDER CAMP ROAD & EVENTUALLY DISCHARGES TO THE RIVER TRENT (WHICH FALLES UNDER THE A16 HEART). THAT SAYS THIS AREA LIES DIRECTLY WITHIN THE NORKAM AREA INTERNAL DRAINAGE BOARD'S (NIDB) JURISDICTION. THEREFORE THE DISCHARGE RATES FOR THIS AREA WILL NEED TO BE AGREED WITH THE NIDB.
ALTHOUGH THE SITE LIES OUTSIDE OF THE UPPER WITHAM INTERNAL DRAINAGE BOARD (UIDB) AREA, THE OUTFALLS TO THE EAST WILL EVENTUALLY MAKE THEIR WAY TO THE RIVER WITHAM. THESE DISCHARGE RATES WILL THEREFORE NEED TO BE AGREED WITH THE UIDB.

THE EXISTING SITE IS ANTICIPATED TO GENERATE THE FOLLOWING SURFACE WATER RUN-OFF RATES:

- CATCHMENT 1 (AREA 38.0 ha): BASED ON A MAXIMUM AGRICULTURE DISCHARGE RATE OF 1.4 l/s/ha* THE EXISTING RUNOFF FROM CATCHMENT 1 IS EXPECTED TO BE APPROX 52.8 l/s.
- CATCHMENT 2 (AREA 20.0 ha): 1.4 x 20 = 28 l/s
- CATCHMENT 3 (AREA 10.5 ha): 1.4 x 10.5 = 14.7 l/s

2. PHASE 3 PROPOSED SURFACE WATER STRATEGY

IN ACCORDANCE WITH CURRENT LEGISLATION & BEST PRACTICE THE PROPOSED SURFACE WATER SHOULD, IN THE FIRST INSTANCE, BE DIRECTED TO A SOWANAY. WHERE THIS IS NOT POSSIBLE, FLOWS SHOULD DISCHARGE DIRECTLY TO A WATERCOURSE. FINALLY IF THE ABOVE OPTIONS ARE NOT PRACTICABLE THE SURFACE WATER SHOULD CONNECT TO A SEWER.
TO ENSURE THE PROPOSED DEVELOPMENT DOES NOT INCREASE FLOOD RISK TO THE SURROUNDING AREA OR ITSELF IT IS PROPOSED TO LIMIT THE SURFACE WATER RUN-OFF TO THE EXISTING GREENFIELD RUNOFF RATES. THE EXCESS STORM WATER GENERATED BY THE MORE SEVERE RAINFALL EVENTS WILL BE ATTENUATED ON SITE BY A SERIES OF BLANKING PONDS. THESE PONDS WILL PROVIDE STORAGE UP TO AND INCLUDING THE 100YR + 30% CLIMATIC CHANGE EVENT.

THE PROPOSED DRAINAGE STRATEGY WILL UTILISE THE EXISTING 3 OUTFALLS.

OUTFALL 1:

WILL TAKE THE FOLLOWING AREAS:
CELLS AREA IMPERMEABLE AREA
20&21 5.8 ha 3.38ha (60%)
HIGHWAY 1.56 ha 0.94ha (60%)
POND 4 0.39 ha 0.39ha (100%)
TOTAL 7.75 ha 4.69 ha

RESTRICTING BACK TO 14.7 l/s THE 100 YEAR + 30% EVENT WILL REQUIRE APPROX 2961-3050m³ BASED ON A QUICK STORAGE ESTIMATE IN PONDS. THE POND AREA IS APPROX 3900m² WHICH WOULD EQUATE TO A DEPTH OF 1.25m.

OUTFALL 2:

WILL TAKE THE FOLLOWING AREAS:
CELLS AREA IMPERMEABLE AREA
22,23&24 11.4 ha 6.84ha (60%)
HIGHWAY 1.36 ha 0.82ha (60%)
POND 3 0.47 ha 0.47ha (100%)
TOTAL 13.23 ha 8.13 ha

RESTRICTING BACK TO 28.0 l/s THE 100 YEAR + 30% EVENT WILL REQUIRE APPROX 4038-6440m³ BASED ON A QUICK STORAGE ESTIMATE IN PONDS. THE POND AREA IS APPROX 4700m² WHICH WOULD EQUATE TO A DEPTH OF 1.7m.

OUTFALL 3:

WILL TAKE THE FOLLOWING AREAS:
CELLS AREA IMPERMEABLE AREA
25-31 21.8 ha 13.86 ha (60%)
32&33 3.0 ha 2.40 ha (80%)
HIGHWAY 3.0 ha 1.80ha (60%)
PONDS 1&2 1.05ha 1.05ha (100%)
TOTAL 28.65 ha 18.21 ha

RESTRICTING BACK TO 54.6 l/s THE 100 YEAR + 30% EVENT WILL REQUIRE APPROX 11033-1483m³ BASED ON A QUICK STORAGE ESTIMATE IN PONDS. THE POND AREA IS APPROX 10500m² WHICH WOULD EQUATE TO A DEPTH OF APPROX 1.5m.

3. PHASE 3 PROPOSED FOUL WATER STRATEGY

THE PUMPING STATION BUILT AS PART OF THE PHASE 2 WORKS WAS DESIGNED & BUILT TO ACCOMMODATE ALL FOUL FLOWS FROM PHASE 3.

BASED ON 1200 HOUSES (APPROX 32 DPH) & SAY 3.0% OF COMMERCIAL/ENERGY AREA, PHASE 3 IS EXPECTED TO GENERATE THE FOLLOWING PEAK FOUL FLOWS
1200 x 4000 l/s/day (SFA) = 35.5 l/s (HOUSING)
3.0 x (14 l/s + 3.75 l/s) = 41 l/s (COMMERCIAL)
TOTAL = 59.4 l/s - PLEASE NOTE THIS FIGURE IS A PEAK DISCHARGE AND SHOULD BE USED TO SIZE THE SENSORS ONLY.

GIVEN THE TOPOGRAPHY OF THE SITE IT IS EXPECTED THE EASTERN PART OF THE SITE COULD DRAIN TO THE PHASE 2 INFRASTRUCTURE BY GRAVITY. THEREFORE, A SEWER SUD, COMPRISING CELLS 27-33 WILL BE PUMPED INTO THE EXISTING SUD.

AREA DISCHARGING TO POND 3 = CELLS 25,26,27,28,29 INCLUDING ROAD & POND = 8.0ha 90,000m² @ 0.014 l/s/m² = 1260 l/s (EQUATES TO 1200m³ AT MN 11000) RESTRICTED TO 50 l/s REQUIRES STORAGE OF 4744-4376m³ FOR THE 100 YR + 30% EVENT

PROPOSED POND DETAILS
POND 1 (NET) APPROX AREA 5575m² TO PROVIDE APPROX 6800m³ STORAGE BASED ON 1.4 SIDES & 1.5m DEPTH
POND 2 (GR) APPROX AREA 5255m² TO PROVIDE APPROX 6500m³ STORAGE BASED ON 1.4 SIDES & 1.5m DEPTH
POND 3 (GR) APPROX AREA 6000m² TO PROVIDE APPROX 6600m³ STORAGE BASED ON 1.4 SIDES & 1.70m DEPTH
POND 4 (GR) APPROX AREA 3800m² TO PROVIDE APPROX 4025m³ STORAGE BASED ON 1.4 SIDES & 1.25m DEPTH

NOTES

- DO NOT SCALE THIS DRAWING. ALL DIMENSIONS MUST BE CHECKED/VERIFIED ON SITE, IF IN DOUBT ASK.
- THE DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT INSTRUMENTS, DRAWINGS AND PREVIOUS DRAINAGE AND SITE SPECIFICATIONS.
- ALL DIMENSIONS IN MILLIMETRES UNLESS NOTED OTHERWISE. ALL LEVELS IN METRES UNLESS NOTED OTHERWISE.
- ANY DIMENSIONS NOTED ON SITE ARE TO BE REPORTED TO THE ENGINEER IMMEDIATELY.

KEY

- Existing Surface Water Catchment Area 1 (39.0%)
- Existing Surface Water Catchment Area 2 (20.0%)
- Existing Surface Water Catchment Area 3 (10.5%)
- Existing Field Drain
- Proposed Attenuation Pond
- Approx change of ground type

DRAINAGE STRATEGY CONCLUSION:
SURFACE WATER
DUE TO THE IMPERVIOUS NATURE OF THE LENS CLAYS TO THE EAST AND A HIGH WATER TABLE IN THE SANDWICHES TO THE WEST OF THE SITE IF IT EXISTED THE USE OF SOWANAYS WILL BE LIMITED. FURTHER TESTING WILL BE REQUIRED TO CONFIRM IF A SOWANAY IS FEASIBLE. SOWANAYS WILL BE USED WHEREVER POSSIBLE.
SURFACE WATER RUNOFF WILL BE RESTRICTED BACK TO GREENFIELD RUN-OFF RATES OF 1.4 l/s/ha TO BE AGREED WITH THE UA & SUD. EXCESS STORM WATER GENERATED IN THE MORE EXTREME EVENTS WILL BE ATTENUATED IN A SERIES OF BLOWING PONDS WITHIN THE SITE WHICH WILL ALSO PROVIDE AMENITY VALUE AND DISCHARGE TO SOWANAYS.
IT CAN BE SEEN THE POND LOCATIONS AND SIZES ARE SUITABLE AND CAN ACCOMMODATE THE PROPOSED DEVELOPMENT. THE IMPERMEABLE AREA PROVISIONS ARE CONSIDERED CONSISTENT THEREFORE, LOCATIONS & SIZES, SOWANAY SOLUTION.

FOUL WATER
THE Foul WATER STRATEGY BUILT AS PART OF THE PHASE 2 WORKS WAS SIZED TO ACCOMMODATE ALL OF PHASE 3.
GIVEN THE TOPOGRAPHY OF THE SITE AND THE LOW FLOW WESTERN PART OF PHASE 3 WILL NEED TO BE PUMPED TO THE PHASE 2 PUMPING STATION. THE REST OF PHASE 3 WILL DISCHARGE BY GRAVITY.

SUMMARY
THIS DRAWING SHOWS THAT THE PROPOSED DEVELOPMENT CAN BE ACCOMMODATED WITHIN THE PHASE 2 SURFACE WATER AND Foul WATER DRAINAGE INFRASTRUCTURE. THE PROPOSED DEVELOPMENT CAN BE ACCOMMODATED WITHIN THE PHASE 2 PUMPING STATION. THE REST OF PHASE 3 WILL DISCHARGE BY GRAVITY.

PA 12 07/18 STRATEGY UPDATED	JC	DM
PA 12 08/18 MAJOR AMENDMENTS	TAL	RAF
PA 12 09/18 STRATEGY UPDATED	TAL	RAF
PA 12 07/18 PRELIMINARY ISSUE	TAL	BB
Rev. Date	Author	Drawn/Checked

AMENDMENTS

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Client
Strawsons Property

Project Title
WITHAM ST HUGHS

Drawing Title
PHASE 3 DRAINAGE STRATEGY

Scale	Date	Drawn	Author/Rev
P:2000 @ A1	JULY 2014	TAL	BB

Drawing Status
PRELIMINARY

Drawing No	Revision
NTH/O88/SK05	P4

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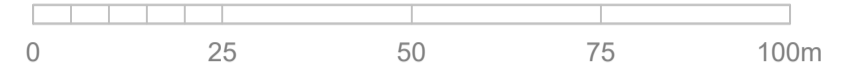
FIGURE 5: PHASE 3 DRAINAGE STRATEGY

NOTES



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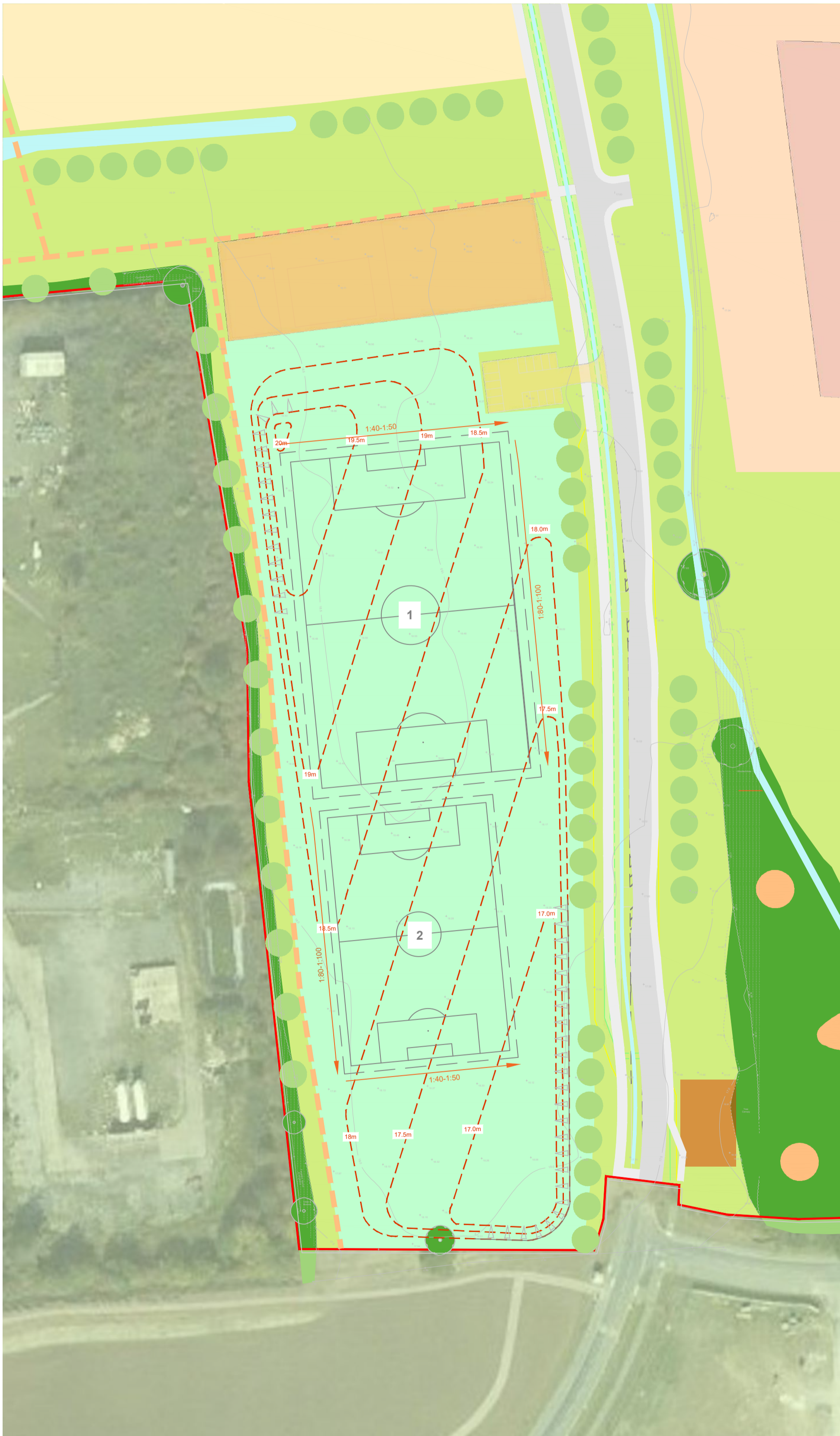
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KEY

-  Site Boundary
-  Existing hedgerow, trees and vegetation
-  Proposed Trees to Existing Hedgerows
-  Proposed Standard Trees
Indicative location
-  Swales and Drainage Ditches
-  Childrens Play Area & Relocated MUGA
-  Proposed Car Park
Indicative subject to detailed design
-  Proposed Recreational Routes
-  Proposed Grass Football Pitch - Adult Pitch
Main pitch size 100m x 64m
3m margin Run-off zone
-  Proposed Grass Football Pitch - Junior Pitch
Main pitch size 91m x 55m
3m margin Run-off zone
-  Existing contour
-  Pitch gradients
1:40-1:50
-  Proposed contour
Indicative subject to detailed design
17.0m
-  Embankment to sports pitches



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FIGURE 7: SPORTS PITCH LAYOUT

1:1,000@ A2
25 May 2021 ETM / JJ
5801-L-21 rev -



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