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# BROCKWELL PARK - JUNE 2024

# Brockwell Park June 2024.Docx

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20 June 2024 TAL

# BROCKWELL PARK - JUNE 2024

# 1 INTRODUCTION

## 1.1 Objectives

An advisory visit was undertaken to assess the general ground and surface conditions from an agronomic perspective of part of Brockwell Park in the aftermath of a series of outdoor events that had taken place during the preceding weeks.

Agrostis' client is:

London Borough of Lambeth

Represented by:

[redacted]
Events Services Manager

Environment and Streetscene
Residents' Services
Civic Centre
3rd Floor, 6 Brixton Hill,
London
SW2 1EG

Tel: 0207 926 2437
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## 1.2 The assessment

The assessment of the site took place on 17 June 2024. At the time, the perimeter fence was still in place but all of the structures and surfaces incorporated into the Event had been removed and the last of the materials was being collected and taken off site.

The assessment of ground conditions was undertaken by means of a walk-over of the area of the Event, noting and photographing features of the ground cover and other possible influencing factors. Aerial imagery was also obtained using a UAV (drone).

The approximate outline of the event site, around which the fence was incorporated, is shown in Figure 1-1, superimposed on the Google Earth image of the site form 2020.


**Figure 1-1 Approximate outline of the event site**

# 2 POST-EVENT CONDITIONS

Rough photogrammetric images, taken from around 80 metres altitude of 4 sections and covering the site, are shown in Figure 2-1 to Figure 2-4.


**Figure 2-1 Eastern section**


**Figure 2-2 Central section**


**Figure 2-3 Western section**


**Figure 2-4 Southern section**

Oblique images of parts of the site are shown in APPENDIX I – OBLIQUE AERIAL IMAGES OF THE SITE.

The effects of the event on the ground cover may be categorised as that caused by the following:

- Trackway
- Installations (marquees, stands, stages etc)
- Footfall

These types of may be seen in the example image of the eastern section reproduced in Figure 2-5.


**Figure 2-5 Various forms of surface damage**

Closer views of the nature of these effects are shown in Figure 2-6.


**Figure 2-6 Examples of damage types**

In addition, smaller areas of more substantial disruption of surface levels had come about at scattered locations, typically as a result of vehicle movement on what will have been wet ground.

**Figure 2-7 Examples of more substantial surface disturbance**

An examination of the soil profile of a trackway area showed a distinct area of more compacted soil in the immediate surface. This overlay the native topsoil which was a well-structured sandy loam with increasing clay content beyond around 175 mm.

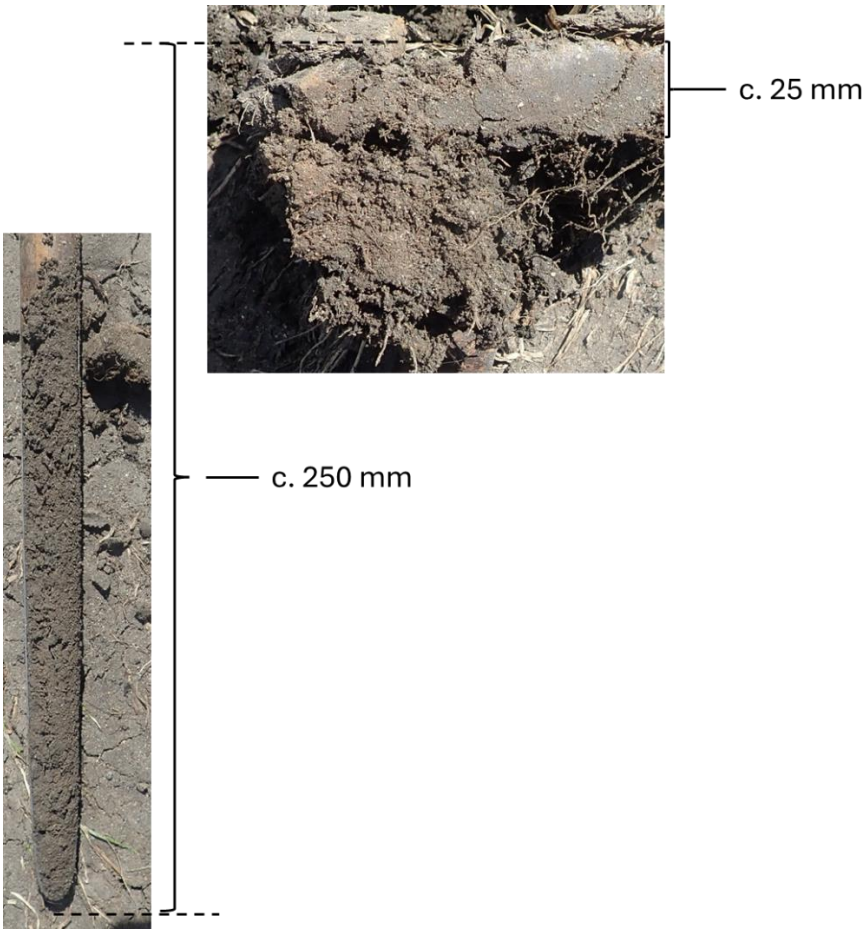


**Figure 2-8 Features of the soil profile**

# 3 DISCUSSION

The consequences of the three causes of damage to the site as described above are very diverse. This is particularly the case in relation to footfall, the intensity of which will have varied greatly from place to place and depending on the degree of ground protection, if any, that was provided.

Similarly, the installations varied in their effects. This variability tends to be related to the amount of time over which the installation was in place and the exact form of the ground/flooring interface, a feature of the flooring design. The ability for air to circulate immediately above the living ground cover, as well as the extent of light penetration, is usually found to be fundamental in this respect.

The trackway, as has been noted both here and at other event locations, is usually in place for an extensive period of time and generally leads to a complete loss of ground cover.

These features are common to all events of this type. On this occasion, however, the circumstances were complicated, and the effects made generally more damaging, by wet weather that occurred during the events as they took place and subsequently. At the time, this had necessitated the incorporation of geotextile covered in bark chippings over the areas of greatest anticipated footfall, in front of stages and in key access pinch-points for example. The consequent softening of the ground by the wet weather also made the disruption of levels by vehicle tracking in the break down or ongoing maintenance work on the site more substantial.

There are, therefore, 3 main factors with which we are concerned, the extent of each of which varies across the site. These are:

- Loss of ground cover
- Damage to soil structure
- Disruption of surface levels

The loss of ground cover has been indicated here by the photographs, the aerial images being particularly informative.

The trackways and other forms of ground protection will have been most effective in reducing the extent of potential soil structural damage. In this respect, the impact of footfall will have been the most substantial, a factor made considerably worse by the wet conditions when this was taking place. The bark/geotextile solution will have provided only a little protection against this, its primary purpose being to ensure that surface conditions did not deteriorate to the extent of being un-useable *during the events themselves*.

The localised effects of machinery movement on wet ground has been the most disruptive in terms of soil structural damage and loss of surface levels. However, these tend to be in quite discrete and relatively small areas so resolving these effects should be relatively straightforward to specify.

# 4 RENOVATION RECOMMENDATIONS

## 4.1 Trackway

In these areas the surface should be disturbed to some extent prior to the incorporation of seed. Such disturbance need not be particularly deep but the procedure will significantly improve the effectiveness of over-seeding work. Use a power harrow for this purpose to thoroughly cultivate the top 50 mm of the soil profile.

A pre-seeding fertiliser should then be distributed over the treated areas at a rate of 35 g/m$^2$. Such fertilisers typically have an N : P : K analysis of 7 : 7 : 7 but variations on this will be suitable.

Seed should then be sown using a dimple seeder (as opposed to a disc seeder). A seed rate of 50 g/m$^2$ should be achieved by making two passes with the machine set to deliver at around 25 g/m$^2$ with each pass. Note that three passes at 18 g/m$^2$ would normally be undertaken in varying directions but the usually linear nature of the trackway areas will make this very difficult to accomplish.

Ideally, areas treated in this way should be protected from footfall during the period of establishment. Some of the more expansive areas may lend themselves to being fenced off, for example with chestnut paling. For the many metres of more linear surface affected in this way this may not be practicable. However, given the profusion of metalled pathways around the Park to which most of the trackways have been laid parallel, pedestrians may not be too inclined to walk over the renovated areas and so damage may ultimately be fairly minimal.

To a large extent the success of this seed incorporation will depend on the timing of the works. Ideally, all grass seed should be sown during the period from mid-August through to the end of September. At that time heat intensity from the sun will have reduced though the soil will be very warm. Also, rainfall can be expected to occur with reasonable confidence and in quantities likely to have an impact on the moisture available to developing grasses. Earlier attempts at over-seeding run a serious risk of failure due to heat/drought stress affecting the developing seedlings. The majority of this renovation work should therefore and if possible be delayed until August.

## 4.2 Structures

Some of the structures had an impact on the grass that is likely to recover with sunlight, rain and fertiliser so the necessity or otherwise to treat these areas will become apparent by the time of sowing. Where a significant quantity of grass leaf persists, chain harrowing will probably accelerate the recovery.

Again, the application of a pre-seeding fertiliser should be undertaken on these areas where over-seeding is to be carried out.

Over-seeding of these areas should be accomplished with a disc seeder incorporating seed directly into the soil surface. Smaller versions (say 1.2 m width) will be more versatile in negotiating the

varying shapes and sizes of the treatment areas. The discs should deposit the seed around 8 mm below the surface.

## 4.3 Footfall

Over these areas, efforts to re-establish ground cover should be accompanied by compaction relief processes, principally verti-draining. Some such work had been undertaken in the southern section at the time of the site examination and this appeared to have been quite successful in terms of achieving a satisfactory depth of tine penetration. This has probably been made possible by the generally wet weather we have experienced throughout the spring. Other areas may not respond quite so well to the treatment, however, and a return visit during the autumn may therefore be necessary to achieve a comprehensive effect. In fact, a second treatment at that time would be generally beneficial, not least because of the more than usually extensive nature of the footfall compaction that has come about.

In areas of the most severe loss of ground cover, the same power-harrowing operation as described for the trackway areas may be necessary. How extensive such areas will be may be determined to a large extent from the photograms but a good deal of subjective assessment of the surfaces' requirements at any particular location will need to be applied as the work is taking place.

Seeding should be accomplished, again following the application of a pre-seeding fertiliser, using a disc seeder. A 'triage' approach to the rate of seeding should be adopted, setting the machine to deliver seed at a rate of 18 g/$m^2$. Areas which have retained the most ground cover will benefit from the incorporation of seed following just one pass with the machine. Thinner areas should receive two passes and very thin areas three passes, achieving rates of 18, 36 and 54 g/$m^2$ respectively. Seeding should take place from August through to the end of September.

## 4.4 Severe surface disruption

Some discussion took place on site concerning the incorporation of fencing around these areas which may represent trip hazards, very much to be avoided. Although the time of year would not normally be considered appropriate, the still moist ground conditions may allow a more substantial cultivation of these areas, down to around 150 mm say. This would allow the surface to be restored and a tilth created into which seed may be incorporated, probably distributing by hand over such small areas.

If a hot and dry period follows such treatments through July, it may become necessary to repeat the sowing but August approaches and there is no sign of a heatwave yet so an attempt at some early seeding work may prove effective with the aim of generally accelerating the recovery process for the whole site.

## 4.5 Seed selection

A number of factors indicate that a different approach to amenity grass maintenance may be appropriate, and the present circumstances are such that this approach could very effectively commence now. Those factors include the costs and general demands of maintenance and the impact of climate change. Generally speaking, prolonged hot and dry periods imply that a different range of grass species would be better adapted to these conditions.

Therefore, for all of the sowing proposals described above a suitable seed mixture of species composition (by weight) close to that indicated in Table 4-1 would be suitable for the site as a whole.

| Smooth-stalked meadow grass | Slender creeping red fescue | Strong creeping red fescue |
|---|---|---|
| 40 | 30 | 30 |

**Table 4-1 Seed species and percentage (by weight) of each within the mix.**

All cultivars should be suitable for use in sports turf. The mix contains a substantial inclusion of smooth-stalked meadow-grass which is replacing the perennial ryegrass of earlier mixes. SSMG is more tolerant of drought and has a lesser fertiliser requirement which makes it more suitable for low maintenance situations. SSMG is, however, significantly more costly than ryegrass but the longer-term advantages of its substantial establishment will become apparent during the years ahead.

Note that SSMG requires warm soil temperatures for its successful establishment. If the sowing is delayed for any reason beyond the end of September, it may be more appropriate to revert to a ryegrass-rich mixture.

Such a seed mix will be expensive, due to the cost of SSMG in particular. It would also need to be customised by a seed merchant as no proprietary mixes contain this proportion of species. An alternative mix would therefore contain lesser SSMG and some perennial ryegrass. This will establish more rapidly, a factor which may be more appropriate in this case anyway. Such an alternative is 'Parks' from DLF. For more examples, contact Agrostis.

## 4.6 Verti-draining

Verti-draining should be undertaken, over the footfall areas only, when soil conditions allow the full penetration of tines, to around 300 mm, but when ground conditions are sufficiently firm to allow the passage of the tractor without inducing excessive surface damage. These conditions are likely to develop by late October or November and the extent to which they persist through the winter will depend almost entirely on the level of rainfall that is received. Satisfactory conditions are also likely to develop by late March but the autumn treatment is very much to be preferred.

When verti-draining, use the largest available machine fitted with 25 mm solid tines at the closest centres the machine will allow and set to achieve maximum heave action. Any excessive disruption to the surface should be made good by hand by which means any very large stones or other debris that may be brought to the surface by the action of the verti-drain should be removed.

## 4.7 Preparing for future events

It may be appropriate to identify in advance where, during future events, the highest degree of footfall is to be expected. Obvious examples would include the areas in front of stages and anticipated pedestrian traffic routes between event features. Such areas should respond well to pre-preparation work although it is questionable to what extent treatment of the trackway and structure areas themselves would benefit from this. As costs will undoubtedly need to be minimised, verti-draining, if it is to be carried out, would most effectively be confined to these areas of anticipated high footfall. Top dressing with sand and a general stimulation of more vigorous growth during the period leading up to the event will also be beneficial. Generally allowing the sward height to be maintained at a greater level, say 35 mm, would also be advantageous. During the weeks leading up to future summer events, the extent of ground cover retention would be improved by not mowing at all, allowing the sward to reach up to 100 mm in height.

## 4.8 Contracting

This report was not drawn up with the aim of mapping the areas and quantifying their extents of the various areas that should be subject to the different renovation procedures described here. The awarding of contracts to undertake these procedures may, however, require such quantification to take place in which case the data now available with Agrostis would make this possible. It depends upon the intentions of those responsible for the restoration of the grounds.

**Signed:**

**Consultant**

Agrostis
SPORTS SURFACE CONSULTING

**20 June 2024**

# 5 APPENDIX I – OBLIQUE AERIAL IMAGES OF THE SITE




Brockwell Park
2020
Google Earth


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