



# HydroGround Civils

## Surface Water Drainage Strategy

Location: Philpots Manor School, West Hoathly,  
**West** Sussex RH19 4PR

Client: Town & Country Planning Solutions

Project: Proposed car park development

Revision: A

Reference: RH100301

Date: 28 October 2025

Author: CM  
Chartered Civil Engineer  
MEng CEng MICE

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## 1.0 INTRODUCTION

- 1.01 HydroGround Civils (HGC) have been appointed by Town & Country Planning Solutions to provide a surface water drainage strategy report for the proposed car park development at Philpots Manor School, West Hoathly, West Sussex RH19 4PR.
- 1.02 The application site is made up of an approximately 900m of existing access road from North Lane to the northeast. The proposed development area is approximately centred at National Grid Reference: TQ 35396 32103 (535396 E, 132103 N).

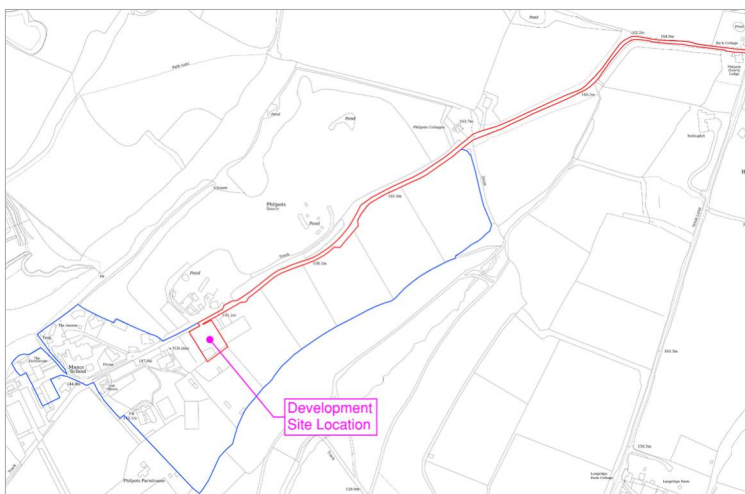


Figure 1: Site Location Plan

- 1.03 The existing development site (Figure 2) is adjacent to an existing hardcore car park, and it is made up of grass area. There is what appears to be a horse-riding arena to the east. The proposed scheme seeks to provide more car parking spaces (Figure 3).



Figure 2: Existing development site



Figure 3: Proposed car park development

- 1.04 Site location and proposed site layout plans can be found in **Appendix A**.

## 2.0 Existing Drainage

- 2.01 The proposed development area is an undeveloped greenfield site currently laid to grass. Surface water runoff naturally infiltrates into the permeable ground, with no formal drainage infrastructure present.
- 2.02 The site gently slopes to the south-east, allowing rainfall to drain by overland flow across the grassed surface before dispersing naturally into the surrounding soil and vegetation. There is no evidence of standing water or existing connection to a surface or foul drainage network, indicating that the area drains effectively through infiltration under natural conditions.
- 2.03 Soilscares describes the soil here as slightly acid loamy and clayey soils with slightly impeded drainage. Most grassland in this part of West Sussex are described similarly, this does not however mean there is no natural drainage, it simply means it might take longer for surface water to completely dissipate, the rate of this dissipation will depend largely on a site-specific soakage test. In addition, Risk of Flooding from Surface Water (Figure 4) shows no surface water flood risk, supporting the conclusion that natural infiltration does occur.

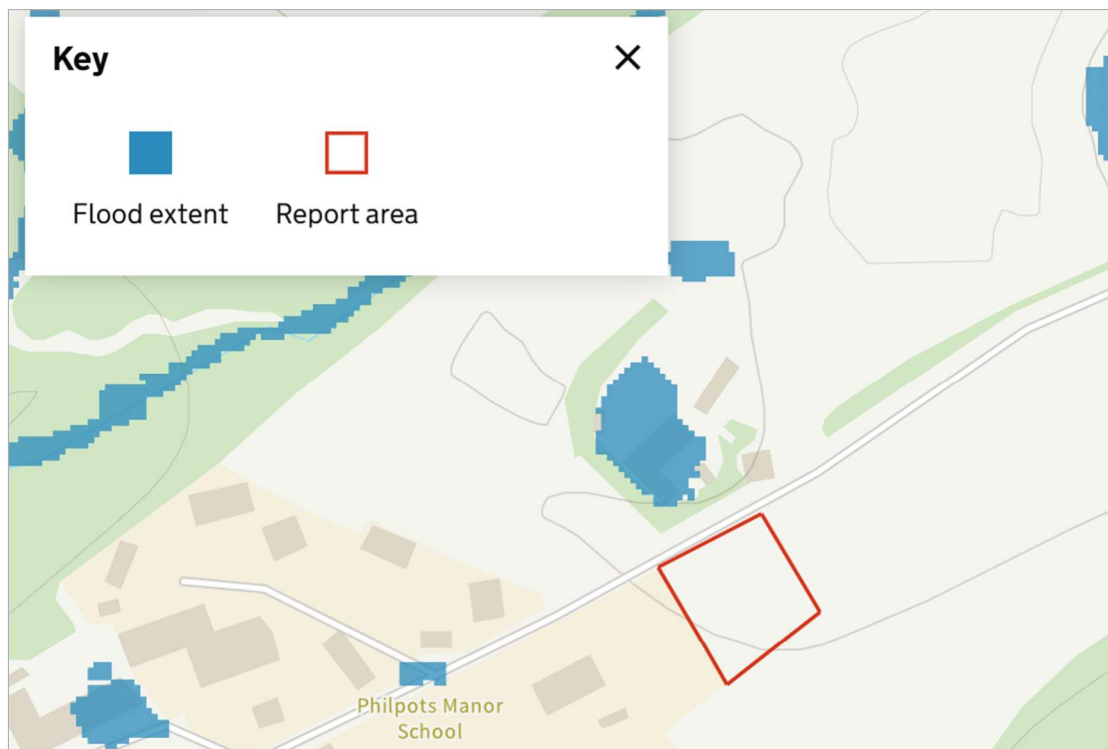


Figure 4: Surface water flood risk (1 in 1000)

### 3.0 Geology

- 3.01 British Geological Survey (BGS) mapping (Figure 5) shows that the site is mostly underlain by Lower Grinstead Clay – Mudstone, with no superficial deposits. This bedrock geology joins the Ardingly Sandstone Member (Sandstone) to the south.

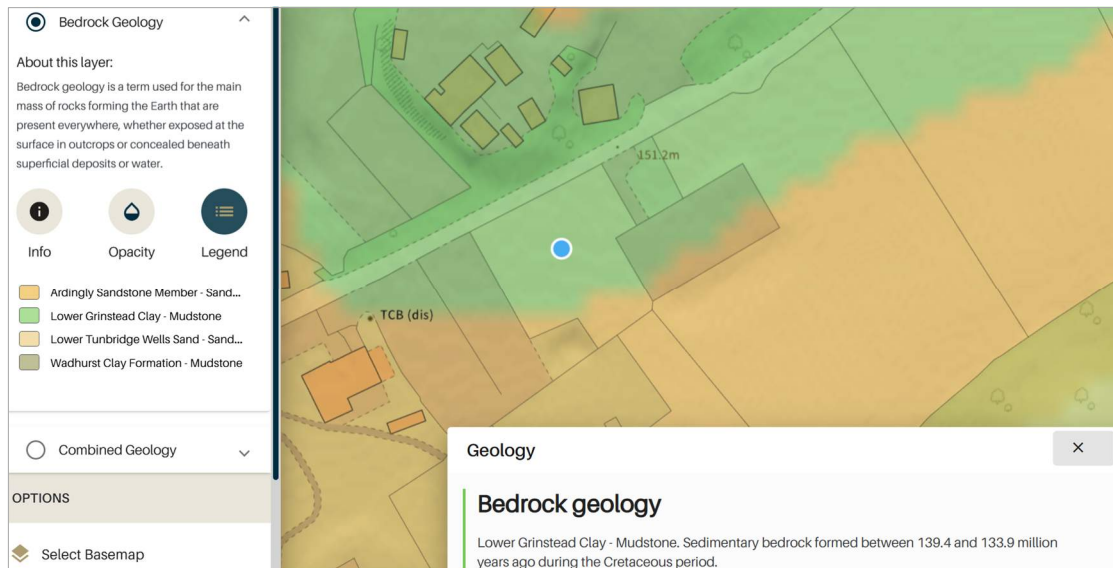


Figure 5: Bedrock geology - Lower Grinstead Clay - Mudstone

- 3.02 BGS describes the lithology of this bedrock unit as comprising of “*soft grey to greenish grey mudstones and silty mudstones with subordinate thin beds of siltstone, clay ironstone, sandstone and limestone. In some areas, where the Cuckfield Stone Bed is absent, the upper and lower Grinstead Clay cannot be separated*”.
- 3.03 From an engineering perspective, the Lower Grinstead Clay is generally of low permeability, which can restrict infiltration and lead to slower drainage response times compared with the adjacent Ardingly Sandstone, which is typically more permeable. Local variations and weathering near the surface may, however, improve infiltration potential across parts of the site, particularly where soils are loamy or mixed with sandy horizons.
- 3.04 There are no known superficial deposits or indications of made ground within the proposed development area. The combination of natural clayey subsoil and overlying loamy topsoil suggests that while infiltration-based drainage is feasible for shallow rainfall events, the rate of infiltration may vary seasonally depending on soil moisture and groundwater levels. It is therefore recommended that site-specific infiltration testing (BRE365) be carried out at design stage to confirm infiltration capacity and to inform the detailed drainage design.

## 4.0 Proposed Drainage

- 4.01 The proposed development comprises the creation of a new car park finished in grasscrete or similar permeable paving system. This surface has been selected to maintain a natural appearance consistent with the surrounding landscape while enabling infiltration of surface water at source, thereby replicating the site's existing greenfield drainage behaviour.
- 4.02 Rainfall falling onto the grasscrete surface will infiltrate directly through the permeable structure and underlying granular sub-base into the natural ground beneath. The system will therefore operate as a self-draining surface, without the need for a positive piped outfall. Any excess runoff generated during extreme rainfall will disperse naturally across adjacent grassed areas, consistent with the existing overland flow regime.
- 4.03 Hydraulic modelling undertaken using Causeway Flow has assumed an infiltration rate of  $1.0 \times 10^{-5}$  m/s (0.036 m/hr), representing a conservative value for the local soil conditions. Based on this infiltration rate, a 500 mm deep permeable sub-base is required to accommodate the critical 1 in 100 year storm event with 45% climate change allowance to ensure adequate temporary storage prior to infiltration. The sub-base will consist of clean, open-graded aggregate (Type 3 or similar) underlain by a permeable geotextile to prevent migration of fines.
- 4.04 Any exceedance flow during exceptional rainfall events will remain contained within the car park footprint and surrounding grassed margins. Given the open nature of the site and the gently sloping topography towards the south-east, any shallow overland flow will dissipate safely without posing flood risk to adjacent buildings or land.
- 4.05 As the car park is classified as a less vulnerable development under the Planning Practice Guidance, temporary surface water ponding during intense rainfall events is considered acceptable and does not represent an unacceptable flood risk.
- 4.06 The proposed drainage strategy therefore accords with the Sustainable Drainage Systems (SuDS) hierarchy, promoting infiltration as the primary means of managing surface water runoff. The design ensures there will be no increase in runoff rate or volume, and no adverse impact on local flood risk.
- 4.07 Proposed drainage layout including Causeway Flow calculations can be found in **Appendix B**.

## 5.0 Infiltration

- 5.01 The proposed drainage design relies on infiltration through the grasscrete surface and granular sub-base into the underlying ground, consistent with the existing natural drainage regime. Infiltration testing has not yet been undertaken; however, a conservative infiltration rate of  $1.0 \times 10^{-5}$  m/s (0.036 m/hr) has been assumed within the hydraulic model. It is recommended that site-specific soakage tests are carried out in accordance with BRE 365 to confirm infiltration performance, groundwater levels, and the suitability of the underlying soils.
- 5.02 Review of the Environment Agency's Source Protection Zone (SPZ) mapping (Figure 6) indicates that the southern portion of the car park lies within a Zone I – Inner Protection Zone, while the northern portion lies outside of it over an area classified as unproductive strata. The Inner Protection Zone represents areas contributing groundwater to public water supply sources within 50 days of travel time, and therefore requires careful consideration of infiltration proposals to prevent groundwater contamination.

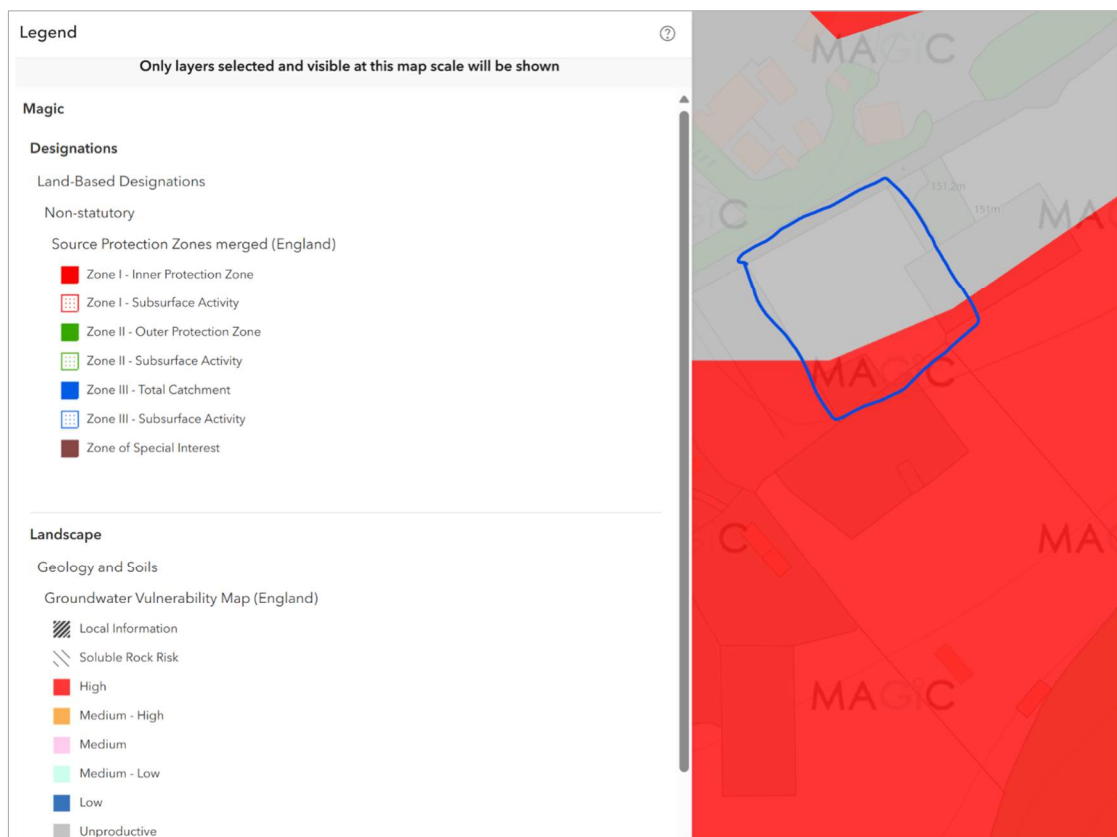


Figure 6: Groundwater Source Protection Zone (Defra MAGIC Map)

- 5.03 Although infiltration SuDS are generally discouraged within SPZ1 areas, exceptions may be considered where the pollution hazard is low and effective mitigation measures are

implemented. The proposed use as a car park with grasscrete surfacing presents a low to moderate pollution risk, as runoff will first pass through a vegetated, permeable surface and clean granular sub-base that together provide a significant level of pollutant attenuation through filtration, sedimentation, and adsorption.

5.04 To further mitigate any potential risk to groundwater quality within the SPZ1 area, the following measures are recommended:

- The use of hydrocarbon-adsorbing geotextile or treatment media beneath the permeable sub-base, such as a hydrocarbon-capture layer (e.g. Permavoid Permatex or similar).
- Implementation of a robust maintenance regime to ensure the grasscrete surface remains permeable and free from sediment or oil accumulation.
- Avoidance of direct infiltration features such as deep bore soakaways; infiltration should occur via shallow, distributed layers only.
- Monitoring of infiltration performance over time as part of ongoing maintenance checks.

5.05 Given that the northern part of the site overlies unproductive strata, it is unlikely to contribute to potable groundwater supplies. Therefore, infiltration within this portion of the site poses negligible risk to controlled waters. The drainage design ensures that infiltration primarily occurs within the less sensitive area, with minimal percolation into the SPZ1 zone.

5.06 Overall, the proposed infiltration strategy has been developed with full consideration of the site's groundwater sensitivity. Through shallow infiltration, filtration through vegetated and granular media, and use of pollution-prevention layers, the system provides a low-risk solution consistent with the Environment Agency's Groundwater Protection Position Statements (2023) and CIRIA SuDS Manual (C753) guidance.

## 6.0 Maintenance Plan



- 6.01 The Grasscrete car park will be maintained in accordance with the principles set out in Grasscrete Design Guide (Chapter 9) and CIRIA SuDS Manual (C753) to ensure long-term structural integrity, infiltration performance, and grass health. The system is partly natural and therefore requires light but regular maintenance rather than intensive intervention.
- 6.02 Objectives:
- Maintain infiltration performance by preventing compaction or sediment build-up.
  - Preserve vegetation cover and soil health within the Grasscrete pockets.
  - Maintain visibility and functionality of concrete margins.
  - Prevent pollution from hydrocarbons or nutrients.
  - Ensure the system continues to function as a SuDS feature with no increase in runoff or flood risk.
- 6.03 Maintenance shall be undertaken by the site owner or a qualified maintenance contractor familiar with permeable paving and SuDS systems. Replacement materials (soil, seed, concrete) should match the original specification. Heavy plant, de-icing salts, or impermeable surface repairs are not permitted as they could reduce permeability.
- 6.04 Maintenance plan can be found in Table 1. This should be read in conjunction with "Design Guide - Grasscrete The Environmental Paving Solution".

Table 1: Grasscrete Maintenance Plan (See Grasscrete Maintenance Plan)

| Frequency                   | Activity / Inspection Task                                                                | Purpose / Action                                                | Responsible Party                        |
|-----------------------------|-------------------------------------------------------------------------------------------|-----------------------------------------------------------------|------------------------------------------|
| Monthly–Quarterly           | Visual inspection of surface for litter, debris, ponding, oil spills, rutting, or damage. | Identify early signs of clogging, compaction, or contamination. | Site owner / Facilities contractor       |
|                             | Remove litter, leaves, and debris using light mechanical sweepers or hand tools.          | Prevent surface blockage and maintain infiltration.             | Site owner / Facilities contractor       |
|                             | Trim grass in non-trafficked areas; trafficked areas are self-trimming.                   | Maintain even grass coverage and visual appearance.             | Grounds maintenance team                 |
|                             | Strim or edge-trim along perimeter concrete margins.                                      | Keep concrete delineation visible for driver guidance.          | Grounds maintenance team                 |
|                             | Inspect interface with surrounding landscape.                                             | Ensure smooth transition, no erosion or settlement.             | Site owner / Facilities contractor       |
| Bi-Annual (Spring & Autumn) | Re-seed or topsoil bare or compacted pockets.                                             | Restore vegetation and maintain permeability.                   | Grounds maintenance team                 |
|                             | Loosen compacted soil and top up to ≤12 mm below surface.                                 | Maintain infiltration and protect pocket edges.                 | Grounds maintenance team                 |
|                             | Apply liquid fertiliser (nitrogen-rich in spring, phosphate-based in autumn).             | Support seasonal grass growth (avoid granules).                 | Grounds maintenance team                 |
|                             | Remove and replace soil in oil-contaminated pockets.                                      | Prevent localised pollution and maintain plant health.          | Site owner / Facilities contractor       |
|                             | Check infiltration rates (e.g. double-ring infiltrometer test).                           | Confirm ongoing permeability of surface and sub-base.           | SuDS maintenance contractor              |
| Every 5 Years / As Required | Repair isolated concrete damage using Grasscrete method.                                  | Maintain structural integrity of paving surface.                | Specialist contractor                    |
|                             | Re-turf or re-seed areas with >25% grass loss.                                            | Restore full grass cover and filtration function.               | Grounds maintenance team                 |
|                             | Inspect and, if fitted, replace hydrocarbon-adsorbing layer or geotextile.                | Maintain groundwater protection measures.                       | Specialist contractor                    |
|                             | Re-level settled areas with clean, permeable material.                                    | Preserve surface evenness and function.                         | Site owner / Contractor                  |
| Ongoing / Annually          | Maintain grass height (typically 25–50 mm trafficked; 150 mm untrafficked).               | Prevent erosion and support root health.                        | Grounds maintenance team                 |
|                             | Keep maintenance log (inspections, actions, and results).                                 | Provide audit trail for LLFA / planning compliance.             | Site owner                               |
|                             | Review maintenance records annually.                                                      | Identify recurring issues and update maintenance schedule.      | Site owner / SuDS maintenance contractor |



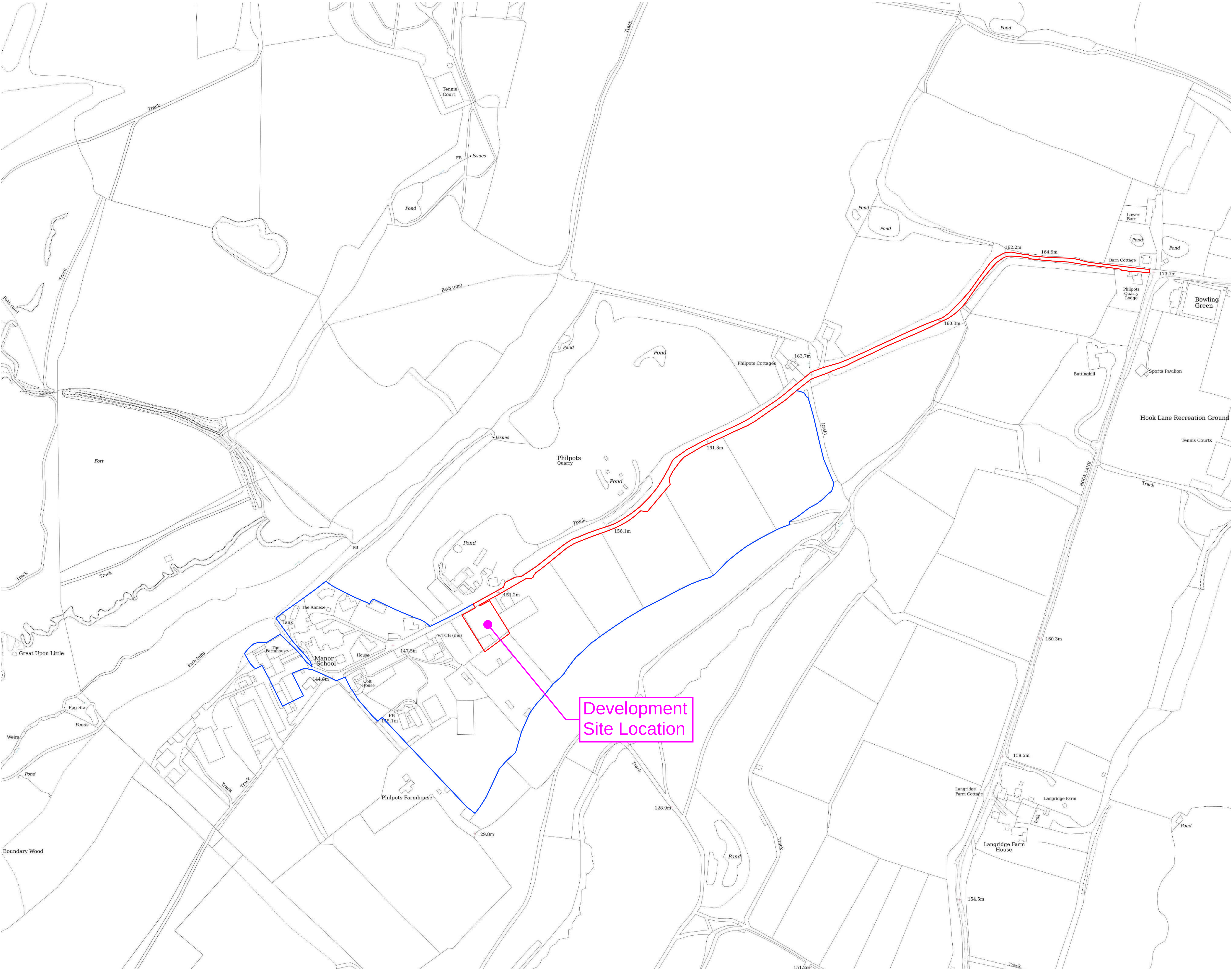
## Appendix A

### Site Location and Proposed Site Layout Plans





Metres  
0 20 40 60 80 100 200  
SCALE 1:2000



Development  
Site Location

revisions

| ref | date | drawn |
|-----|------|-------|
|     |      |       |
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|     |      |       |

DESIGN INTENT ONLY  
NOTES FOR CONSTRUCTION:  
1. Dimensions shall be checked and verified prior to work being commenced on site.  
2. This drawing is issued for the sole and exclusive use of the named recipient. Distribution to any third party is on the strict understanding that no liability is accepted by KM Architecture for any discrepancies, errors or omissions that may be present and no guarantee is offered as to the accuracy of the information shown.

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job PROPOSED CAR PARK AT:

PHILPOTS MANOR SCHOOL  
WEST HOATHLY  
EAST SUSSEX  
RH19 4PR

title  
LOCATION PLAN

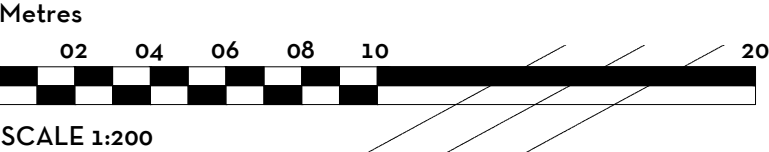
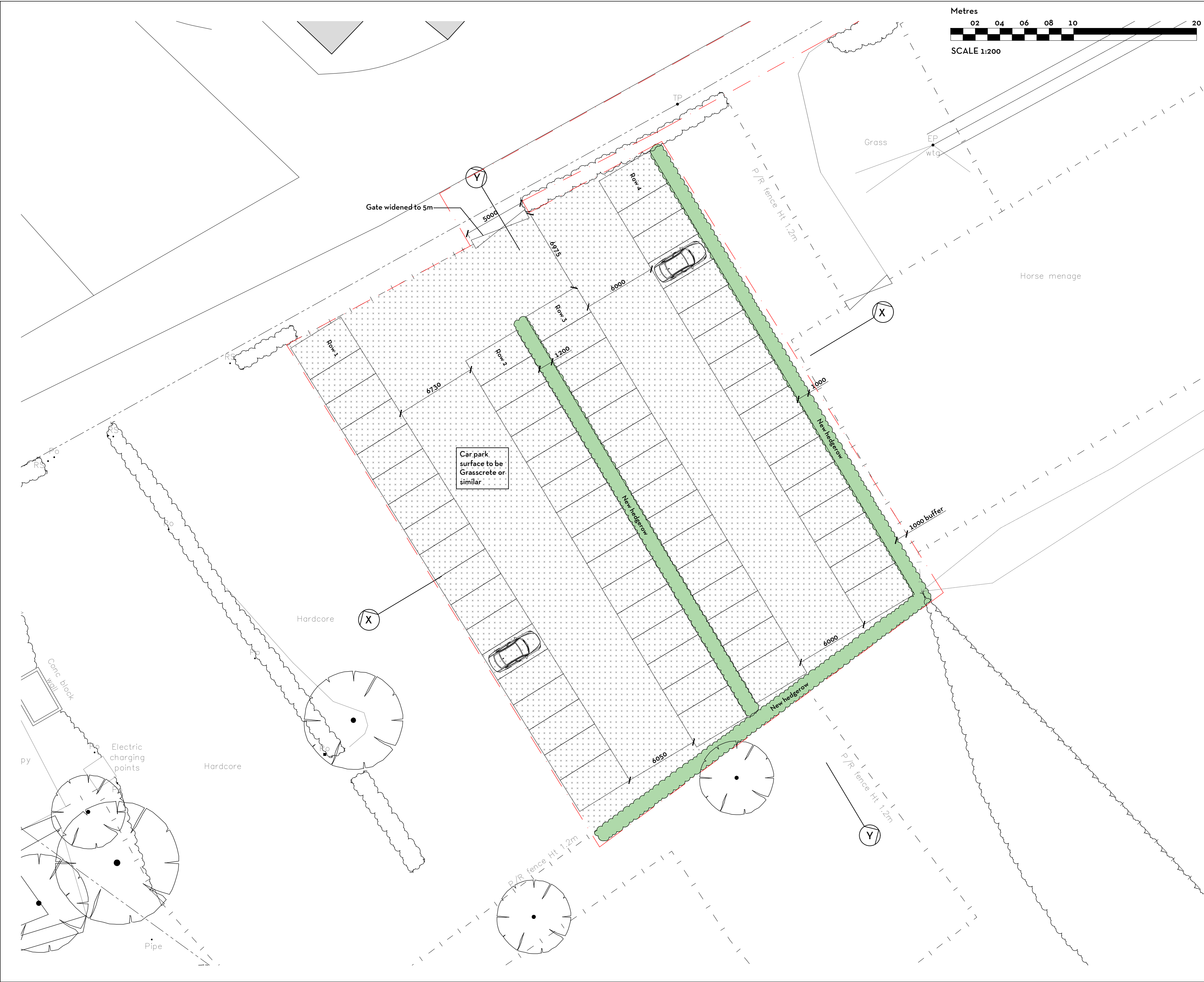
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date 23/10/25

drawn KMM

drawing number 2098\_00\_10

revision -



revisions

| ref | date     |                  | drawn |
|-----|----------|------------------|-------|
| A   | 24/10/25 | Red line amended | KMM   |
|     |          |                  |       |
|     |          |                  |       |
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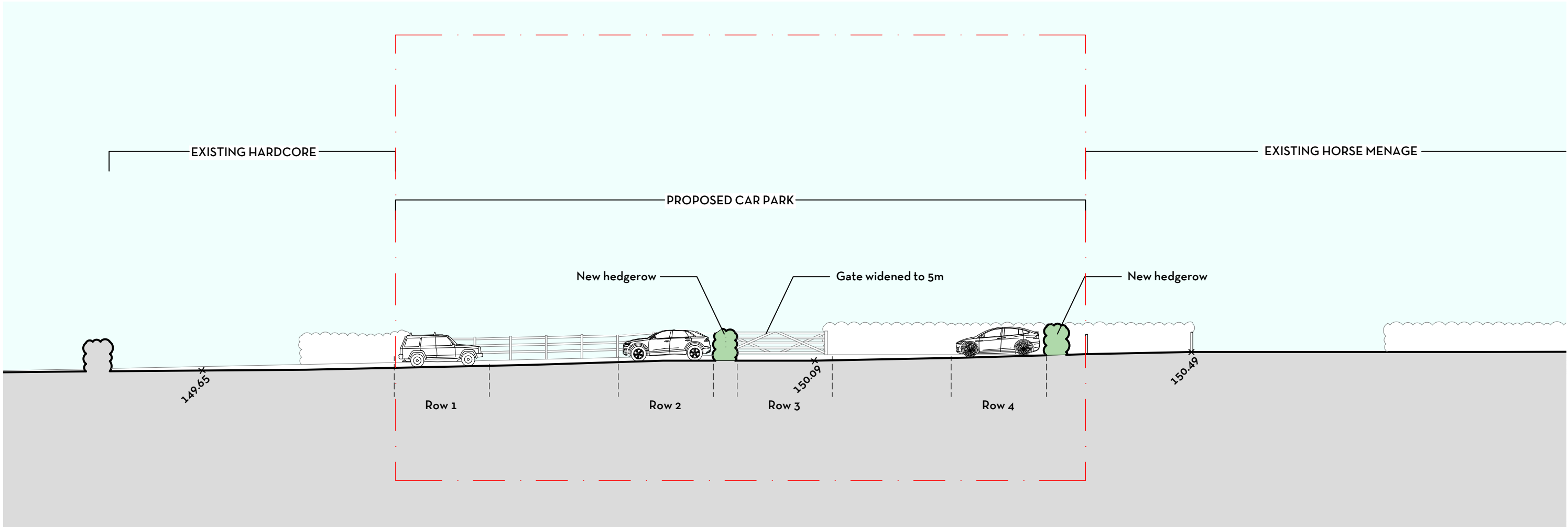
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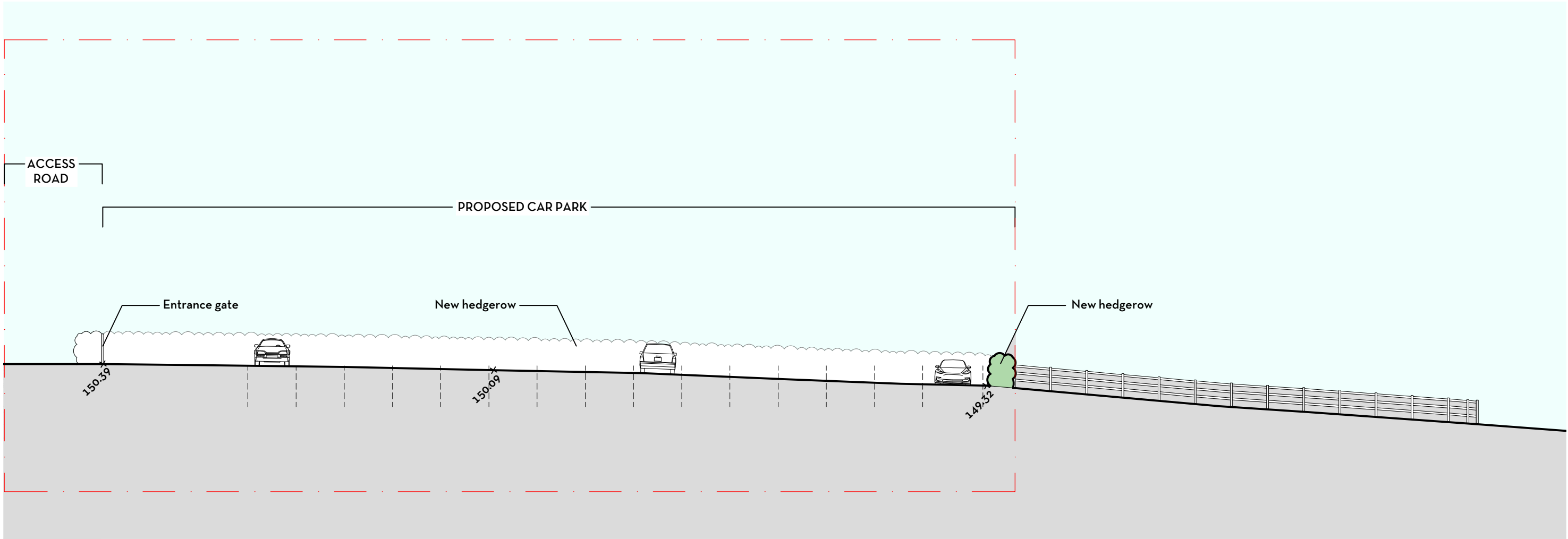
KM ARCHITECTURE  
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EAST SUSSEX  
RH19 4PR

| title                 |            |               |
|-----------------------|------------|---------------|
| SITE PLAN AS PROPOSED |            |               |
| scale                 | 1:200 @ A2 |               |
| date                  | 23/10/25   |               |
| drawn                 | KMM        |               |
| drawing number        | 2098_00_12 | revision<br>A |



SECTION XX



SECTION YY

revisions

| ref | date     |                 | drawn |
|-----|----------|-----------------|-------|
| A   | 24/10/25 | Minor revisions | KMM   |
|     |          |                 |       |
|     |          |                 |       |
|     |          |                 |       |
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title  
  
SECTIONS AS PROPOSED

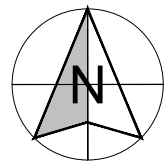
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| date           | 23/10/25   |               |
| drawn          | KMM        |               |
| drawing number | 2098_00_12 | revision<br>A |



## Appendix B

### Proposed Drainage Layout and Causeway Flow Calculations





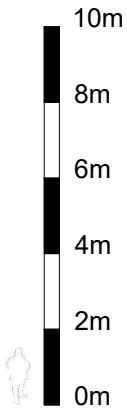
Proposed Car Park  
Grasscrete surface finish (Infiltration)

Assumed infiltration rate =  $1.0 \times 10^{-5}$  m/s (0.036 m/hr)  
To be confirmed with BRE365 soakage test.

Catchment area = 1460 m<sup>2</sup>  
Type 3 sub-base thickness = 500mm (30% porosity)  
1 in 100 year + 45%CC  
Refer to Causeway Flow Model Output

Car park to incorporate a Permavoid Permatex or similar hydrocarbon-adsorbing geotextile or treatment media.

For more information on this pavement, see "Parking Details Grasscrete"



SCALE 1:200

- GENERAL NOTES
1. This drawing is to be read in conjunction with all relevant architects, engineers drawings & specifications.
  2. The contractor is to be responsible for all dimensions & for the correct setting out of the works on site.
  3. Do not scale from this drawing.

|     |    |             |                                                 |
|-----|----|-------------|-------------------------------------------------|
| P01 | CM | 28 Oct 2025 | Preliminary below ground surface water drainage |
| REV | BY | DATE        | Revision Notes                                  |

PROJECT NAME  
Philpots Manor School  
West Hoathly  
West Sussex  
RH19 4PR

PROJECT DESCRIPTION  
Drainage Strategy  
Surface Water

|          |              |    |          |             |
|----------|--------------|----|----------|-------------|
| Revision | Prepared     | CM | Approved | CM          |
| Original | Approved     | CM | Date     | 28 Oct 2025 |
| STATUS   | For Planning |    |          |             |

|            |               |
|------------|---------------|
| Scale:     | Dwg No:       |
| 1:200 (A1) | RH100301/5010 |

REVISION  
P01





### Design Settings

|                       |                   |                                      |               |
|-----------------------|-------------------|--------------------------------------|---------------|
| Rainfall Methodology  | FSR               | Maximum Time of Concentration (mins) | 30.00         |
| Return Period (years) | 1                 | Maximum Rainfall (mm/hr)             | 50.0          |
| Additional Flow (%)   | 0                 | Minimum Velocity (m/s)               | 1.00          |
| FSR Region            | England and Wales | Connection Type                      | Level Soffits |
| M5-60 (mm)            | 20.000            | Minimum Backdrop Height (m)          | 0.200         |
| Ratio-R               | 0.400             | Preferred Cover Depth (m)            | 1.200         |
| CV                    | 0.750             | Include Intermediate Ground          | ✓             |
| Time of Entry (mins)  | 5.00              | Enforce best practice design rules   | ✓             |

### Nodes

| Name    | Area<br>(ha) | Cover<br>Level<br>(m) | Easting<br>(m) | Northing<br>(m) | Depth<br>(m) |
|---------|--------------|-----------------------|----------------|-----------------|--------------|
| Carpark | 0.146        | 150.000               | 535396.000     | 132103.000      | 0.660        |

### Simulation Settings

|                      |                   |                            |          |
|----------------------|-------------------|----------------------------|----------|
| Rainfall Methodology | FSR               | Analysis Speed             | Detailed |
| Rainfall Events      | Singular          | Skip Steady State          | x        |
| FSR Region           | England and Wales | Drain Down Time (mins)     | 240      |
| M5-60 (mm)           | 20.000            | Additional Storage (m³/ha) | 20.0     |
| Ratio-R              | 0.400             | Starting Level (m)         |          |
| Summer CV            | 0.750             | Check Discharge Rate(s)    | x        |
| Winter CV            | 0.840             | Check Discharge Volume     | x        |

### Storm Durations

15 | 30 | 60 | 120 | 180 | 240 | 360 | 480 | 600 | 720 | 960 | 1440

| Return Period<br>(years) | Climate Change<br>(CC %) | Additional Area<br>(A %) | Additional Flow<br>(Q %) |
|--------------------------|--------------------------|--------------------------|--------------------------|
| 1                        | 0                        | 0                        | 0                        |
| 30                       | 0                        | 0                        | 0                        |
| 30                       | 40                       | 0                        | 0                        |
| 100                      | 0                        | 0                        | 0                        |
| 100                      | 45                       | 0                        | 0                        |

### Node Carpark Carpark Storage Structure

|                             |         |                           |         |               |       |
|-----------------------------|---------|---------------------------|---------|---------------|-------|
| Base Inf Coefficient (m/hr) | 0.03600 | Invert Level (m)          | 149.340 | Slope (1:X)   | 200.0 |
| Side Inf Coefficient (m/hr) | 0.03600 | Time to half empty (mins) | 172     | Depth (m)     | 0.500 |
| Safety Factor               | 2.0     | Width (m)                 | 32.000  | Inf Depth (m) |       |
| Porosity                    | 0.30    | Length (m)                | 45.000  |               |       |



**Results for 1 year Critical Storm Duration. Lowest mass balance: 100.00%**

| Node Event                     | US<br>Node | Peak<br>(mins) | Level<br>(m) | Depth<br>(m)     | Inflow<br>(l/s) | Node<br>Vol (m³) | Flood<br>(m³) | Status |
|--------------------------------|------------|----------------|--------------|------------------|-----------------|------------------|---------------|--------|
| 60 minute winter               | Carpark    | 47             | 149.437      | 0.097            | 10.7            | 9.4183           | 0.0000        | OK     |
| Link Event<br>(Upstream Depth) |            | US<br>Node     | Link         | Outflow<br>(l/s) |                 |                  |               |        |
| 60 minute winter               |            | Carpark        | Infiltration | 3.1              |                 |                  |               |        |



**Results for 30 year Critical Storm Duration. Lowest mass balance: 100.00%**

| Node Event                     | US<br>Node | Peak<br>(mins) | Level<br>(m) | Depth<br>(m)     | Inflow<br>(l/s) | Node<br>Vol (m³) | Flood<br>(m³) | Status |
|--------------------------------|------------|----------------|--------------|------------------|-----------------|------------------|---------------|--------|
| 60 minute winter               | Carpark    | 50             | 149.503      | 0.163            | 25.8            | 26.1991          | 0.0000        | OK     |
| Link Event<br>(Upstream Depth) |            | US<br>Node     | Link         | Outflow<br>(l/s) |                 |                  |               |        |
| 60 minute winter               |            | Carpark        | Infiltration | 5.3              |                 |                  |               |        |



**Results for 30 year +40% CC Critical Storm Duration. Lowest mass balance: 100.00%**

| Node Event                     | US<br>Node | Peak<br>(mins) | Level<br>(m) | Depth<br>(m)     | Inflow<br>(l/s) | Node<br>Vol (m³) | Flood<br>(m³) | Status |
|--------------------------------|------------|----------------|--------------|------------------|-----------------|------------------|---------------|--------|
| 60 minute winter               | Carpark    | 56             | 149.538      | 0.198            | 36.1            | 38.4654          | 0.0000        | OK     |
| Link Event<br>(Upstream Depth) |            | US<br>Node     | Link         | Outflow<br>(l/s) |                 |                  |               |        |
| 60 minute winter               |            | Carpark        | Infiltration | 6.4              |                 |                  |               |        |



**Results for 100 year Critical Storm Duration. Lowest mass balance: 100.00%**

| Node Event                     | US<br>Node | Peak<br>(mins) | Level<br>(m) | Depth<br>(m)     | Inflow<br>(l/s) | Node<br>Vol (m³) | Flood<br>(m³) | Status |
|--------------------------------|------------|----------------|--------------|------------------|-----------------|------------------|---------------|--------|
| 60 minute winter               | Carpark    | 54             | 149.531      | 0.191            | 33.9            | 35.7844          | 0.0000        | OK     |
| Link Event<br>(Upstream Depth) |            | US<br>Node     | Link         | Outflow<br>(l/s) |                 |                  |               |        |
| 60 minute winter               |            | Carpark        | Infiltration | 6.2              |                 |                  |               |        |



**Results for 100 year +45% CC Critical Storm Duration. Lowest mass balance: 100.00%**

| Node Event                     | US<br>Node | Peak<br>(mins) | Level<br>(m) | Depth<br>(m)     | Inflow<br>(l/s) | Node<br>Vol (m³) | Flood<br>(m³) | Status |
|--------------------------------|------------|----------------|--------------|------------------|-----------------|------------------|---------------|--------|
| 120 minute winter              | Carpark    | 94             | 149.578      | 0.238            | 30.1            | 55.4065          | 0.0000        | OK     |
| Link Event<br>(Upstream Depth) |            | US<br>Node     | Link         | Outflow<br>(l/s) |                 |                  |               |        |
| 120 minute winter              |            | Carpark        | Infiltration | 7.3              |                 |                  |               |        |

# Parking Details

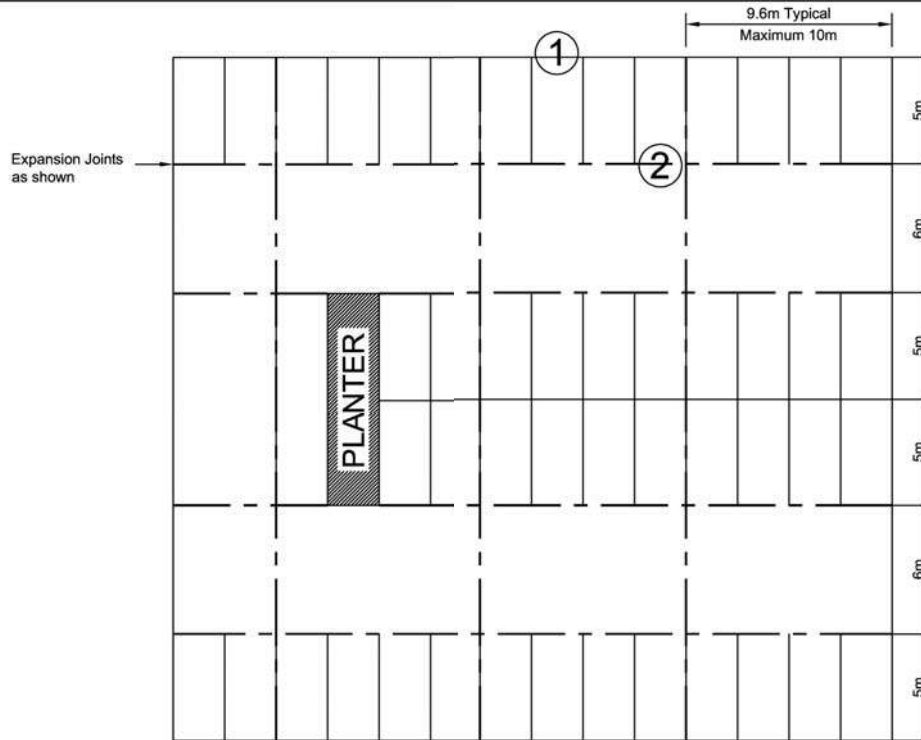
# Grasscrete

CAD



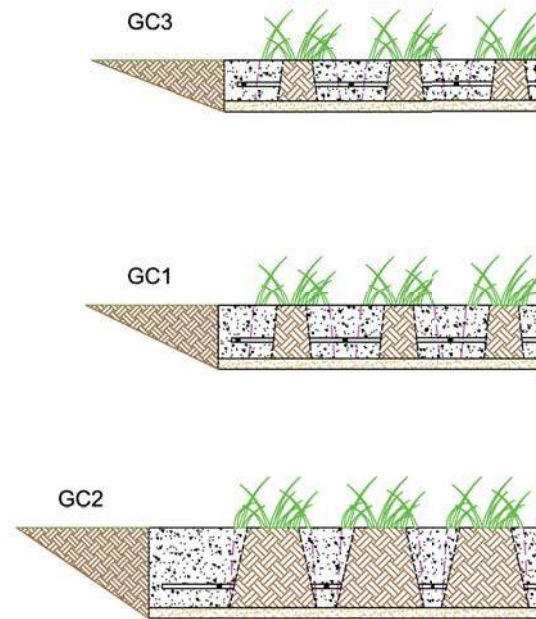
GrassConcrete

The following information is issued solely as an aid to design and does not assume liability in the final design. Information detailed is subject to change without notice.

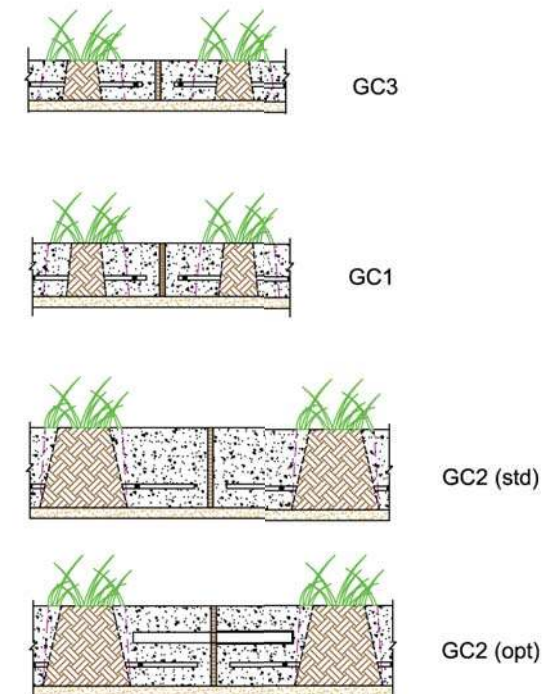


Typical longitudinal bay layout for open two way flow.

Detail 1



Detail 2



Details 1 & 2  
Scale 1 : 10



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Client Address

Site Details  
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Site Address

Revision History

Drawn By  
D Moorhouse

Date  
01.12.2010

Checked By

REH

Scale  
1:50 @ A3

Project Reference

Project Title

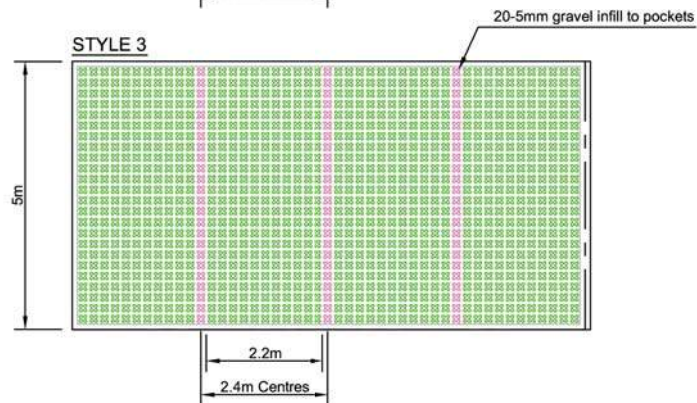
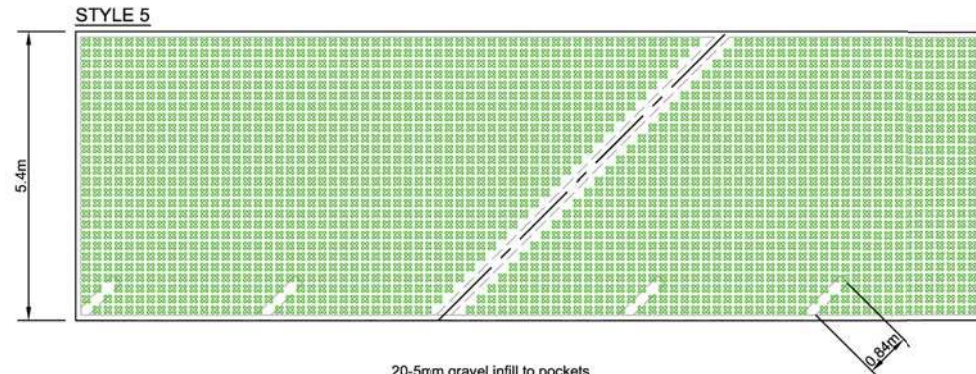
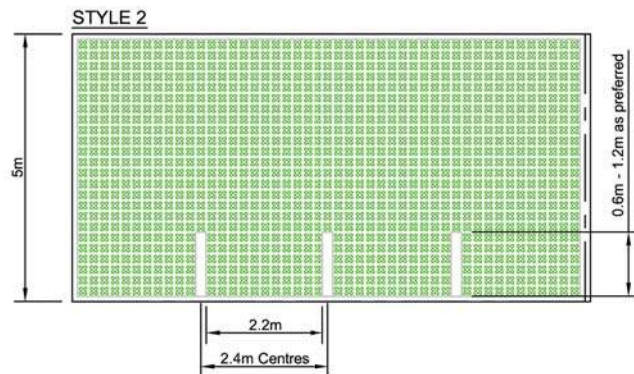
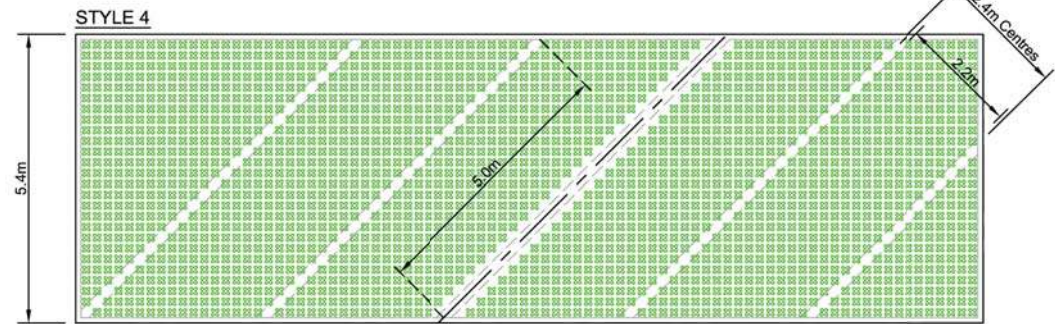
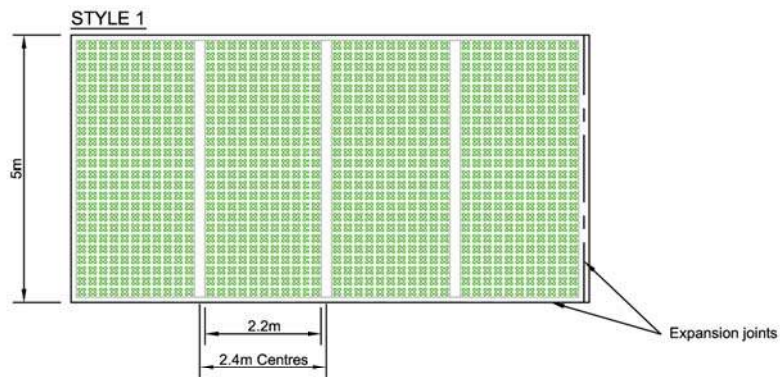
Typical Grasscrete Parking Details - Carpark Layouts

Drawing Number

GC-CAD-0005

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**Note:**  
For commercial vehicle parking same principles are applied with dimensions increased according to vehicle type.

## Parking Bay Delineation Types

Scale 1 : 50



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Revision History

Drawn By

D Moorhouse

Date

21.01.2011

Checked By

REH

Scale

1:50 @ A3

Project Reference

Project Title

Typical Grasscrete Parking Details - Carpark Delineation

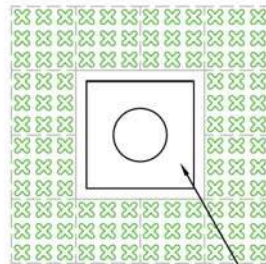
Drawing Number

GC-CAD-0006

Revision

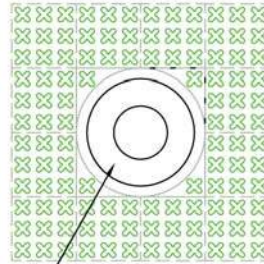
-

### Tree pit (rectangular)



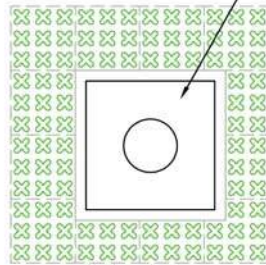
1.2m x 1.2m

### Tree pit (circular)

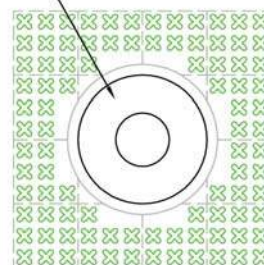


1.2m Radius

Optional infill with Grassroad® polypropylene pavers



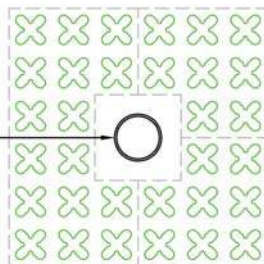
1.4m x 1.4m



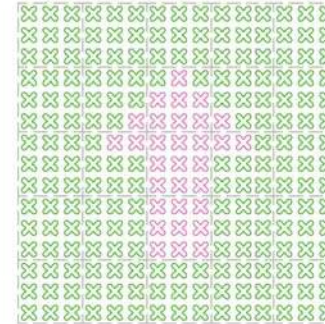
1.4m Radius

### Mortice for bollard or lighting

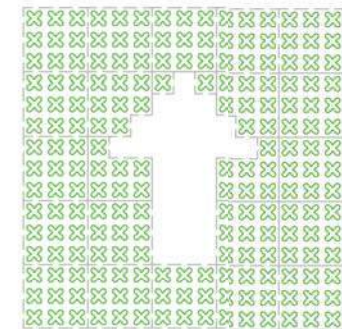
Twin wall PVCu pipe section set vertically to 5mm above finished level of Grasscrete to enable subsequent paring to level.



### Arrow Marker

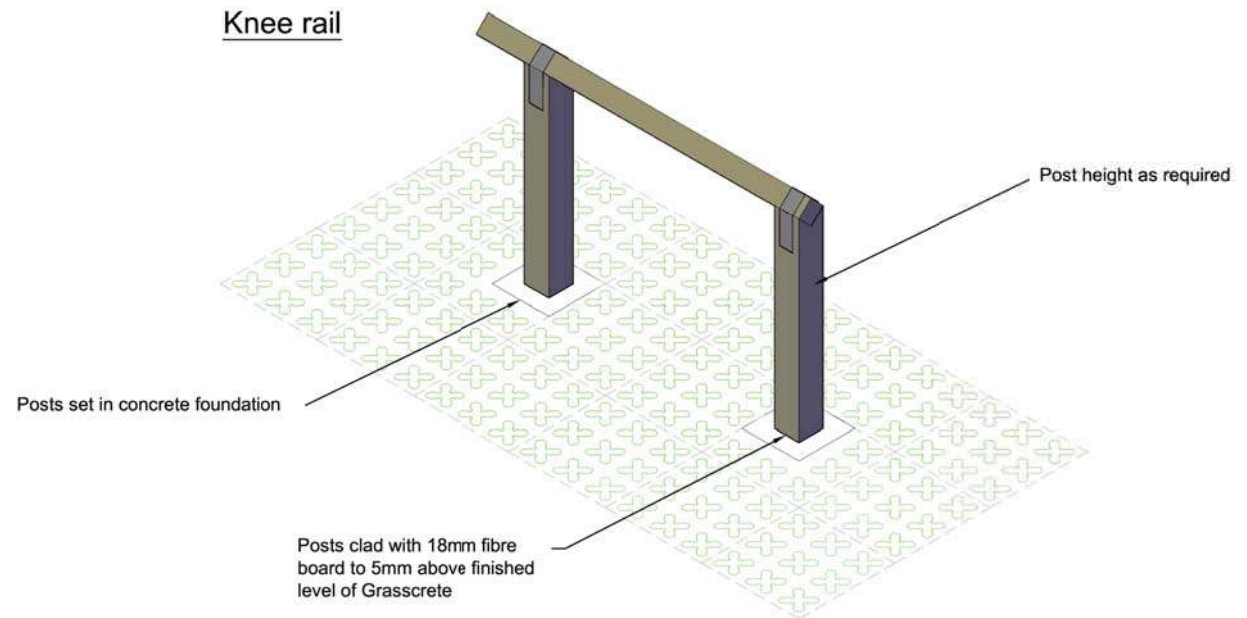


Pockets infilled with 20 to 5mm gravel



Pockets omitted and cast solid

### Knee rail



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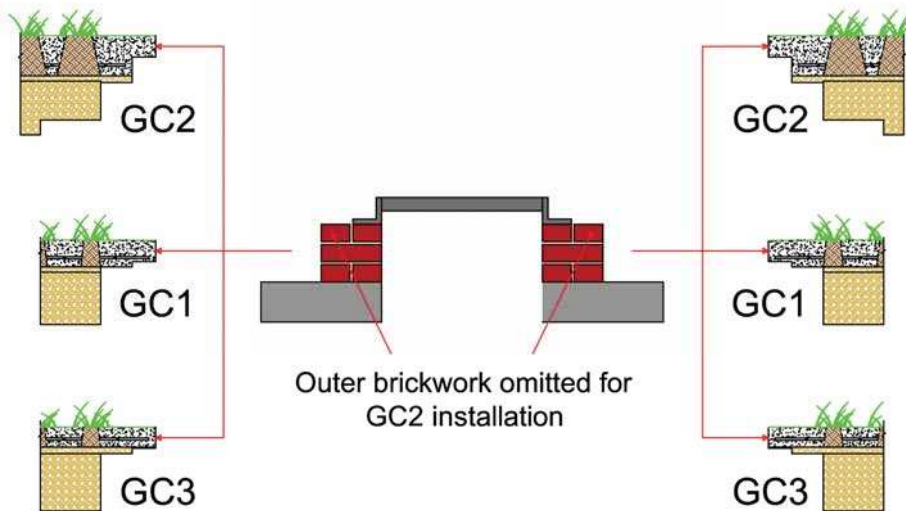
Typical Grasscrete Parking Details - Features 1 of 2

Drawing Number

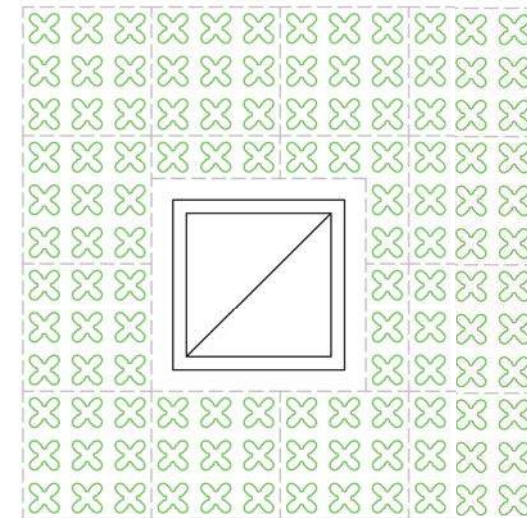
GC-CAD-0007

Revision

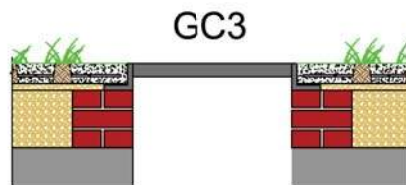
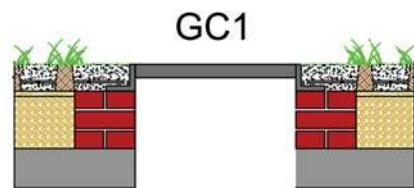
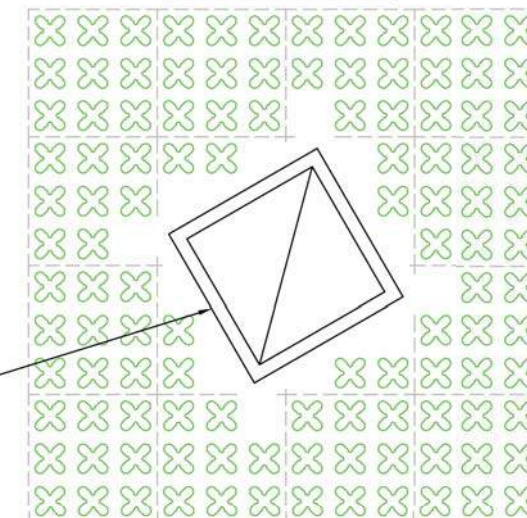
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Man hole cover and frame aligned to  
grasscrete layout

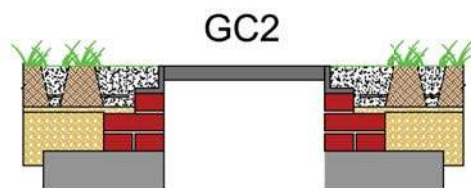


Man hole cover and frame not aligned to  
grasscrete layout



Man Hole Detailing  
Scale 1 : 20

Where man holes/inspection chambers are installed not in alignment with the Grasscrete grid formation, a stepped concrete edge will be visible as shown.



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Revision History

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Scale  
1:25 @ A3

Project Reference

Project Title

Typical Grasscrete Parking Details - Features 2 of 2

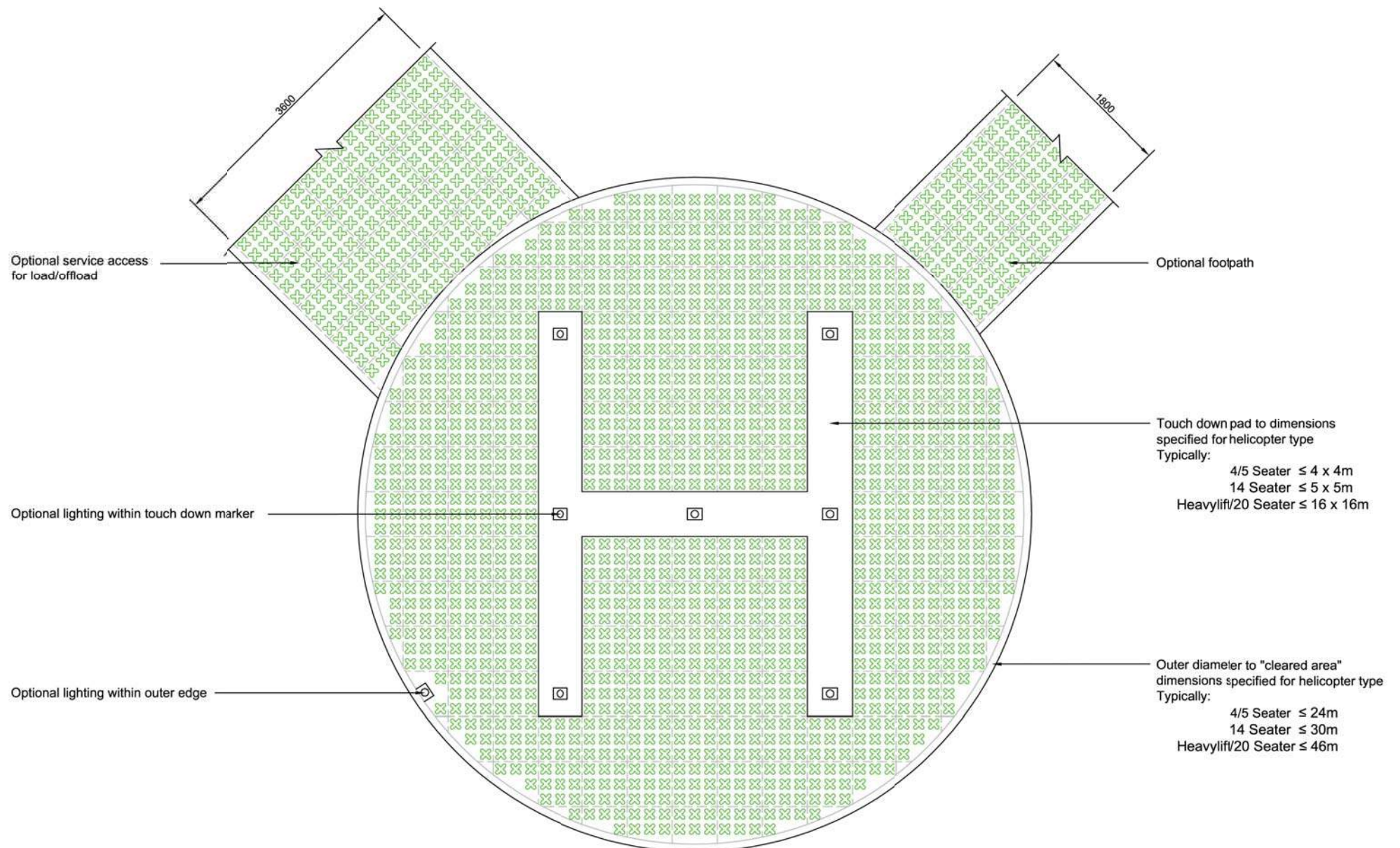
Drawing Number  
GC-CAD-0008

Revision

-



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Site Address

#### Revision History

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Drawn By  
D Moorhouse

Date  
24.01.2011

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REH

Scale  
1:50 @ A3

Project Reference

Project Title  
Typical Grasscrete Parking Details - Helipad

Drawing Number  
GC-CAD-0009

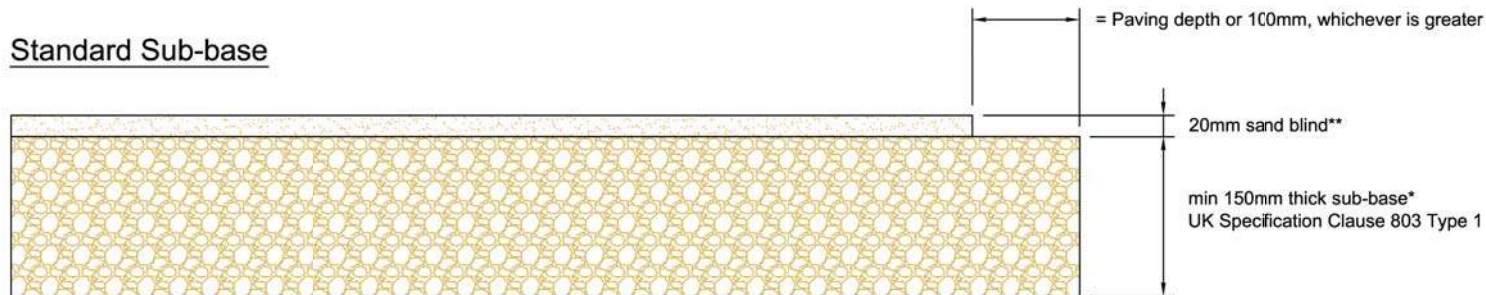
Revision  
-

\* Assuming an allowable ground bearing of 45kN/m<sup>2</sup>.  
For typical sub grades, the following guideline can be considered:

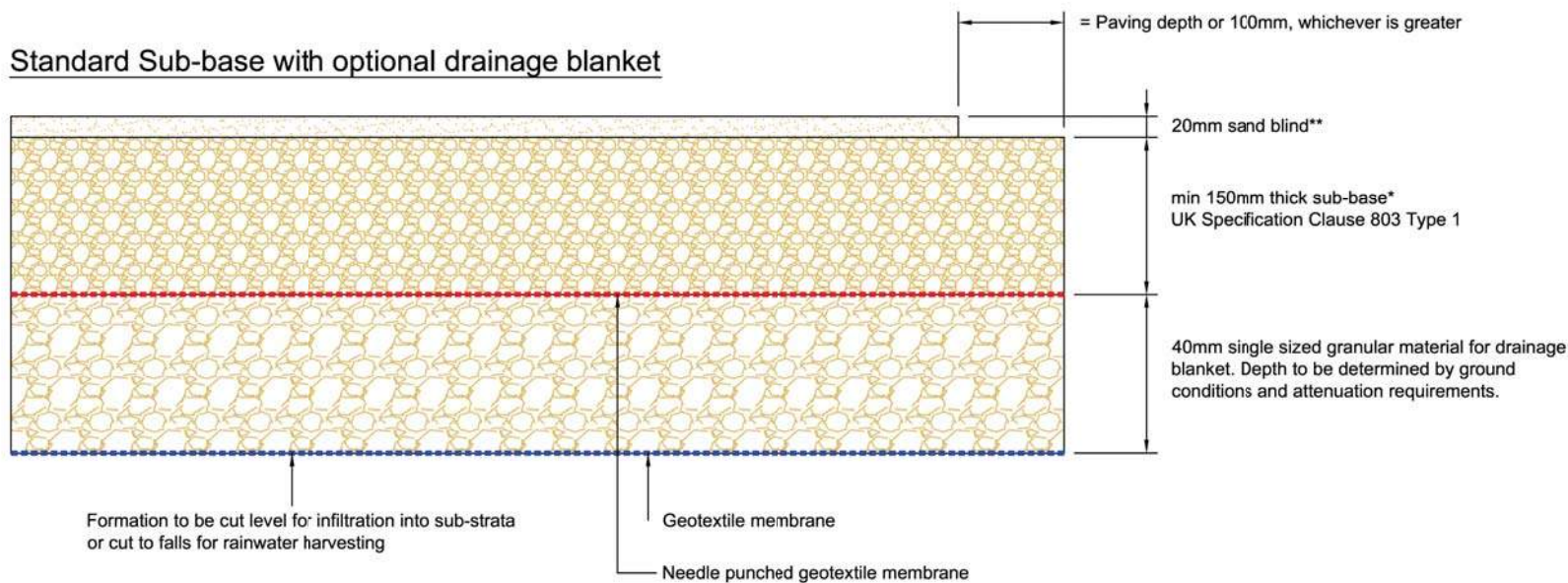
|            |                   |
|------------|-------------------|
| CBR 4%+    | 150mm Thick       |
| CBR 2 - 4% | 250 - 200mm Thick |
| CBR <2%    | 300mm + Thick     |

\*\* The sand blinding layer is intended to create a uniform seating for the Grasscrete formers and to prevent the loss of soil into the sub-base. It is not intended to be a regulating layer.

## Standard Sub-base



## Standard Sub-base with optional drainage blanket



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Project Reference

Project Title

Typical Grasscrete Parking Details - Sub-base details

Drawing Number  
GC-CAD-0010

Revision  
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