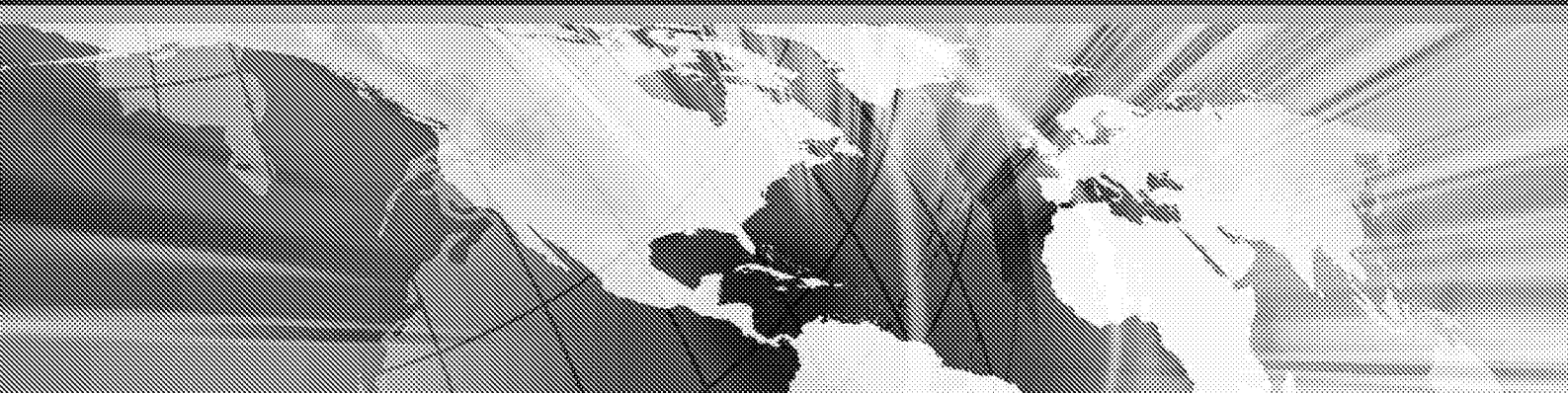


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ENERGY AND CLIMATE CHANGE
ENVIRONMENT AND SUSTAINABILITY
INFRASTRUCTURE AND UTILITIES
LAND AND PROPERTY
MINING, QUARRYING AND MINERAL ESTATES
WASTE RESOURCE MANAGEMENT



GREEN SWITCH DEVELOPMENTS LTD

Rookery Farm, Flansham

Landscape Enhancement & Management Plan

January 2015

your earth our world





your earth our world

DATE ISSUED: January 2015
JOB NUMBER: LE12330
REPORT NUMBER: 001

Green Switch Developments Ltd

Rookery Farm, Flansham

Landscape Enhancement & Management Plan

January 2015

PREPARED BY:

D Leaver

Principal Landscape Architect

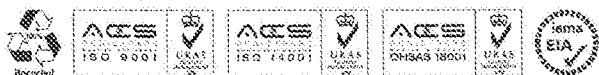
CHECKED AND APPROVED BY:

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Technical Director

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CONTENTS

1	INTRODUCTION	4
1.1	Terms of Reference	4
1.2	Relevant Planning Conditions	4
2	Planting & Management Plan.....	5
2.1	Introduction.....	5
2.2	Hedgerow Establishment	5
2.3	Wildflora Grassland.....	7

DRAWINGS

LE12330/001 Landscape

SCALE

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1 INTRODUCTION

1.1 Terms of Reference

- 1.1.1 Wardell Armstrong LLP (WA) has been commissioned by Green Switch Developments Ltd to prepare a Landscape Enhancement & Management Plan for the proposed solar park, on land at Rookery Farm, Flansham.

1.2 Relevant Planning Conditions

- 1.2.1 This report outlines the soft landscape works, including planting specifications and maintenance, to address the requirements of Condition 10 (Landscaping Scheme) within the approved planning application number Y/14/14/, from Arun District Council. Condition 10 states that:

“No development shall take place until a landscaping scheme, including details of new hedgerows to be planted and the 'gapping-up' of existing hedgerows in and around the site, as well as a timetable for implementation/planting has been submitted to and approved in writing by the Local Planning Authority. The development shall be undertaken in accordance with the approved details and timetable. Any trees/shrubs or plants which die, are removed or become diseased within 5 years of planting shall be replaced during the next planting season with trees/shrubs/plants of a similar size and species.”

- 1.2.2 This document sets out the arrangements for the implementation and 5 year maintenance of the landscape scheme. It should be read in conjunction with the drawing attached to this document (Drawing Number LE12330/001).

2 PLANTING & MANAGEMENT PLAN

2.1 Introduction

2.1.1 There are three main landscape elements within this project, which are:

- Proposed infilling of broken hedgeline to the northern site boundary;
- Proposed new hedgeline to a section of the southern site boundary; and
- Meadow wildflora grassland to the perimeter of the site.

2.1.2 The landscape proposals are indicated on Drawing Number LE12330-001 attached to this report. The planting and management proposals for the site are outlined below.

2.2 Hedgerow Establishment

2.2.1 The proposed hedgerow establishment will be based on the establishment of a robust 2.5-3m high boundary hedgerow of native shrubs forming a dense vertical structure and increasing site biodiversity. Initial establishment will concentrate on strong establishment and a minimum 95% stocking within 5 growing seasons.

2.2.2 Plants will be pit or trench planted with 40 to 60 centimetre bare root 1+1 year forestry transplants with a root collar diameter in the range of 8mm to 12mms. To be planted in groups of 7-9 plants. All bare rooted plants to be root dipped in a moisture retention gel and mychorrhizal powder. All plants to be planted with slow release fertiliser tablets.

2.2.3 The species mix will be as indicated in Table 1 below, with shrubs to be planted in double staggered rows with 30cm spacings and 40cm between rows. The planting mixes will be as follows:

Table 1: Hedgerow Planting		
Common Name	Scientific Name	Percentage Composition
Hawthorn	<i>Crataegus monogyna</i>	50
Blackthorn	<i>Prunus spinosa</i>	20
Hazel	<i>Corylus avellana</i>	10
Wild privet	<i>Ligustrum vulgare</i>	5
Dog rose	<i>Rosa canina</i>	5
Dogwood	<i>Cornus sanguinea</i>	5
Guelder rose	<i>Viburnum opulus</i>	5
	Total	100

2.2.4 Plants are to be taken from a range of English provenances in and around Region 405, as detailed in Forestry Commission Practice Note 8.

2.2.5 Planting will be undertaken within the November to March timing window and should avoid freezing and water logged conditions. On completion of the planting of trees and shrubs, the roots will be firmed and watered as necessary. Plants will be protected with tree and shrub shelters and spiral guards (or rabbit-proof fence). Tree and shrub shelters and spiral guards will be checked and adjusted to ensure that water does not collect within the shelter. Planting stations will be maintained free of weeds over a minimum diameter of 1 metre by the application of glyphosate based herbicide, together with a winter herbicide if required (Kerb or equivalent approved). Weeds growing within shelters will be cleared by hand. This maintenance is likely to be needed at the following frequency:

- Years 1 and 2: April, July and September plus possible winter herbicide;
- Years 3, 4 and 5: April/May and August/September.

2.2.6 A full beat-up assessment will be carried out during August/September each year with beating-up to be undertaken during the winter planting period to 95% during

the first 5 years. Replacement plants and planting to be within the next planting season with trees/shrubs/plants of a similar size and species.

- 2.2.7 At each maintenance visit planted areas will be checked for pests and diseases and treatment will be in accordance with best horticultural/forestry practice.
- 2.2.8 In years one to three, new planted sections of hedgerow will be lightly trimmed to encourage a dense growth. After this period the hedgerows will be maintained on a two or three year cycle with a minimum height of approximately 2m. Cutting will be undertaken in late January or February to avoid potential impacts on nesting birds and other wildlife.
- 2.2.9 Once planting is established, generally from Year 3 onwards, shelters may be removed. All arboricultural operations will be undertaken outside the breeding bird season (March to July inclusive). It is not anticipated that general management operations will be undertaken during this time, however, should urgent works be required in relation to health and safety matters then appropriate surveys for breeding/nesting birds would be required prior to all works.

2.3 Wildflora Grassland

- 2.3.1 The proposed grassland margins will concentrate on the establishment of a species rich sward with wildflowers. Details of the species mixes and aftercare prescriptions are provided below.
- 2.3.2 Work is to be undertaken within the autumn or spring period when weather and ground conditions permit and as soon as possible after final soil placement.

Cultivations

- 2.3.3 The land is to be cultivated to create a suitable tilth for grass seeding whilst soils are in a suitably dry condition. This may include cultivation with a 4 to 8 tine chisel plough to cultivate to 300mm depth of the soil profile. Subject to the finish left by this operation, a heavy agricultural disc may be used to work the surface down to 150-200mm depth.

- 2.3.4 An assessment of surface stone will then be made and if deemed necessary, a surface rake is to be used to remove all stones above 75mm maximum diameter. Stones are to be piled on the edge of the work area for removal to a hardcore pile elsewhere on site. In addition, any areas of compacted soils should be cross-ripped using a three winged tine to a maximum 450mm, prior to seeding cultivations.
- 2.3.5 The soil surface is to be cultivated with a power harrow to a minimum 10cm depth to achieve a tilth for seeding. The neutral wildflora meadow grass seed mix is to be cross drilled into the relevant area. If the grass seed drill does not include a following surface press roller then a single pass with a light Cambridge roll is to be undertaken to ensure good soil to seed contact without causing compaction.
- 2.3.6 Area to be sown with a neutral wildflora meadow mix, such as British Seed House mix WFG4 (or equivalent) at a rate of 25kg / ha, with low intensity management creating suitable habitats for invertebrates and breeding birds. Grass seed to be sown at the earliest suitable season during spring or autumn period (March-May or late August-September) with seeding mix as follows (see Table 2):

Table 2: Wildflower seed mix		
Common Name	Species	% Composition
Slender Creeping Red Fescue	<i>Festuca rubra subsp. littoralis</i>	25
Crested Dogstail	<i>Cynosurus cristatus</i>	20
Strong Creeping Red Fescue	<i>Festuca rubra rubra</i>	20
Tall Fescue	<i>Festuca arundinacea</i>	10
Sainfoin	<i>Onobrychis vicifolia</i>	5
Small leaved Timothy	<i>Phleum bertolonii</i>	5
Oxeye Daisy	<i>Leucantemum vulgare</i>	2
Common Knapweed	<i>Centaurea cyanus</i>	1.2
Lady's Bedstraw	<i>Galium verum</i>	1.2
Flax	<i>Linum usitatissimum</i>	1.2
Ribwort plantain	<i>Plantago lanceolata</i>	1.2
Meadow buttercup	<i>Ranunculus acris</i>	1.2
Salad burnet	<i>Sanguisorba minor</i>	1.2
Yarrow	<i>Achillea millefolium</i>	1
Black medick	<i>Medicago lupulina</i>	1
White Melilot	<i>Melilotus alba</i>	1
Birdsfoot trefoil	<i>Lotus corniculatus</i>	0.6
Self Heal	<i>Prunela vulgaris</i>	0.6
Yellow rattle	<i>Rhinanthus minor</i>	0.6
Ragged Robin	<i>Lychnis flos-cuculi</i>	0.3
Small scabiuos	<i>Scabiosa columbaria</i>	0.3
Common vetch	<i>Vicia sativa</i>	0.2
Pignut	<i>Conopodium majus</i>	0.1
Meadow Cranesbill	<i>Geranium pratense</i>	0.1
	Total	100

2.3.7 All grass seed to be produced for the current growing season and of Blue label certified varieties, to EC purity and germination regulations. Seed will be visually inspected and approved and must healthy, viable and free from disease and decay.

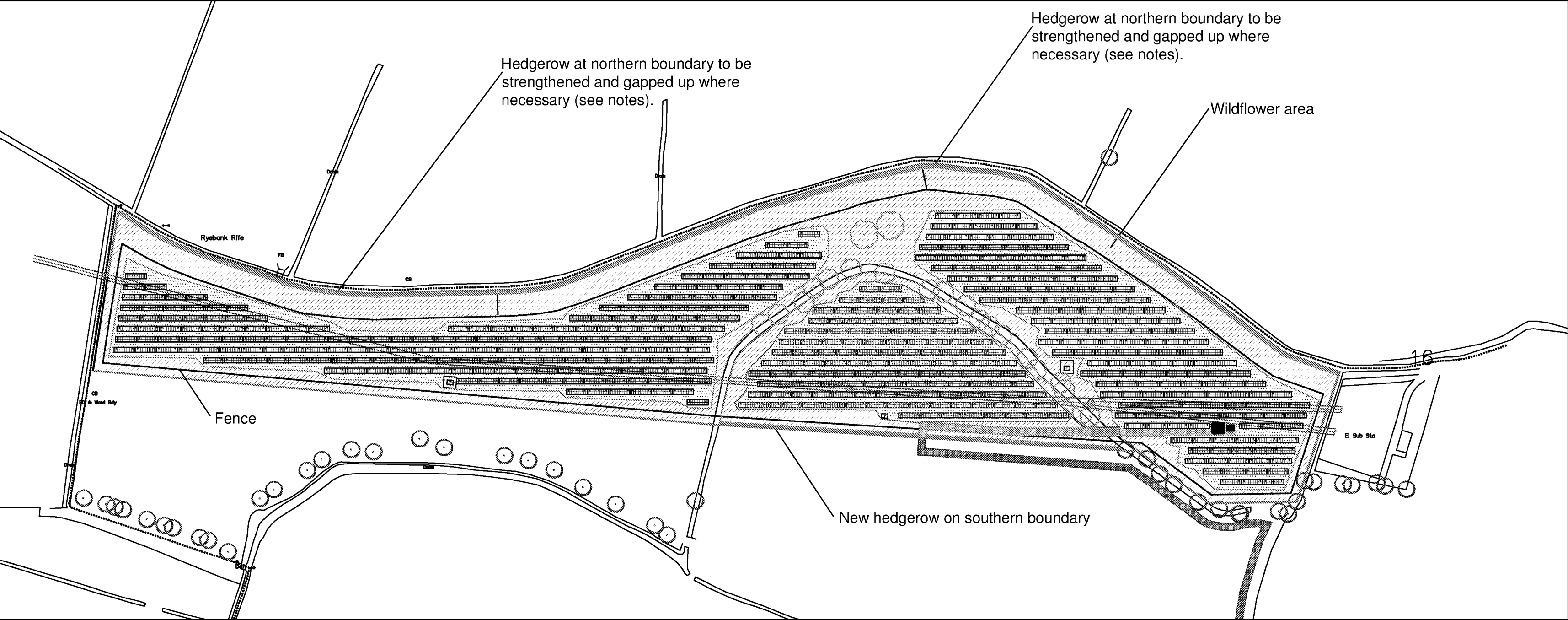
Mowing Aftercare

- 2.3.8 Flail mulch mowing is to be undertaken as an annual operation once the grass has reached 3 leaf stage. This is to encourage tillering out from the drill lines and thickening up of the sward.
- 2.3.9 Spring sown areas are then to be mown in August – September following the bird nesting season and autumn sown areas once during the October to November period. Once established, mowing will generally follow annually during the remaining 5 year aftercare period. The wildflower grassland areas will be managed with a single cut (reducing sward height to approximately 150mm) late in the season, between late August and September, subject to weather conditions. The late cut will allow the seeds of the later flowering species to fall prior to the cut.
- 2.3.10 Cuttings will remain on-site for two days following the cut and then removed from site. Areas around the margins of the site will be allowed to grow taller, providing increased cover and will benefit a variety of fauna including amphibian species, invertebrates and small mammals.
- 2.3.11 A grazing alternative to mowing is provided in the Habitat Management Plan submitted with the planning application (Avian Ecology, dated 17th January 2014).
- 2.3.12 Grassland areas will be monitored for invasive and competitive species which will be controlled by either the application of a selective herbicide and/or cutting. Herbicide application will be undertaken at an appropriate time of year, with consideration for other more desirable flora and fauna.

Patch Up Seeding

- 2.3.13 A 95% grass sward cover with the sown species within 12 months of sowing will be deemed an acceptable standard of establishment on the site. Any areas where the seed has not grown will be reseeded the following March after seeding on the autumn sown areas and in the following August / September (moisture dependent) on the spring sown areas.
- 2.3.14 Replacement seed and seeding practice to comply with sections 2.3.3 to 2.3.13.

DRAWINGS



NOTES

1. Contractor to locate and protect all service lines, refer to engineer's drawing for locations.

2. Refer to BS 4428 for general landscape operations.

3. Vegetation outwith the proposed land ownership boundary is not affected by the proposed development.

4. All existing boundary hedgerows with gaps of more than 500mm are to be planted up with the specified mix.

5. All existing trees and hedgerows on site would be protected during the construction phase in accordance with the latest published edition of BS 5837.

6. The existing hedgerows would be managed for the life of the solar farm by annual cutting in winter (outside the bird breeding season) to a height of approximately 2.5 -3m and a width of approximately 1.5m.

7. The proposed hedgerow would be trench planted, in double staggered rows at 30cm spacings. The plants shall be of the best quality nursery stock, in accordance with the latest published edition of BS3936 and where possible of local provenance. The plants would be protected during establishment by appropriate continuous rabbit proof fencing or individual tree/shrub guards.
8. During the establishment of the hedgerow a weed-free area would be maintained around each of the plants, which will be achieved by either mechanical or chemical means. An appropriate herbicide suitable for use next to water will be applied to an area of 1m diameter around the base of the plants, during the growing season (i.e. mid April to end of September).

9. Wildflower mix to be BSHM WFG4 or equivalent. Sowing rate of 2.5g per m².

10. First choice of plants / seeds should be of English provenances, preferably growing in the same region as the intended site. Plants are therefore to be taken from a range of provenances in and around Region 405, as detailed in Forestry Commission Practice Note 8.

Hedgerow Species Mix					
Species	Common Name	Height	Specification	Density	Percentage %
<i>Crataegus monogyna</i>	Hawthorn	40-60cm	Transplant: 1+1 BR	300mm Ctr Double Staggered	50
<i>Prunus spinosa</i>	Blackthorn	40-60cm	Transplant: 1+1 BR	300mm Ctr Double Staggered	20
<i>Corylus avellana</i>	Hazel	40-60cm	Transplant: 1+1 BR	300mm Ctr Double Staggered	10
<i>Ligustrum vulgare</i>	Wild privet	40-60cm	Transplant: 1+1 BR	300mm Ctr Double Staggered	5
<i>Rosa canina</i>	Dog rose	40-60cm	Transplant: 1+1 BR	300mm Ctr Double Staggered	5
<i>Cornus sanguine</i>	Dogwood	40-60cm	Transplant: 1+1 BR	300mm Ctr Double Staggered	5
<i>Viburnum opulus</i>	Guelder rose	40-60cm	Transplant: 1+1 BR	300mm Ctr Double Staggered	5

DO NOT SCALE FROM THIS DRAWING

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KEY

Site boundary

Proposed wildflower planting

Grassland

Existing trees

Proposed hedgerow - reinforcements and new

A	First Issue	21/01/15	ZF	DL	CR
REVISION	DETAILS	DATE	DRAWN	CHECK'D	APPRO'D

CLIENT

Green Switch Developments Ltd

PROJECT

Rookery Farm Solar Farm

Bognor Regis

DRAWING TITLE

Planting Plan

DRG No.

LE12330-001

SCALE

1:2000 @ A2

DATE

20/01/15

DRAWN BY

ZF

CHECKED BY

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APPROVED BY

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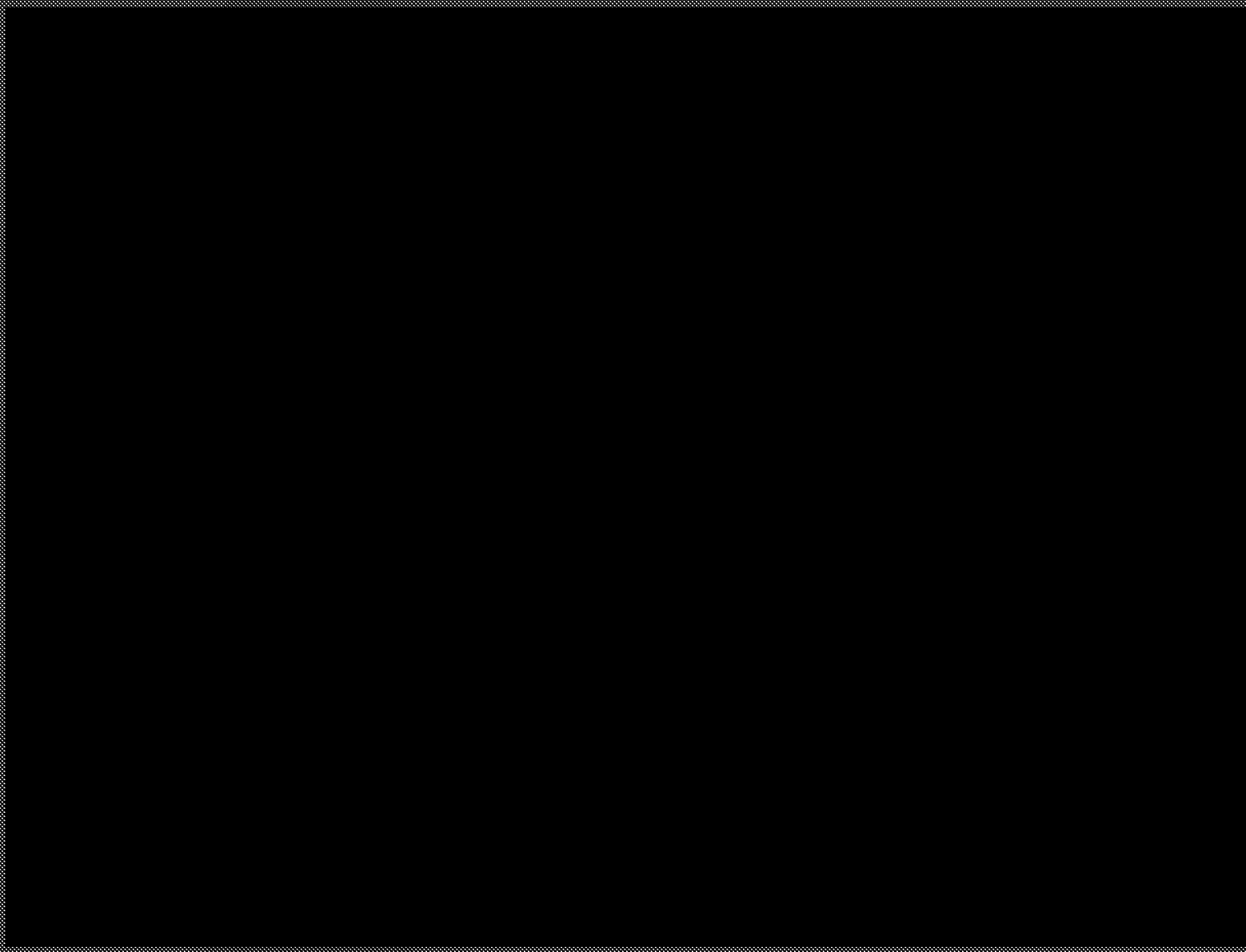
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