DESIGN AND ACCESS STATEMENT

G-213319 SOUTH HOLLAND HEALTH & WELLBEING HUB

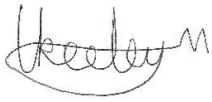
SYNTHETIC TURF PITCH (STP)

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D&A STATEMENT – G-213319 SOUTH HOLLAND HEALTH & WELLBEING HUB – SYNTHETIC TURF PITCH

CLIENT	South Holland District Council
SITE ADDRESS	Castle Sports Centre Albion Street Spalding PE11 2AJ
CLIENT CONTACT	Mark Humphreys
FF PROJECT NUMBER	G-213319

DOCUMENT NUMBER	LSUK.24-0414_FDAS	
VERSION NUMBER & DATE	1.0	11/06/2024
REPORTED BY		Louis Keeley Project Design Consultant (PDC) Louis.keeley@labosport.com
APPROVED BY		Phil Keeley Senior Consultant Phil.Keeley@labosport.com

SUMMARY OF PROJECT	Labosport Ltd have been commissioned by The Football Foundation to carry out Design Consultancy services for the above Synthetic Turf Pitch (STP) Framework project. This document is a feasibility study and design and access statement for the construction of the STP.

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Section 1 – Executive Summary

General Information	
SITE VISIT	Labosport Ltd carried out an initial appraisal and feasibility study at South Holland Health & Wellbeing Hub for the installation of a Synthetic Turf Pitch (STP). This executive summary outlines recommended actions discussed within the following report and proposals for the new pitch.
RAG SYSTEM DETAILS	The RAG (Red, Amber, Green) ratings shown below represent the following scenarios: - • Red – Immediate action needed as the issue(s) deemed to constitute a direct and significant threat to the project or present a risk to one or more party • Amber – Issues identified that have potential to develop into red alert status • Green – Items that are compliant, agreed, acceptable and present no risk to the project or the key parties

Executive Summary		
DESIGN AND ACCESS STATEMENT		Planning permission is sought to create a Synthetic Turf Pitch to comply with the FA guidelines for 11v11 Synthetic Turf Pitch (STP) sized 91 x 55m with FA recommended 3m safety run off. Ancillary features of the pitch will be new hard standing surface for pedestrian's spectator viewing, goal / container storage and maintenance / emergency vehicle access. The installation of new 4.5m (maximum) high twin bar panel perimeter fencing with associated noise reducing dampeners to secure the facility. Installation of new LED floodlighting system was carefully considered, minimising spillage of light to acceptable levels for nearby ecology / residents, whilst still meeting performance requirements outlined by the sports governing body. Additional Lighting plan '**South Holland Pitch Lighting Plan**' document has been submitted to support this. Acoustic boarding has been implemented as per recommendations in the additionally provided site wide acoustic report, to suitably minimise noise impact to nearby residents below WHO requirement of 50dB, with description of the specific acoustic boarding in this report.

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Section 2 – General Information and Briefing Notes

General Information	
FEASIBILITY REPORT & DESIGN AND ACCESS STATEMENT REQUIREMENTS	Labosport Ltd have been appointed to produce a design and access statement concerning the proposed creation of a Synthetic Turf Pitch (STP). This feasibility report & design and access statement (DAS) presents a concise explanation of the appropriate design principles applied to this project; demonstrating the merits of this proposal in context and describing relevant design influences that have underpinned decision making throughout, to ensure that the proposals meet client expectations, planning policy recommendations and published technical guidance, including material considerations associated with the proposal. We consider the proposal is based upon best design practices for external sports facility provision. A separate planning statement will be attached to the planning application to adequately address national and local development control policies.
DEVELOPMENT LOCATION	The location of the proposed STP is shown below: **Castle Sports Centre, Albion Street, Spalding, PE11 2AJ** Centred approximately at National Grid Reference: **Easting: 524973** **Northing: 323213** 
SITE OVERVIEW	The site area for the proposed STP is an existing natural turf sports area (Pitchpower assessed as Basic 36%), with one adult 11v11 natural grass football pitch, one disused cinder athletics track, and one demolished BMX track (demolished as not safe for use).
APPLICANT	**South Holland District Council** Council Offices, Priory Road, Spalding, Lincolnshire, PE11 2XE
PLANNING AGENT	James Hobson JEH Planning Ltd Lindley House Hungate Bishop Monkton Harrogate HG3 3QL

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PROPOSAL DESCRIPTION (FOR STP ONLY)	**The creation of a Synthetic Turf Pitch at South Holland Health & Wellbeing Hub PE11 2XE, including Fencing, Floodlighting & Ancillary Equipment.**
PURPOSE AND USE	This application seeks planning approval to create a synthetic turf sports pitch in accordance with relevant technical guidance. The facility will be designed to meet the following sporting provision(s): Football – Football Association's Technical Guidance and Current Standards for an 11v11 91 x 55m pitch.
PROPOSAL LOCATION	Further details of the proposed development are contained within this report and additional documentation (drawings and documents).
DEVELOPMENT AMOUNT	<table><tr><th>Aspect</th><th>Area (m2)</th></tr><tr><td>Synthetic Turf Surface Area (1Nr 97x61m)</td><td>5917</td></tr><tr><td>Total Development Area</td><td>6425</td></tr></table>
HOURS OF USE OF DEVELOPMENT	The proposed hours of use for the development are shown below: <table><tr><th>Day</th><th>Start Time</th><th>End Time</th></tr><tr><td>Monday-Friday</td><td>08:00</td><td>22:00</td></tr><tr><td>Saturday</td><td>08:00</td><td>18:00</td></tr><tr><td>Sunday / Bank Holiday</td><td>08:00</td><td>18:00</td></tr></table> *Please note, the hours of potential use of sports lighting has been described in lighting section of report.*

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Section 3 – Design and Access Statement

Design & Access Statement Principles	
NATIONAL PLANNING POLICY FRAMEWORK	The National Planning Policy Framework sets out the Government's planning policies for England and how these are expected to be applied. It provides a framework within which local authorities can produce their own distinctive local / neighbourhood plans, which reflect the priorities of their own communities.
DESIGN AND ACCESS STATEMENT REQUIREMENTS	A Design and Access Statement should be a short report accompanying and supporting a planning application, to illustrate the process that has led to the development proposal, explaining the proposal in a structured manner, with due detail included depending on the scale / complexity of the application. The general thesis is a Design and Access Statement should: • Help to ensure that development proposals are based on thoughtful design processes with a sustainable approach to access. • Improve the quality of the proposal, by clear explanation of the design and how it relates to the current site. • Help Local Planning Authorities understand the analysis that has been previously undertaken to prepare the final design prior to the seeking of necessary statutory approvals. • Provide local communities, access groups, residents, and other stakeholders with a clear understanding of the proposals, with the aim of minimising potential wrongful interpretation of proposals due to technically confusing documentation. A Design and Access Statement should increase certainty for people affected by the development, enabling transparency to all potential stakeholders, improving trust between communities and developers.
DESIGN COMPONENT	A Design and Access Statement should explain the design principles that have been applied to particular aspects of the proposal including: • Scale: Length, Width and Height of any development proposal. • Amount: The amount of any development. (For non-residential development, this means the proposed floor space for each proposed use). • Layout: The way in which any buildings, routes, open spaces are provided, in relation to each other surrounding the development. • Landscaping: The treatment of private and public spaces to enhance & protect the amenities of the site and the area it is situated through hard / soft landscaping measures. Statements should explain the function of any landscaping, for example sustainable drainage purposes, shading, climate change adaptation purposes, and explain how it will be maintained. • Appearance: The aspect of a proposal that determines the visual impression it makes, including the external built view of the development, its materials, lighting, colour, etc.
ACCESS COMPONENT	A Design and Access Statement should explain the access principles, in relation to 'access to the development', explaining how access arrangements will ensure that all potential users will have equal and convenient access to the development and the public transport networks. The statement should address the need for flexibility of the development and how it may adapt to changing needs.

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<table>
<tr><th colspan="2">Proposal Description</th></tr>
<tr><td>PROPOSAL DESCRIPTION</td><td>Planning permission is sought to create a Synthetic Turf Pitch with associated features including:
Installation of a new FA guideline 11v11 Synthetic Turf Pitch (STP) sized 91 x 55m with additional FA recommended 3m safety run off with additional cross play line markings.
Installation of new hard standing surface for pedestrian access, goal / container storage, spectator viewing and maintenance / emergency vehicle access.
Installation of new 4.5m (maximum) high twin bar panel fencing with associated noise reducing dampeners
Installation of new LED floodlighting system</td></tr>
<tr><td>PURPOSE AND USE</td><td>The proposals will result in the loss of a natural turf playing pitch, however the provision of the new STP will provide increased potential usage in comparison to the existing natural turf surfaced pitch, for benefit of current and potential future users of the facility, both during the day and evenings / weekends via pre-arranged and structured community access. The loss of previous recreational use cinder track has been negated by the wider site proposals to include a running trail around the facilities.

Synthetic Turf Pitches are more durable compared to natural turf, especially during winter weather conditions, which offers increased opportunity for sports use to improve the health and wellbeing of the local community.

The proposed facility will offer a variety of football pitch sizes and training areas suitable for a range of age groups within the same enclosed playing space. This supports grassroots sport development plans.

The STP will be capable of supporting the following formal pitch arrangement(s):
<table>
<tr><th>Application Type</th><th>Pitch Size</th><th>Quantity</th></tr>
<tr><td>11v11 Football</td><td>91 x 55m</td><td>1</td></tr>
<tr><td>9v9 Football</td><td>73 x 46m</td><td>1</td></tr>
<tr><td>7v7 Football</td><td>55 x 37m</td><td>2</td></tr>
<tr><td>5v5 Football</td><td>37 x 25.5m</td><td>4</td></tr>
</table>
This is in line with FA / FF Recommended Pitch Layout documentation.</td></tr>
<tr><td>LOCAL FOOTBALL FACILITY PLANS</td><td>The Local Football Facility Plans for South Holland are:
Increasing access and provision of 3G Football Turf Pitches for training and match play. (current identified shortfall of 3Nr full sized 3G STP’s)
The Local Playing Pitch Strategy (created by the FA, local authorities and the community) indicated a shortfall of three 3G Synthetic Turf Pitches (potentially 2Nr full size and 1Nr small sided), to help provide alternative reliable pitch space to relieve grass pitch stock. Castle Sports Centre was identified as a potential site for an 11v11 3G STP due to it currently hosting 3Nr adult teams as well as various community user groups and informal users. With the site being in a central location with high population density (and further housing growth due) it is anticipated that the site would be highly suitable to locate a required STP.</td></tr>
<tr><td>SPORTING PROVISION</td><td><u>Football Provision</u>
The proposed STP will directly replace a natural turf surfaced sports pitch, and therefore the proposal does not result in loss of sporting provision.

<u>Athletics Provision</u></td></tr>
</table>

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	The former disused cinder athletics track will be replaced by 'parkrun' trail with more formal athletics features as identified in the wider proposals.
SITE LAYOUT AND LOCATION	The optimum location for the proposed STP was considered based on convenient proximity to: • Any changing facilities • Any welfare accommodation • Any reception facilities • Any management / supervision offices • Any vehicular parking areas Furthermore, the STP is restricted to its current position due to: • The position of two high-pressure rising mains that pass through the site, that carry a 3m easement • Root protection zones to the northern and western boundaries • A 9m easement from the northern ditch (cemetery drain) • Position of the new proposed health & wellbeing hub building Additionally, consideration was given to: • Avoidance of unacceptable impact to residential neighbours (in relation to noise, visual, lighting, etc) or the ability to incorporate impact mitigation measures into the development proposals where impact was noted. It was concluded the proposed application area provides the best solution in relation to the above considerations, given the specific site scenario and requirement to maintain other aspects of the site. New facilities are being provided as part of the wider scope for the proposals on the site, with surveys identifying areas for impact mitigation for residents (see accompanying independent noise impact assessment report).

Facility Design	
PITCH DIMENSIONS	The development is to include: • Main pitch size of 91 x 55m (FA Guideline 11v11 size) resulting in a synthetic turf surface of 97 x 61m (when FA recommended 3m run off installed). • Additional painted line markings, as outlined in design drawings. • Additional Goal Recesses, Spectator Areas and Access Routes as outlined in design drawings.
SURFACE LEVEL & GRADIENTS	The topographical survey shows the below existing site gradients where the facility is to be located: Longitudinal Gradient: 0.60 % Lateral Gradient: 0.00% It is recommended to build a sports pitch to a maximum gradient of 1%, where possible, to maintain good sporting characteristics. Given the existing topography survey undertaken, the proposed STP will be designed to match existing gradients in the area, ensuring that minimal bunding is required. There will be an element of regrading the formation layer to ensure suitable space for

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	installation of the upper layers of construction. This will ensure a fall towards the proposed drainage outfall.
CONSTRUCTION MAKE UP	Typical construction build-up for synthetic turf pitch development includes either: <u>Dynamic Base Synthetic Turf Pitch Construction</u> • Pitch Synthetic Surface • Shockpad Layer • Dynamic Stone Layer • Sub Base Layer (typically 200-300mm of crushed stone) unless sub surface conditions dictate an alternative approach to ensure quality of installation and/or potential attenuation of surface water • Formation Layer <u>Engineered Base Synthetic Turf Pitch Construction</u> • Pitch Synthetic Surface • Shockpad Layer • Macadam Layer • Sub Base Layer (typically 200-300mm of crushed stone) unless sub surface conditions dictate an alternative approach to ensure quality of installation and/or potential attenuation of surface water • Formation Layer Following Planning Approval, Contractors on the Football Foundation Framework will be required to provide detailed tendered designs identifying their specific approach to installing the pitch. This will be based upon surveys that have been undertaken which provide information for their design. If the Local Planning Authority desire additional information prior to construction, the following Planning Condition could be inserted in the planning decision notice, this would allow the subsequently chosen Contractor to develop and submit supplementary detailed designs of their proposal in this regard: *'Prior to the Commencement of Works, the chosen Contractor is to submit detailed drawings showing their proposed construction make up for the pitch, confirming that the designed construction is in accordance with the planning decision notice. If the detailed design conflicts, in any way, the Contractor is to clearly state reasoning for desired adjustment, producing information as required to ensure that the condition can be discharged by the Local Planning Authority.'* The contractors design will be undertaken in complete accordance with: • The Sport and Play Construction Association (SAPCA) Code of Practice for the Design, Specification and Testing of Bases for Outdoor Synthetic Sports Areas • The proposed drainage strategy for the wider site
DRAINAGE DESIGN	The National Planning Policy Framework in Annex 3; Flood Risk Vulnerability Classification, defines in the section that Water-Compatible Development includes: Amenity open space, nature conservation and biodiversity, **outdoor sports and recreation** and essential facilities such as changing rooms. It has therefore been considered that this proposed development would fall under this classification. It is however, a design requirement to ensure that all weather sports pitches can drain during wet weather to allow continuous play.

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	The proposal is for a synthetic turf pitch, would have the following typical design features: • Surface layer will be a synthetic turf surface, which will have a porosity rate measured at a minimum of 500mm/hr • Beneath the synthetic turf will be a permeable shockpad layer, which will have a porosity rate measured at a minimum of 1000mm/hr • Beneath the shockpad layer will be a new open textured porous macadam or dynamic stone layer, which will have a porosity rate measured at a minimum of 1000mm/hr • Beneath the open textured porous macadam or dynamic stone layer will be a 200-300mm thick sub base, which will have a porosity rate measured at a minimum of 1000mm/hr Whilst the proposed development is designed to be a water compatible development which is not damaged during flood event. In the case that percolation into the ground or attenuation within the construction is not enough to prevent surface flooding, the surface materials used within the development have been chosen as they are not affected by flood events, in accordance with guidance for water compatible developments as outlined in NPPF documentation. As noted in the Drainage Design, the STP drainage will flow into a 300mm diameter outfall pipe to SW2, which will be fitted with a hydrobrake flow control, restricting the flow of water to the greenfield run off rate (2.1l/s), which will then flow through various pipe's to the attenuation basin. The specific STP Drainage will incorporate a lateral and perimeter pipe network within the formation layer of the construction. Surface water will drain through the various above construction layers (noting that the 200-300mm sub base will be DOT Type 3 stone (30% void space allowing attenuation of surface water), reaching the lateral drainage system of pipes installed in the formation layer. These lateral drains will connect to perimeter drains that transfer the surface water through to the hydrobrake flow control within chamber SW2 as noted in the drainage design.

Proposal Component Design	
SYNTHETIC TURF PITCH (STP) SURFACING SYSTEM	The proposed pitch surface will be a long pile length, tufted synthetic turf, coloured grass green, partially in-filled with Stabilising & Performance material. Designed to meet necessary National / International Sports Governing Body Performance Requirements. This will include an associated shockpad component (for enhanced performance and infill reduction).

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PERIMETER BALL STOP FENCING / PITCH PERIMETER BARRIER	Ball stop fencing will be installed around the perimeter of the pitch in locations shown in the drawings associated with this proposal. This includes 1.2-4.5m high twin bar panel fencing, with noise reducing dampeners, finished to polyester powder coated RAL6005 Dark Green, supported with an intermediate post system and entrance gates of matching colour. The fencing type will be steel open mesh fencing containing a general 200 x 50mm aperture (and 66 x 50mm rebound aperture to the internal pitch perimeter barrier). Fence panels are fixed onto posts with 8mm galvanised security bolts to (U shape) brackets containing threaded inserts and are insulated from the posts using noise reducing dampeners (neoprene washers or similar) on every fence post / mesh fixing point, to aid noise reduction and acoustic attenuation by reducing rattle and vibration from ball impacts. Panel connectors are applied at horizontal panel joins to increase rigidity of the fencing system.
LED FLOODLIGHTING SYSTEM	General Appearance / Lighting Requirements LED floodlighting will be installed in locations shown in the drawings associated with this proposal. The lighting system will include 6Nr 15m high tubular steel masts finished galvanised 7275 self-coloured, mounted with 12Nr LED luminaires (2Nr per column), designed to meet the required Sports Governing Body requirements. LED floodlighting is required to satisfy the necessary and planned weekly usage for community participation. The lighting system will be operated during evenings of permitted use, after dusk, and up to the approved curfew hour. A lighting design supplements this planning application, and is based around the following:

Requirement	Detail
Description of Lighting Column / Luminaire Design	Refer to lighting design document
Lighting Performance Requirements	BS EN 12193 FA Guide to Floodlighting ILP Guidance Documentation
Specific Lighting Performance Requirements	Average Lux = >200Lux Training Average Lux = >120Lux Uniformity = >0.6 Colour Temperature = 4200K-5700K
Details of any cowls / hoods / shades / baffles to control light spill & glare	All luminaires are designed to have a zero upward light ratio without the need for additional accessories (rear louvres) to limit overspill.

The floodlight system has been designed to provide sufficient performance as required by the sports to be played on the surface, as detailed in relevant sporting application lighting documentation. LED floodlighting was chosen, ensuring that the lighting can be controlled to reduce energy consumption and impact on surrounding environment, by offering dimming potential and ability to light individual sections of the pitch (e.g. lateral cross pitches), to facilitate economical / ecological management and prevent 'over lighting' to pitch areas when not in use.

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BS EN 12193 is the standard that specifies requirements for sports lighting to ensure good visual conditions for players, athletes, referees, spectators, and CTV transmission. Its objective is to provide requirements for good quality sports lighting by:

- Optimising the perception of visual information used during sports events
- Maintaining the level of visual performance
- Providing acceptable visual comfort
- Restricting obtrusive light

Exterior Lighting Environmental Status

ILP GN01 documentation categorises the environment into five zones as per below:

Zone	Surrounding	Lighting environment	Examples
E0	Protected	Dark (SQM 20.5+)	Astronomical Observable dark skies, UNESCO starlight reserves, IDA dark sky places
E1	Natural	Dark (SQM 20 to 20.5)	Relatively uninhabited rural areas, National Parks, Areas of Outstanding Natural Beauty, IDA buffer zones etc.
E2	Rural	Low district brightness (SQM ~15 to 20)	Sparsely inhabited rural areas, village or relatively dark outer suburban locations
E3	Suburban	Medium district brightness	Well inhabited rural and urban settlements, small town centres of suburban locations
E4	Urban	High district brightness	Town / City centres with high levels of night-time activity

This site would fall into environmental **Zone E3**, and has been designed to meet the below limitations, as outlined in ILP GN01:

Obtrusive Light Limitations for Exterior Lighting Installations						
Zone	**Sky Glow ULR (max %)**	**Light Intrusion (into windows) EV (lux)**		**Luminaire Intensity**		**Building Luminance**
		Pre Curfew	**Post Curfew**	**Pre Curfew**	**Post Curfew**	**Average L (cd/m2)**
E0	0	n/a	n/a	0	0	<0.1
E1	0	2	<0.1	2500	0	<0.1
E2	2.5	5	1	7500	500	5
E3	**5**	**10**	**2**	**10000**	**1000**	**10**
E4	15	25	5	25000	2500	25

LED luminaire technology has been chosen to meet the requirements set out in ILP GN01, whilst reducing energy consumption and potential impact on the surrounding environment / ecology. ILP GN08 states: *Many night-flying species of insect that bats hunt are attracted to light, especially those light sources that emit an ultraviolet component (LEDs) have removed this) or have a high blue spectral content (this can include LEDs).*

ILP GN08 Hierarchy of Light Impact

The lighting design has been produced in accordance with the mitigation hierarchy outlined in ILP GN08, by:

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- Avoidance – Where possible, impact to biodiversity has been avoided. Where this is not possible:
- Mitigation – Where complete avoidance of impact to roosts, foraging and commuting habitat is not possible, the lighting design has been developed to minimise such impact. It is noted that the core performance requirements for the relevant sporting applications must be maintained, but where necessary, detailed designing of the lighting system including the areas of potential light spillage onto impacting areas has been undertaken by professionals tasked with minimising impact, to ensure that the light design proposed provides minimises potential impact whilst still providing the performance requirements required for the applications they are to be used for. Where this is not possible:
- Compensation – Where impact is noted and there is no ability to avoid or mitigate against the impact of the lighting scheme, as per the hierarchy in ILP GN08, constructive discussion with Local Planning Authorities Ecology department should be undertaken during the planning process, with an aim for setting a relevant Pre-Use Condition for off-setting of unavoidable impacts.

Mitigation Measures Included

The following specific mitigation measures / considerations were discussed and have been adopted on this project as per ILP GN08 Step 4 (Mitigation Measures / Sensitive Design):

- LED Lights – LED luminaires have been specified, due to their sharp cut-off, low intensity, good colour rendition and dimming capability (the design is to meet necessary 200lux average illuminance as per the relevant sporting performance requirements, whilst having the ability to dim the lights to 120lux for training events).
- Warm white light source (2700K or lower) was not possible on this application due to the performance requirement of needing to provide lighting between 4200-5700K to meet the relevant performance requirements. Reducing the light source to 2700K would mean the lighting system would not be fit for purpose, and not provide adequate safety for use of the facility by sporting users.
- Column heights were considered to produce a design maximising downwards light, and therefore minimising light spill and glare visibility.
- Operation hours – It is noted that the hours of use for the facility only shows the intended use of the facility as a whole, and do not detail how lighting will be operated during these uses. Further clarity is provided in the following table, illustrating an expected weekly plan of floodlight use during winter months:

	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22
M															
T															
W															
T															
F															
S															
S															
				Hours of Potential Use of the Facility											
				Hours of Additional Potential Floodlight Use (typical)											

Please note:

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- During spring, summer and autumn seasons, it would be possible to turn the floodlights on later during each day (given the usual longer daylight hours), to further minimise impact on species during months other than winter.
- Floodlighting will only be operational when the facility is in use, and therefore it is not intended that the lighting will automatically run continuously as per the above table every day.
- The above table details the typical winter usage, assuming the pitch is in use for all operational hours, and therefore provides a 'Maximum' illustration of floodlight use.
- The floodlighting is designed to meet the performance requirements as set out for the relevant sporting application with ability for dimming of the lights for lower sporting applications, providing both ecological benefit through lowering of the lighting intensity / spillage, and economic benefit through operational costs for running the floodlighting. It is therefore in the applicant's interest to ensure that dimming of the lighting system occurs during most training applications, to lower operational costs.

Part Night Lighting

The lighting proposed is to be controlled by human activity (light on demand) and controlled by dimming to suit the particular use at any given period. *Given this, it is expected that the Local Planning Authority will accept the above information and subsequent lighting design as the 'worst-case' practical scenario on site, and their response to proposals will take into account that the sports facility lighting design proposed (and its dimming ability) will only be operated during specific times of day / year during use of the facility, as opposed to other lighting applications they may assess that seek constant use.*

Floodlight Mast Design

The mast height chosen was calculated using methods detailed in CIBSE Document 'LG04 Sports Lighting (2023)', ensuring that:

- Vertical overspill is low.
- Good uniformity around the playing surface is obtained.
- Lights are directed downwards towards the playing pitch surface.
- Sky glow is avoided.
- Full cut-off is achieved (as recommended by The British Astronomical Association's Campaign for Dark Skies).

If higher columns were used, more intensive lighting would be required to provide necessary performance results at ground level.
If lower columns were used, a higher aiming angle would be needed on each luminaire, which would increase overspill and glare during use.

The masts are of a slim design, which will prove further benefit to the visual impact of floodlighting during the daytime.

Floodlight Performance

The necessary performance requirements for floodlighting development is outlined in the following documents:

- BS EN 12193
- FA Guide to Floodlighting
- ILP Guidance Documentation

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The lighting plan show the mast locations, floodlight orientations, luminance levels on the pitch (confirming it meets necessary performance requirements for the specific applications to be used). It is noted that ILP Guidance Documentation directly conflicts with BS EN 12193 / FA Guide to Floodlighting requirements in terms of the value of light source *(ILP GN08 suggests 2700K or lower, in comparison to FA Requirements of 4200-5700K*). As ILP is Guidance documentation, the lighting plan has been produced to meet the required sporting performance requirements, whilst also adhering to ILP Guidance where this does not conflict and taking into account GN08's hierarchy of Avoidance – Mitigation – Compensation.

Obtrusive Light

The closest residential properties have been assessed to establish obtrusive light calculations, to assess whether the lighting plan meets requirements for the relevant environmental zone. The results of obtrusive light testing on the residential properties have been included within the lighting plan*.

*As use of the facility is until 10pm, the measured illuminance during post-curfew scenarios (after 10pm) will be **0Lux**, as the lights will not be on, which results in the system being below the Post-curfew threshold for the Environmental Zone.

Lighting Design Information

The full lighting design has been included as an additional document 'South Holland Pitch Lighting Plan'. We have detailed the key parts below:

Item	Lighting Design Result	ILP / Performance Requirement	Pass / Fail?
Surface Full Illuminance	222Lux	>200Lux	Pass
Uniformity Full	0.71	>0.6	Pass
Surface Training Illuminance	120Lux	>120Lux	Pass
Uniformity Training	0.64	>0.6	Pass
Spillage House 1	1.03	Pre-Curfew = 10 Post-Curfew = 2	Pass*
Spillage House 2	0.79	Pre-Curfew = 10 Post-Curfew = 2	Pass*
Spillage House 3	1.01	Pre-Curfew = 10 Post-Curfew = 2	Pass*
Spillage House 4	0.61	Pre-Curfew = 10 Post-Curfew = 2	Pass*
Spillage House 5	0.53	Pre-Curfew = 10 Post-Curfew = 2	Pass*

**Please note, the design meets ILP Guidance for Pre & Post Curfew Scenarios, however, the proposed hours of use in this application does not require lighting to be used during Post Curfew scenarios.*

Lighting Design Conclusions

- The proposed floodlighting system is specifically designed to meet sports lighting requirements, and subsequently meets the requirements for the intended sporting applications and standards of play.

LABOSPORT LTD
Unit 3 Aerial Way, Hucknall, Nottinghamshire, NG15 6DW
+44 (0) 115 968 1998
info@labosport.co.uk

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	• The proposed hours of potential use for floodlighting has been shown, but it is noted that the floodlighting will only be on during actual use of the site, and this therefore represents worse-case scenario. • Given natural light during Spring, Summer and Autumn, it would be possible to turn floodlights on only when light is actually required. • The floodlighting design includes dimming features & ability to light part areas of the facility, therefore allowing the reduction of light during scenarios where full lighting of the area is not required. • Warm white light source (2700K or lower) was not possible, due to the sporting requirements outlined. • Other guidance notes in ILP GN01 & GN08 have been adhered to, where not in direct conflict with the sporting application requirements. • In line with ILP Guidance Hierarchy when creating a lighting design, where avoidance of impact to biodiversity was not possible, mitigation, by adjusting the lighting design specifically for the site scenario, has been undertaken to minimise the spillage of light as much as possible from areas that are not specifically the pitch. • The height of masts was chosen to provide the most efficient solution, in terms of minimising intensity required / spillage / glare. • The lighting design meets obtrusive light requirements for residential properties within the relevant Environmental Zone in which it is being installed.
HARD STANDING AREAS / GOAL STORAGE AREAS / ACCESS PATHWAYS	Hard-standing areas have been created around the pitch footprint, as per the associated drawings, to provide goal / maintenance equipment storage near the facility, and spectator viewing areas to ensure that the pitch meets FA's Technical Guidance. Access pathways have been included to all main access points to the pitch (pedestrian and vehicle), ensuring that players / spectators / vehicles do not: • Walk debris on to the pitch. • Allow infill migration to the local environment. Access pathways have been designed in accordance with Equality Act 2010, ensuring that the perimeter paths are a minimum of 1.8m width (unless unavoidable pinch points where width is reduced to 1.2m for no greater than 6m in length). If there are any areas this relates to for this specific site, the areas are shown within supplementary drawings. As per Sport England's Design Guidance Note – Accessible Sports Facilities, where access routes are steeper than 1:60, but not as steep as 1:20, a level landing has been created for every 0.5m rise along any access route. If there are any areas this relates to for this specific site, the areas are shown within supplementary drawings.
INFILL MIGRATION MITIGATION FEATURES	Measures detailed in CEN/TR 17519 have been adopted in full, ensuring the proposed development contains all relevant mitigation features to minimise any potential infill dispersion into the local environment, including: • Drainage Silt Traps / Micro-Filters • Infill Containment Barriers (500mm high as per CEN documentation for synthetic turf that is laid up to the outer perimeter fencing) • Decontamination Grates / Scraper Mats (at all entrances) • Boot Cleaning Stations (at all entrances) To further reduce the potential of any infill dispersion into the local environment, further measures have also been adopted, including:

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	• Surface System: The surface system installed will include a shockpad, which will provide sufficient performance characteristics that minimise the volume of performance infill required to meet Governing Body Performance Requirements. Installation of a shockpad typically reduces the amount of performance infill required by approx. 6-8KG/m2 (24-32 Tons over the size of the pitch), and therefore its inclusion will provide a system with much reduced loose infill. • Mowing Margins: 300mm wide mowing margins around the outer perimeter (outside of fenced footprint) to provide additional buffer separating the synthetic turf / perimeter fencing and adjacent natural grassed areas.

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Ancillary Equipment	
GOALS	Portable football goals will be provided and installed as required by the sporting pitches marked. These goals will be of a type for use on synthetic turf pitches. All goals supplied will comply with BS EN 16579.
STORAGE CONTAINER	A storage container will be installed within the footprint of the spectator area created as per the design drawings. The storage container will be of a standard design comprising of: • 2.529m high x 6.06m long x 2.44m wide container • High tensile profiled steel, finished powder coated RAL6007 Bottle Green The storage container will house maintenance equipment, as well as various sporting equipment, to ensure regular maintenance can be undertaken to the pitch. Regular maintenance of synthetic turf pitches ensures the following performance / environmental benefits: • Less compaction of turf and infill, resulting in better adherence to performance requirements over the medium / longer term. • Extended longevity of the turf system.
ACOUSTIC BOARDING	An independent Noise Impact Assessment was undertaken to ascertain any adverse noise created from the proposals for the wider site. Within this (additional document) it was noted that 2m high acoustic boarding should be installed to the West of the STP between the residential housing, to suitably lower noise impact below WHO requirement of 50dB. The findings of this report have been implemented in full within our design. **<u>Acoustic Boarding Standards:</u>** The acoustic boarding will be certified / constructed to: ISO 9613 BS EN 1794-1 BS EN 1793-1 BS EN 1793-2 The acoustic barrier fencing will consist of an overlap boarding construction, of acoustic specification 12kg/m2. This will consist of: 150 x 22mm vertical boards with 75 x 22mm cover strips 150 x 47mm gravel boards 100 x 47mm horizontal support rails 150 x 100mm timber on steel RSJ posts (2.4m centres)

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Section 4 – Planning Conclusions

Conclusions	
CONCLUSIONS	Having assessed relevant planning policies and material considerations relevant to this proposal, we request this proposal is accepted, due to the following: • The proposed Synthetic Turf Pitch will replace an existing area that has previously been used for football type applications, therefore providing access to greater quantity of provision in a suitable location and supported by effective and appropriate management arrangements, whilst implementing construction techniques outlined for the various specific components to ensure minimum waste and pollution is caused by the development, in accordance with **National Planning Policy Framework Section 2 - Achieving Sustainable Development**. • The proposal will give rise to a considerable benefit to the wider community through the provision of an enhanced playing facility and the opportunity for usage throughout the year, in accordance with **National Planning Policy Framework Section 8 – Promoting Healthy and Safe Communities** • The proposal will ensure surface water run-off is effectively managed and does not increase flood risk elsewhere, in accordance with **National Planning Policy Framework Section 10 – Meeting the Challenge of Climate Change, Flooding and Coastal Change**

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