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HATFIELD BROAD OAK

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18 October 2022

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1 INTRODUCTION

An advisory visit was requested to review the condition of sports fields in the village of Hatfield Broad Oak, Essex.

Agrostis had visited the site in 2016 when a recommendation for a catchwater drain installation and subsequent slit drainage was made. Although these recommendations were not acted upon, the maintenance programme also provided at that time had been followed. Since then no further contact had been made with Agrostis and use of the site appears to have continued in a generally satisfactory manner.

The present advisory visit was requested in view of a number of concerns regarding the performance of the sports pitches. The Parish Council, who own and manage the site, had been told that the cricket outfield was not safe to play on, possibly for reasons of excessive hardness during the playing season and the appearance of cracks caused by shrinking soils which had become a potential trip hazard.

The Council also had concerns regarding the costs of maintenance and in particular the relationships between maintenance expenditure, quality of outcome and intensity of use.

The site was visited again on 15 September 2022 in order to try and resolve some of these issues.

1.1 Contacts

The site inspection was undertaken under the direction of Ian Brown, Locum Clerk for Hatfield Broad Oak Parish Council, acting for Councillor Tessa Pemberton.

Hatfield Broad Oak Parish Council.

Postcode: CM22 7JD

Tel: 01371 871641

Email: locumclerk@gmail.com

Tessa Pemberton Email : pembertontessa@gmail.com

1.2 Site Location

The site is located to in the village of Hatfield Broad Oak, Essex, west of Dunmow Road (the B183) and north of High Street.

OS X (Eastings): 554892

OS Y (Northings): 216825

National Grid: TL548168

Nearest postcode: CM22 7JQ

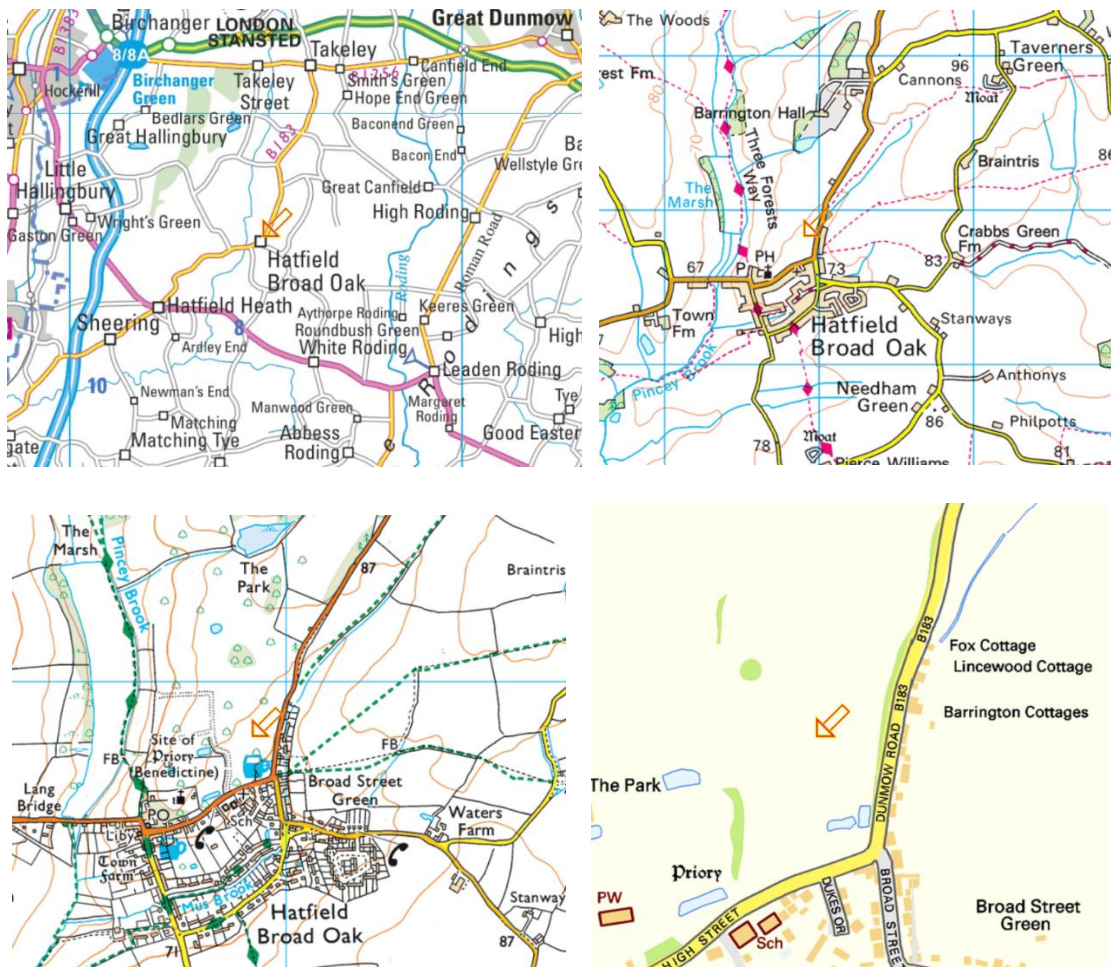


Figure 1-1 Location of Hatfield Broad Oak recreation ground

A Google Earth view of the site, from April 2020, is shown in Figure 1-2.



Figure 1-2 Google Earth view of the sports ground from April 2020

2 CONDITIONS

The approximated arrangement of the sports pitches is shown on the Google Earth view in Figure 2-1.

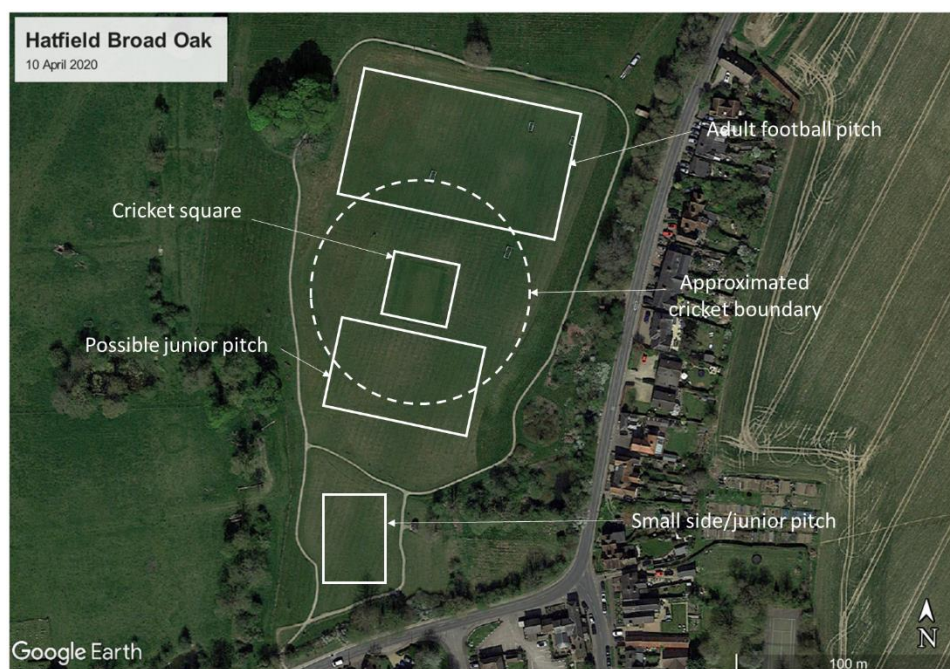


Figure 2-1 Google Earth view with approximated pitch locations

The site supported a full size football pitch that was marked out to the north of a cricket square, and a smaller size pitch, not marked at the time of the visit, to the south.



Figure 2-2 Main area of the sports ground from the north east

Three pairs of moveable football goals were located in the area to the north of the cricket square.

A small-side pitch was marked out in the southernmost area of the site, close to the entrance off Dunmow Road.



Figure 2-3 Small-side pitch to the south of the site



Figure 2-4 General view of the cricket square

Ground cover was generally quite substantial although thinner areas were apparent. The largest and most prominent of these were noted around the north west corner of the small side pitch and around the eastern perimeter of the cricket outfield.

On the playing surfaces themselves the extent of such thinning was more dispersed. The usual focus of wear in goal mouths and centre circles was not apparent on any of the football pitches.



Figure 2-5 General appearance of the sward in the northern football pitch

Ground cover was provided almost exclusively by perennial ryegrass and the pattern of ground cover loss appeared similar to that of what is likely to have been previously annual meadow grass distribution. The meadow grass is likely to have died due to heat and drought leaving the ryegrass remaining.

Cracking of the surface was noted in places but this was not particularly severe or widespread. Recent rainfall, and the general restoration of moisture to the soil in recent weeks may have caused these to close up again to some extent.

The grass was generally in a quite healthy condition and appeared to be growing well. No significant quantities of broad-leaved species were noted and the sward was being maintained at a mowing height of approximately 35 mm.



Figure 2-6 Closer views of the sward showing general pattern of thinning

Some areas of ground cover loss had been disturbed by rabbit activity but this was not especially extensive.



Figure 2-7 Rabbit activity in some small areas of ground cover loss

3 DISCUSSION

The site was examined at the close of an extended period of extremely hot and dry weather. Although this had been relieved in recent weeks by the onset of wetter conditions, the consequences for sports turf across the region had been very severe. Areas not able to be irrigated, and especially where the dominant grass species was annual meadow grass, had been devastated. At Hatfield Broad Oak this had manifestly not been the case. Despite the absence of irrigation facilities on the football pitch/cricket outfield areas, ground cover retention was remarkably high. This testifies to a most appropriate soil condition, most probably in terms mainly of its structure as opposed to its predominantly clay texture, and to a generally high standard of maintenance. The vigour and extent of grass growth across the site was, in fact, quite remarkable under the circumstances.

While the cracking of cricket outfields on clay soils and at the height of summer can indeed be an issue in some places, there was little evidence that this was the case here, certainly at the time of the visit. To be a significant hazard, such cracking would have needed to be particularly severe and extensive and to recover from such a state and arrive at the condition of the surface as it was when I saw it would have meant an extremely rapid and substantial alteration of state. This, I think, is unlikely to have been the case. I would suggest that the concerns over the safety of the outfield at the height of summer may have been exaggerated. The ground would certainly have been hard underfoot. But this would have been the case for most cricket outfields throughout the area of Windsor clay soils that extends across north London and much of Essex. Cracks will have been apparent, but these are unlikely to have been so large as to pose a significant safety hazard.

My general sense is that the grounds have been very well maintained. The ingress of annual meadow grass is an almost inevitable feature of sports pitches not subjected to the very highest intensity of maintenance but the extent to which this has occurred at Hatfield Broad Oak appears to have been fairly low, again testifying to a good standard of maintenance since the site was first established. The gaps that have appeared in the sward as a result of the selective removal of annual meadow grass by the heat and drought may be made good by carrying out a general over-seeding. Without this, it is likely that the meadow grass will simply return. Unfortunately, other undesirables, such as broad leaved species, are also likely to colonise these spaces in the coming months.

The site did not appear to have been over-used for sporting purposes. The localised wear damage that was noted seems more likely to be the outcome of non-specific use or spectating. This may not be the case by late February or March, however, when the impact of football will be much clearer. Issues such as drainage efficiency and the moisture holding capacity of the soil will become much more significant at that time.

Aside from the, as yet unknown, performance of the pitches during and immediately after the winter period, the present level of maintenance input would appear to be well matched to the outputs and expectations that are placed upon the sports ground. Some suggestions are made below as to the resolution of the relatively few issues that were noted during the visit. However, one issue that was discussed was the use of the site for professional or semi-professional purposes in relation to football and whether the site and the overall circumstances were appropriate for this.

The site is referred to as the 'Village Green' rather than as a sports centre playing field. It is the case that very many equivalent 'village greens' are subject to the most minimal of maintenance levels. As a consequence many, possibly most, such surfaces will be in a far worse condition after this year's extraordinary weather. Similarly, they may be reduced to very unsatisfactory surfaces indeed were they to be subjected to intensive winter games wear. It is therefore something of an achievement to have such a splendid 'village green' in Hatfield Broad Oak, the qualities of which many sports clubs would be proud of.

One may say that there is a baseline maintenance programme that would apply to the whole site and which would maintain its 'village green' status. This would consist of the fertiliser and mowing operations that are likely to have been carried out to date along with a single annual verti-drain operation and perhaps, if bio-diversity was not a particular aspiration, an annual 'weed' control measure. Over and above this regime, management operations may be classed as specific to the particular sports that are catered for, namely cricket and football.

The cricket square will have a very particular range of management operations, the description and analysis of which is outside of the scope of this report. Most, though not all, of this will take place during the growing season. The provision of the irrigation system that was noted on site is vital and of course is entirely specific to the maintenance of the square.

The cricket outfield may be subjected to more frequent, closer, mowing during the cricket season and here the use of a cylinder mower as opposed to a rotary may also represent a departure from the background 'village green' maintenance programme. If cracking is confirmed to be a significant problem, there would be merit in enhancing the frequency of aeration (autumn/winter/early spring verti-draining) and possibly applying a sand top dressing on an annual basis.

The degree, form and extent of additional maintenance work required of football pitches is dependent primarily on the intensity and frequency with which the surfaces are actually used. Specific turf maintenance operations this is likely to include are:

- Goal mouth renovation
 - Cultivation and/or aeration
 - Over-seeding
- Top dressing (the most costly element)
- Additional aeration (very much dependent on the intensity of use to which the pitches are put)
- General and/or localised over-seeding (ditto)
- White lining
- Weed control (a variable element depending on the intensity of use and the effectiveness of other maintenance operations)

In the apportionment of costs, it would seem appropriate to allocate these sports-specific components, that are additional to the background 'village green' regime, to the sporting users themselves. In my view, the high quality 'village green' should, however, be maintained and not allowed to diminish to the minimal inputs surface that is so prevalent elsewhere.

4 RECOMMENDATIONS

4.1 Aeration

The phenomenon of cracking is a consequence of the high clay content of the topsoil. The clay shrinks as it dries and expands again when wet and this process will occur under all circumstances. The extent of the cracking may, however, be dispersed through the soil by achieving a more open soil structure, evenly across the site and down through the soil profile. In practice this means carrying out more intensive aeration work. The baseline aeration regime for the site should include one verti-drain treatment each year, ideally carried out as soon as adequate penetration can be achieved, typically by around early November. Subsequent treatments may be undertaken on occasions leading up to around late April. The machine should be set to achieve maximum heave action and the largest tines, 18 to 25 mm diameter, should be used at greatest depth (taking note of the depth and location of any buried irrigation or service lines).

4.2 Top dressing

Cracking can also be reduced by altering the texture of the soil by the addition of sand, effectively diluting the clay. This is a long term project, however, and the consequences in terms of cracking may not become apparent until several treatments have been undertaken.

Top dressing has more immediate benefits, however. It will achieve a smoother surface, a feature which will be of particular value for the cricket outfield. Once a reasonable depth of sand has been applied to the surface, say around 10 mm, this will also reduce the extent of water retention in the immediate surface which will reduce its slipperiness in wet conditions, a benefit to all but to footballers in particular.

Top dressings should consist of a medium coarse, lime-free sand. Applications of between 6 and 10 kg/m² may be made at any time during the growing season provided the sand, surface and general conditions are suitably dry.

4.3 Over-seeding

To fill out the various gaps that have appeared in the sward, over-seeding may be carried out. For the purpose, a disc seeder will be required. Although this will need to operate over a wide area in order to be efficient, a fairly high rate of seed should be employed, between 18 and 25 g/m². The most needful areas may simply be treated twice.

To sustain the village green concept, I would recommend the inclusion of fine fescues in an over-seeding mix. These would be entirely appropriate to supplement the existing grass cover of the cricket outfield.

For the football pitches, however, fescues would lack the necessary wear tolerance. Here, the first thought would be of perennial ryegrass. This has the advantage of being able to germinate rapidly and at relatively cool temperatures, to up to, say, mid November. There are modern tetraploid

ryegrasses that are able to germinate at even cooler temperatures so the potential exists to re-establish a sward from seed sown as late as December.

Considering the longer term impacts of climate change and the likely increase in the frequency of hot and dry summers as we have just experienced, my preference would be for a combination of fescues and smooth stalked meadow grass. This latter species has the wear tolerance of ryegrass but is less needful of fertiliser and is especially tolerant of drought. It is also, in my view, a more attractive grass when mown and maintained properly. It is, however, a good deal more expensive.

A general overseeding mix that might be used for the site would be [Designer Landscape Parks](#).

Signed:



Dr Tim Lodge
Consultant



18 October 2022