

Ball Stop Netting – Detailed Design & Maintenance Scheme

Land at Green Acres Close, Emley.

15/10/2024

Introduction.

- 1.1. This document has been prepared by Newett Homes in respect of our site at Green Acres Close, Emley. It seeks to provide information on the detailed design and associated maintenance of the ball stop netting which is to be provided as part of the development of the site to enable the discharge of planning conditions relating to the ball stop netting.
- 1.2. Conditions 27 of the outline planning permission (ref. 2020/91215) and conditions 4 & 5 of the reserved matters permission (ref. 2021/93286) relate to the ball stop netting and state:

Condition 27 2020/91215	Prior to the commencement of development, a scheme for the management and maintenance of the approved ball-stop netting or an appropriate alternative mitigation measure shall be submitted to and approved by the Local Planning Authority (following consultation and advice from Sport England). The approved scheme shall be brought into effect upon first occupation of any dwelling within the ball-strike risk zone and shall remain in operation whilst the cricket ground and approved dwelling houses remain in use.
Condition 4 2021/93286	Prior to works commencing on the superstructure, the detailed design of the ball-stop netting and associated support columns shall be submitted to and approved by the Local Planning Authority following consultation with Sport England. The agreed ball-stop netting design shall be installed prior to the occupation of any dwelling within the site that the Labosport report deemed at risk of ball strike, to the satisfaction of the Local Planning Authority.
Condition 5 2021/93286	Prior to works commencing on the superstructure, a management and maintenance plan in respect of the approved ball stop netting, will shall include provision for routine inspection and maintenance, and long-term repair and replacement of columns, netting and such other associated apparatus, shall be submitted to and approved by the local planning authority following consultation with Sport England. The approved plan shall come into force upon the satisfactory installation of the approved ball-stop netting.

- 1.3. This design and maintenance scheme seeks to enable the discharge of conditions 4 & 5.

Detailed Design.

- 1.4. The design of the netting is provided at Appendix A and a layout plan for the fencing is provided at Appendix B.
- 1.5. The netting design comprises 6 no. support posts, a total of 75m of netting, and 2.5m stays at each end of the netting. Each post features a concrete foundation.
- 1.6. The netting has been designed so that it is raised 2m off the ground, this is to avoid animals damaging the bottom of the netting and to improve the lifetime of the netting. In the absence of netting to the lower 2m, 2m close boarded fencing will be provided underneath the netting and the netting will be secured to it to form a solid barrier. Gates have been provided to each end of the netting, as per the layout drawing, to secure the netting from passersby.
- 1.7. The netting has been designed on a pulley system to enable the raising and lowering of nets. Not only is this beneficial for the maintenance of the netting, discussed further below, it enables the netting to be removed once the cricket season is over, improving the longevity of the netting.
- 1.8. Engineering calculations have been undertaken based upon the detailed design; a letter of the findings is provided at Appendix C. The letter states: *"we deem the columns and the catch-netting system to be fit for purpose and suitable to withstand the worst-case loading"*.
- 1.9. Labosport have assessed the design of the netting, in particular its height and length and a letter of support is provided at Appendix D.
- 1.10. Notably, the length of the netting at 75m is more substantial than the 60m of netting approved within previous planning applications at the site, thereby improving safety.

Management & Maintenance Details.

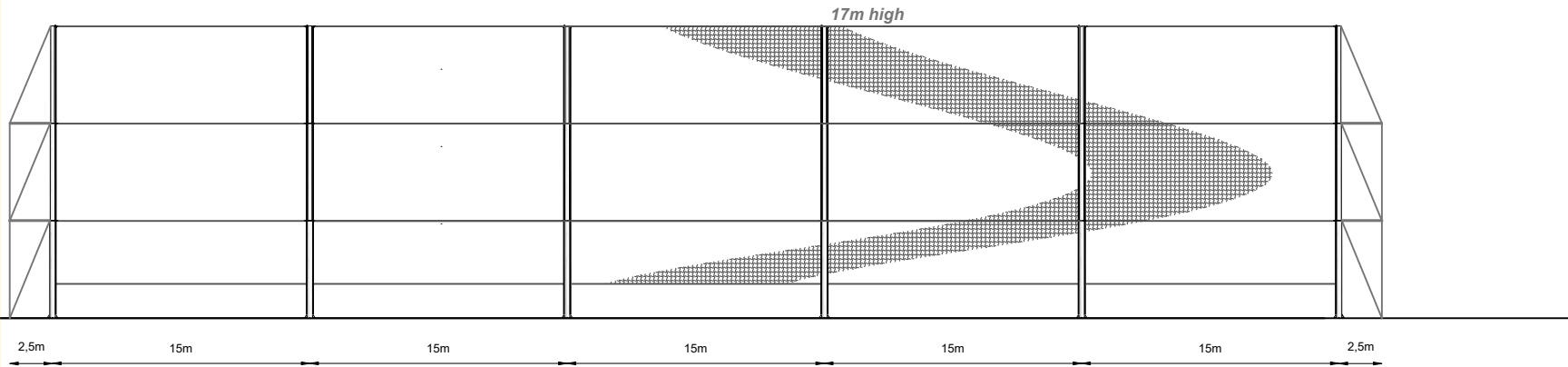
- 1.11. The management and maintenance of the proposed ball-stop netting will be the responsibility of the Management Company appointed by Newett Homes. The Management Company will be funded by a service charge levied annually on each dwelling within the development.
- 1.12. The netting manufacturer has advised that the lifetime of the netting is expected to be between 5 and 20 years depending on the exposure of the netting to severe weather conditions, and between 15 and 25 years for the posts. The manufacturer has confirmed stanchions benefit from a 10-year warranty, and a 1-year warranty for manufacturing and installation defects. The above timescales for the maintenance, repair and replacement of the ball stop netting and stanchions have been factored into the cost plan for the housing development and the service charge residents will pay towards the management company.
- 1.13. The manufacturer has advised of the need for routine maintenance on the basis of a complete inspection of the full equipment (netting and posts) prior to the commencement of each playing season.
- 1.14. The proposed ball stop netting design comprises an easy maintenance netting system, designed and installed in sections which allows for a pulley system to raise and lower each section individually from ground level. The netting can then be patched up, using patching kits, or

for any small repairs, a cable tie to secure the netting, and the netting is pulled back up from ground level with the pulleys.

- 1.15. Although typical repairs to the netting will not require any machinery due to the pulley system, the rear gardens of plots 14 – 20 will be subject to a 3m no-build zone along with removeable fence panels to ensure that, if necessary, machinery can access these plots to maintain the ball stop netting and associated support columns. This will be secured by detailing the maintenance strip within conveyancing plans for the plots affected. Alternatively, a cherry picker can be used to access the netting and support columns.
- 1.16. While the garage to Plot 14 will be located within the no build zone, this would not prejudice any equipment needed to maintain the netting. As highlighted above, the majority of repairs will be done via the pulley system and will not require the use of any machinery. The presence of one garage will not prejudice repairs given that there is plenty of space around the garage.
- 1.17. The management company will be responsible for raising the netting prior to the start of the cricket season, and lowering the netting once the cricket season is over. English cricket season generally commences in April and finishes in September. Therefore, the netting will be raised no later than 1 week before April 1st and lowered no earlier than 15th October. This will ensure the netting is raised a reasonable time prior to the start of the season and left in situ for a reasonable period once the season has finished.
- 1.18. The netting will be kept at the management company's storage premises off-site.
- 1.19. At least 1 month before the netting is due to be raised, the Management Company will undertake a visual inspection of the netting to ensure it is fit for use for the season ahead. In the event any repairs are identified during the inspection, these will be done prior to the date which the netting is due to be raised.
- 1.20. During cricket season, the cricket club will be provided with details of the appointed management company and will be responsible for reporting any damage during the playing season to the management company. The management company will be responsible for repairing the reported damage as soon as practicable as to avoid any delays to the playing season. The Management Company will seek to make repairs within 5 working days to ensure minimal disruption to cricket season.
- 1.21. This approach will ensure that annual monitoring and repair of netting, fencing and posts takes place, and that funds are available for necessary replacement at the appropriate time, with no burden falling on the Club. The Club will have no responsibility or liability in relation to the ball-stop system, whilst the Management Company will be obliged to ensure that the Club benefits from an appropriate, fit-for-purpose facility.
- 1.22. The ball strike netting will be brought into effect upon first occupation of any dwelling within the ball-strike risk zone and shall remain in operation whilst the cricket ground and approved dwellinghouses remain in use.

Appendix A

Netting Design



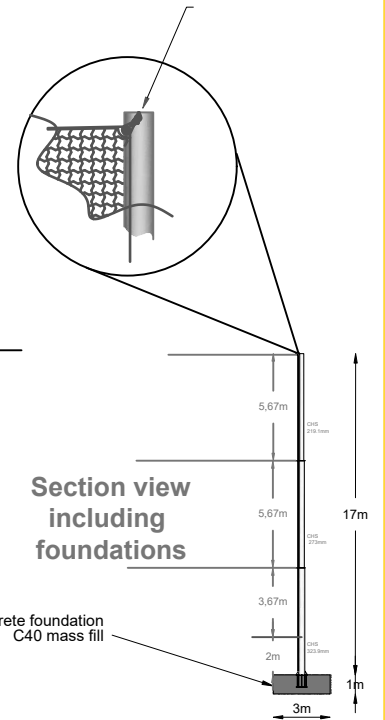
Elevation view;
Cricket Fencing
17m high;75m



Plan view



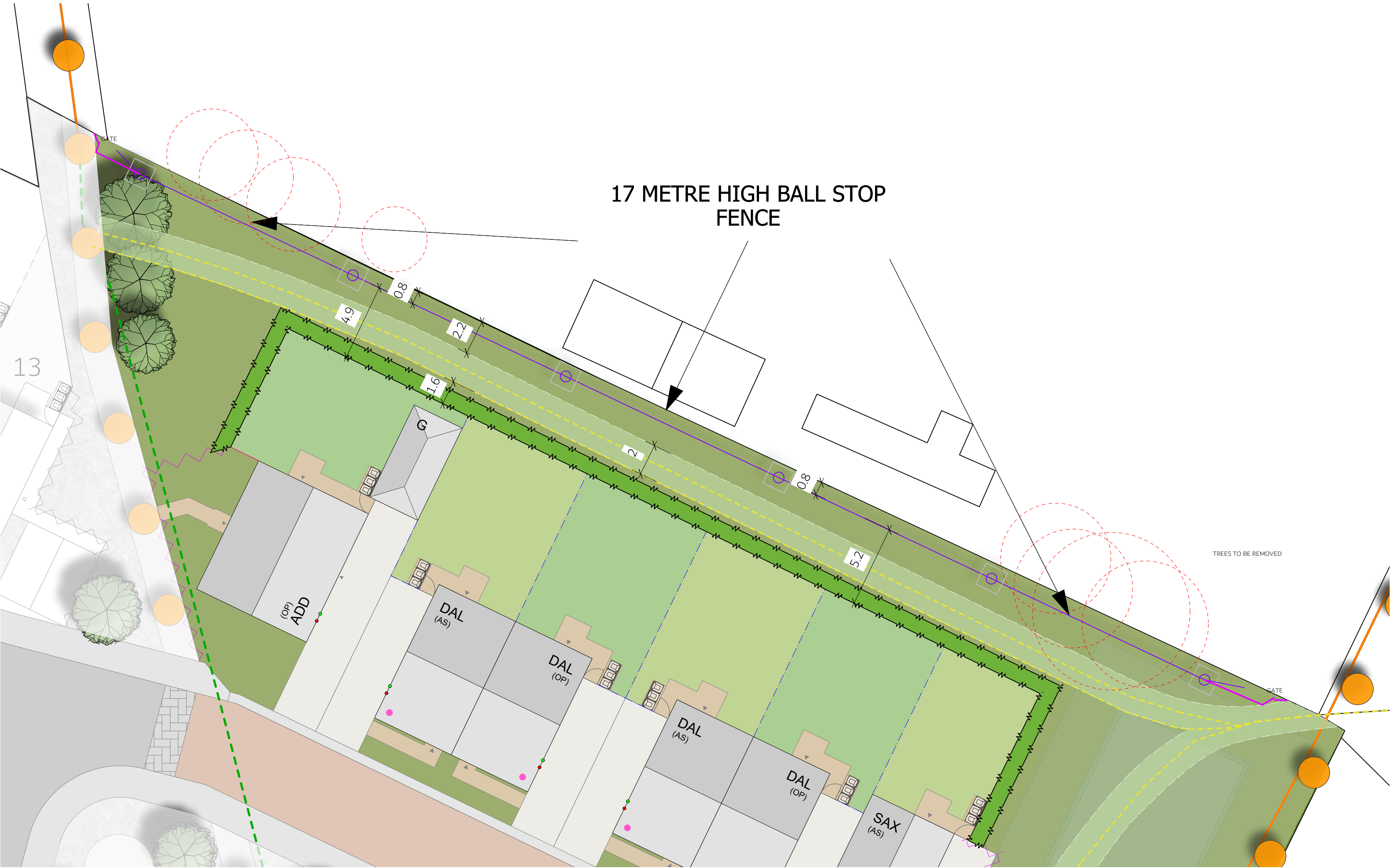
netting attached to pe ropes,going through pulleys down to ground to allow dropping and removal of netting in off season



Project	Emley CC	
Description	Cricket Fencing	
Views	17m high fencing	
Scale	1:400	Sheet size
Date	05.06.24	A4
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Ref:DW12012422		Rev:04

Appendix B

Netting Layout Plan



BALL STRIKE NET
SITE LAYOUT EXTRACT @ 1:200

Drawing Title	Ball Strike Net		
Site	Wentworth Drive, Emley		
Scale	1:200 @A2	Date	21/06/24
Drawn	MC		
Drawing No.	Z155.111	Rev.	B
Thorpe Arch Grange Walton Road Thorp Arch LS23 7BA			
01937 543599 www.newetthomes.co.uk			
			

Appendix C

Engineering Calculations

Date: 24 April 2024

Ref: 964let907_I

Dear

Re Emley Park CC Catch-Netting

Upon submission of your final drawing, DW12012422-Rev4, for the proposed catch netting scheme, we have now completed our assessment of the structures and system. Please find below a summary of the final stage of these works.

Analysis – please refer to my email on the 16th April 2024 for the further information on the general approach.

The critical load case for the initial analysis, case C¹, was assessed with the addition of the stay system (creating case D). The following stay system configurations were considered:

Standoff: 1m, 1.5m and 2m.

Tension: 25kg to 200kg initial constraint (tension).

Steel wire rope (SWR): 10mm as specified (7x7 used).

We settled on a stay system with 2m standoff from the columns and an initial tension of 50kg. The tension in the system provides a lesser impact than the geometry of the system. The larger the standoff, the better the system behaves; however, consideration also needs to be given to the length of the outriggers.

Results

The final stay solution produced the following usage factors² in the column and stays:

Section	Usage Factor
Top	Combined actions ³ – 0.10
Middle	Combined actions – 0.27
Base	Combined actions – 0.65
10mm Steel wire rope	0.52

Upon review, the usage factor for the steel wire rope is still a little high when considering the required factor of safety on the ropes breaking load (63.5kN). As such, we recommend increasing the wire size to 12mm and/or lowering the nets at a lower wind speed. For the latter, we recommend 40mph winds, Beaufort Force 8 conditions, as the limiting factor.

¹ Load case C – End col w/net, limited wind & no support. This load case assumes that there is not stabilising section on the opposite site, subjecting the column to both the parallel and perpendicular forces – resulting in bi-axial loading.

² Usage factor = load over capacity, anything 1.0 or under is acceptable (excluding the SWR).

³ Combined usage is the linear summation of the axial loading and the bi-axial bending.

The foundations, 3m x 3m x 1m deep, were sufficient prior to the addition of the stay system. Overturning for Load case C was 2.04 (above the 1.5 we look for), sliding was 5.14 (we typically look for above 2.0) and bearing was 64kN/m² which is small enough to not warrant further checking. Sufficient support will be required for the stay system anchor, the loads for which are 58kN axial and 9.1kN shear. A suitable ground/deadman anchor will probably suffice as uplift will be the critical scenario.

For the outriggers, we suggest attaching them at either side of the column to provide stability. The size of the members is not critical as they bear relatively little loading. Therefore, we have allowed Hi:Nets to specify the members based on what is most practical for them. In our assessment, we used 42.4mmØ tubes. If the chosen members differ from this, we request to be informed so we can update our models accordingly.

No details for the flange joints have been provided, so no further works beyond our comments in my earlier email have been completed.

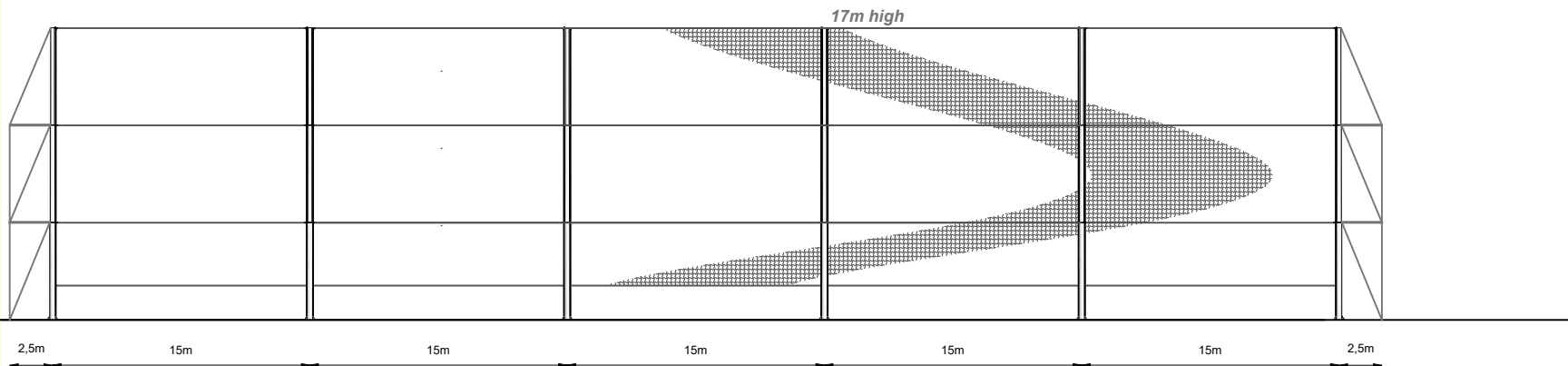
Conclusions and recommendations

We deem the columns and the catch-netting system to be fit for purpose and suitable to withstand the worst-case loading, if constructed as discussed herein and as per the provided drawing (comments in this document precede the drawing). The arrangement should be maintained, and regular inspections should be conducted.

If you require any further information, please do not hesitate to ask.

Yours sincerely,

Conor Brewer
MEng(Hons) CEng MICE MAPM



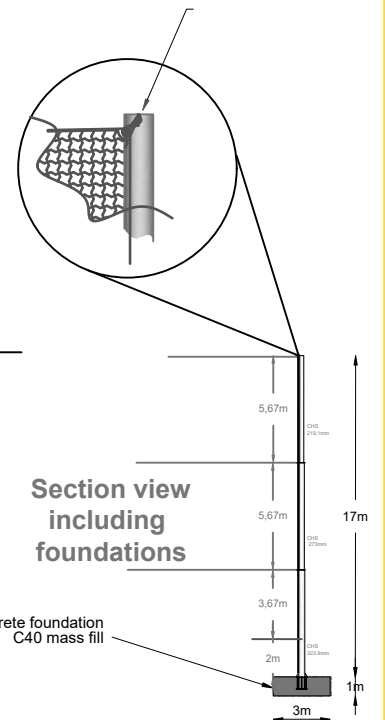
Elevation view;
Cricket Fencing
17m high;75m



Plan view



netting attached to pe ropes,going through pulleys down to ground to allow dropping and removal of netting in off season



FENCING FOR THE SPORTING INDUSTRY		
HI-NETS		AJW
		CONSTRUCTION
Project	Emley CC	
	Cricket Fencing	
Description	17m high fencing	
Views		
Scale	1:400	Sheet size
Date	05.06.24	A4
This Drawing and any designs indicated thereon are the copyright of Hi-Nets(AJW construction LTD) All rights reserved .		
		Ref:DW12012422 Rev:04

Appendix D

Labosport Letter of Support

08/10/2024

Reference: Ball Trajectory Assessment

We have undertaken ball trajectory risk assessments for numerous different sports (cricket, football, rugby, golf) for the past 8 years and have developed significant expertise in trajectory modelling, and the evaluation of boundary mitigation strategies. Our work is award winning and has been recognised by SAPCA.

Cricket assessments use a ball projectile model and supporting data from research undertaken, based on professional level cricket, by Labosport for the England and Wales Cricket Board (ECB).

Our report, LSUK.20-0563_V2, gave recommendations for the height of mitigation required to minimise the risk of ball strike. The Cricket fencing plans, fencing-A4 Elev R4, detailed within the submitted plans are sufficient and exceed the recommended mitigation within our report. The plans are attached to this letter of support.

Sport England are the governing body that stipulates the requirement for these risk assessments to be carried out as part of the planning process and may object subject to the findings of our report. Labosport carry out a significant number of these assessments every year and as such our methodology is robust.

We acknowledge that 100% risk mitigation is impossible and therefore to provide a measured approach we mitigate for the "majority of risk". This is the standard level we recommend around the country for a number of sports including but not limited to cricket, football, rugby and golf.

Sport England accept this as an acceptable level of risk mitigation and approve of this approach during the planning process.

Please do not hesitate to contact me should you have any questions or if you require any further information.

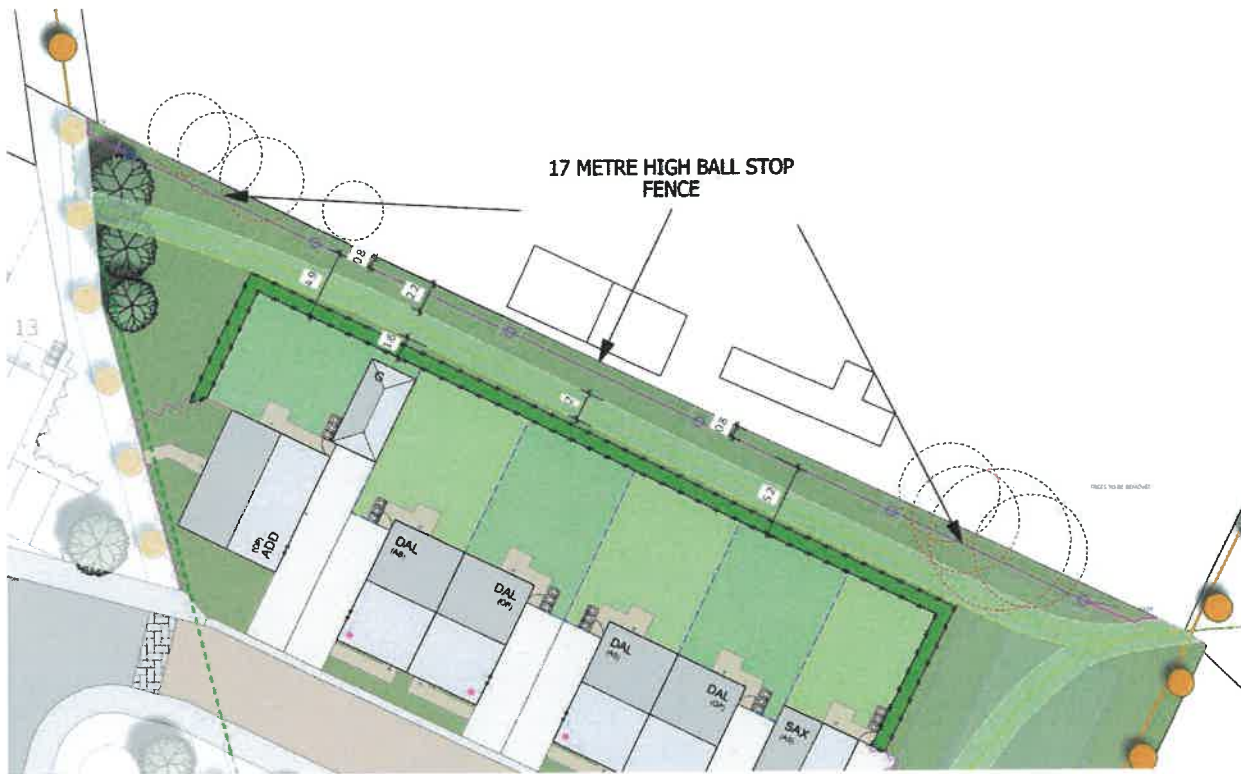
Yours faithfully,

David Rigby

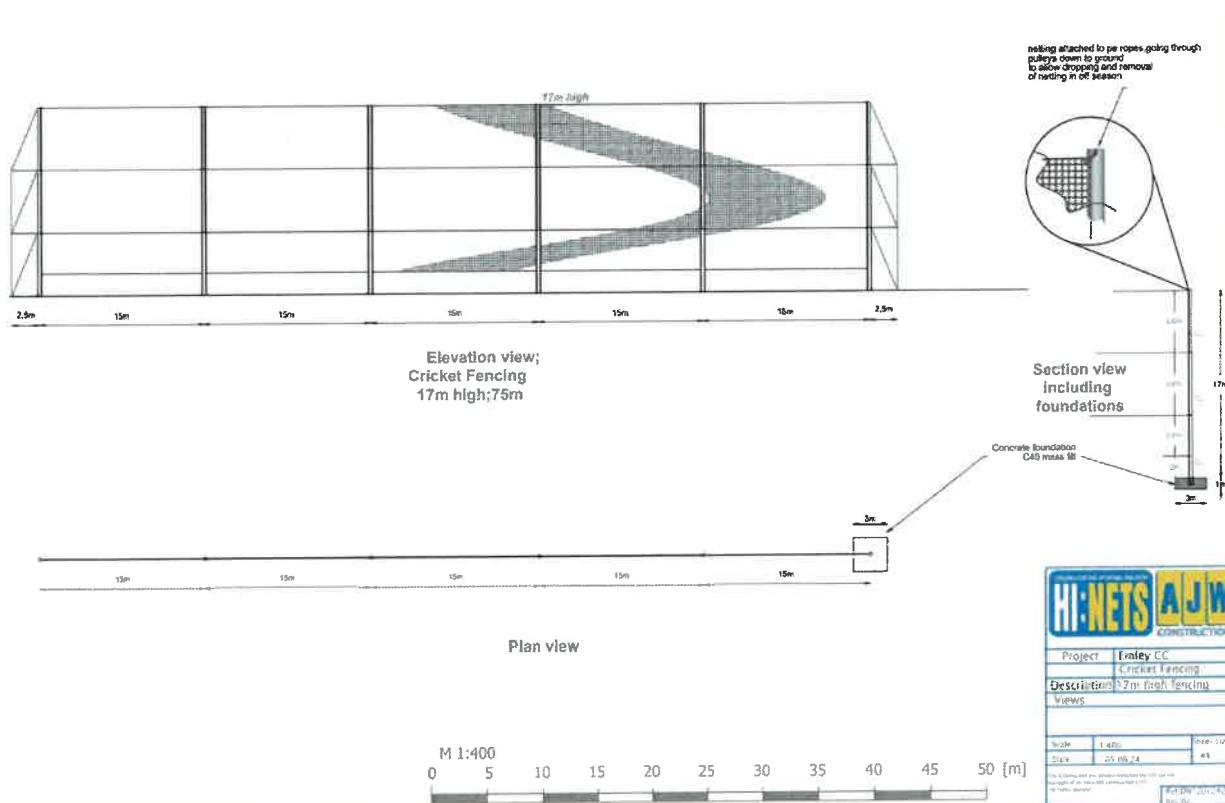
Technical Director

Version Number	1.0	Page 1 of 2
Issue Date	08/10/2024	
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Z-155.111B-Ball Strike Net – 40 Units



Fencing-A4 Elev R4



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