Green Hill Solar Farm
EN010170

Environmental Statement
Appendix 8.1: LVIA Methodology
Revision A (Tracked)
(Part 2 of 2)

Prepared by: Lanpro Services

Date: ~~May 2025~~February 2026

Document Reference: ~~APP~~EX5/GH6.3.8.1_A

APFP Regulation 5(2)(a)

Schedule of Changes

Revision	Section Reference	Description of Changes	Reason for Revision
A	Photography and Photomontage Methodology	Addition of viewpoints MKCC 1, MKCC 2, and MKCC 3	As requested by Milton Keynes City Council.

APPENDIX 1.2: LAYOUT INFORMATION USED FOR 3D MODEL CONSTRUCTION

GREEN HILL SOLAR FARM

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Key

Area For Solar Panels And Associated Development

Existing

- Existing Vegetation
- Existing Ditch Verge
- Existing Footpath
- Existing Bridleway
- Existing Byway Open To All Traffic
- Existing Restricted Byways
- Existing Buildings
- Existing Listed Buildings
- Existing Utilities

Proposed

- Existing Vegetation To Be Retained And Enhanced
- Proposed Meadow Creation (Beneath Panels)
- Proposed Tussock Grassland Margins
- Proposed Damp Grassland
- Proposed Ground Nesting Bird Mitigation - Set Aside
- Proposed Ground Nesting Bird Mitigation - Continued Arable Land
- Proposed Diverse Wildflower Meadow
- Proposed Low Density Scrub
- Proposed Native Woodland Copse/Shelter Belt (Scrub And Tree Planting)
- Dense Linear Tree Planting (Without Scrub Planting)
- Native Tree and Scrub Planting - Instant Screening
- Native Scrub Planting With Scattered Trees
- Proposed River Corridor Planting For Ecology
- Proposed River Corridor Planting For Flooding
- Proposed River Corridor Planting For Instant Screening
- Proposed Indicative Locations For Ponds
- Potential Location For Proposed Cluster Of Wader Scrapes
- Existing Hedge To Be Reinforced With Irregularly Spaced Native Tree Planting
- Existing Hedge To Be Reinforced With Densely Spaced Native Tree Planting
- Existing Hedge To Be Reinforced With Densely Spaced Native Tree Planting - Instant Screening
- Proposed Native Species Rich Hedgerow With Irregular Spaced Native Hedgerow Trees
- Proposed Secondary Native Species Rich Hedgerow With Densely Spaced Native Hedgerow Trees
- Proposed Solar Arrays
- Proposed Fenceline
- Proposed Access Tracks
- Proposed Inverters
- Proposed Substation
- Proposed Battery Energy Storage Systems
- Proposed Permissive Path For Pedestrians
- Proposed Permissive Path For Pedestrians and Horse Riders
- Existing Vegetation To Be Removed

Green Hill A

Location Plan
1:80,000 @ A0

Site A
Site A.2
Site B
Site C & D
Site E.1
Site E.2
BESS
Site F.1
Site F.2
Site F.3
Site G

1:2,500 @A0

GREEN HILL SOLAR FARM

Figure 4.10
Green Hill Site A
Landscape and Ecology Mitigation Plan
[EN010170/APP/GH6.4.4.10]
5(2)(a)

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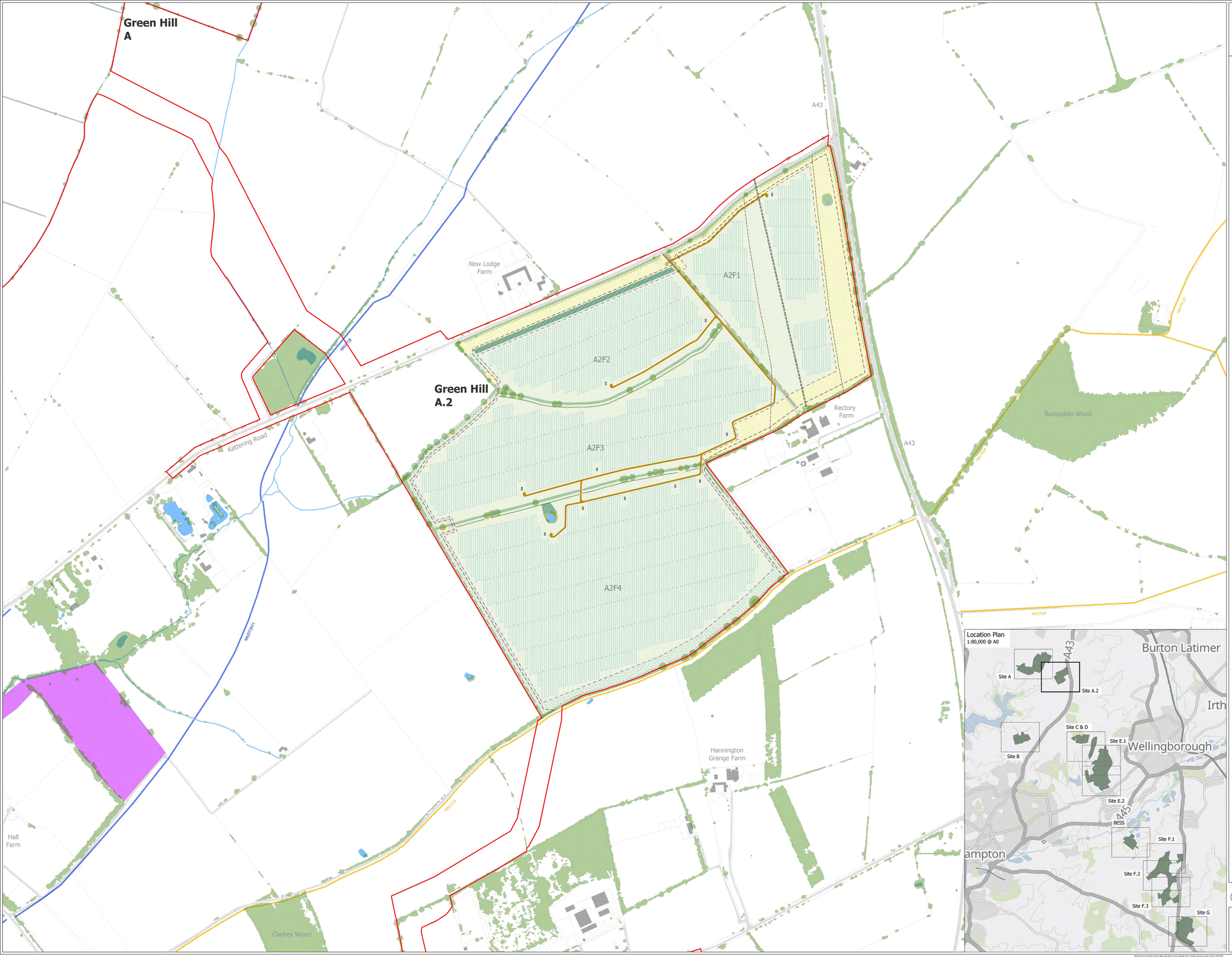

GREEN HILL SOLAR FARM

Lanpro

Key

Area For Solar Panels And Associated Development

Existing

- Existing Vegetation
- Existing Ditch Verge
- Existing Footpath
- Existing Bridleway
- Existing Byway Open To All Traffic
- Existing Restricted Byways
- Existing Buildings
- Existing Listed Buildings
- Existing Utilities

Proposed

- Existing Vegetation To Be Retained And Enhanced
- Proposed Meadow Creation (Beneath Panels)
- Proposed Tussock Grassland Margins
- Proposed Damp Grassland
- Proposed Ground Nesting Bird Mitigation - Set Aside
- Proposed Ground Nesting Bird Mitigation - Continued Arable Land
- Proposed Diverse Wildflower Meadow
- Proposed Low Density Scrub
- Proposed Native Woodland Copse/Shelter Belt (Scrub And Tree Planting)
- Dense Linear Tree Planting (Without Scrub Planting)
- Native Tree and Scrub Planting - Instant Screening
- Native Scrub Planting With Scattered Trees
- Proposed River Corridor Planting For Ecology
- Proposed River Corridor Planting For Flooding
- Proposed River Corridor Planting For Instant Screening
- Proposed Indicative locations For Ponds
- Potential Location For Proposed Cluster Of Wader Scrapes
- Existing Hedge To Be Reinforced With Irregularly Spaced Native Tree Planting
- Existing Hedge To Be Reinforced With Densely Spaced Native Tree Planting
- Existing Hedge To Be Reinforced With Densely Spaced Native Tree Planting - Instant Screening
- Proposed Native Species Rich Hedgerow With Irregular Spaced Native Hedgerow Trees
- Proposed Secondary Native Species Rich Hedgerow With Densely Spaced Native Hedgerow Trees
- Proposed Solar Arrays
- Proposed Fenceline
- Proposed Access Tracks
- Proposed Inverters
- Proposed Substation
- Proposed Battery Energy Storage Systems
- Proposed Permissive Path For Pedestrians
- Proposed Permissive Path For Pedestrians And Horse Riders
- Existing Vegetation To Be Removed

N

1:2,500 @A0

GREEN HILL SOLAR FARM

Figure 4.11
Green Hill Site A.2
Landscape and Ecology Mitigation Plan
[EN010170/APP/GH6.4.4.11]
5(2)(a)

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GREEN HILL SOLAR FARM

Lanpro

Sywell Road

Tilthe Farm

oulton
odge
arm

New College Farm

TM2Jxn

BF1

BF2

BF3

BF4

BF5

RN1DG12#2

Overstone Old Rectory

Location Plan
1:80,000 @ A0

Site A
Site A.2
Site B
Site C & D
Site E.1
Site E.2
BESS
Site F.1
Site F.2
Site F.3
Site G
A43
Burton Latimer
Irthling
gborough
Northampton

Area For Solar Panels And Associated Development

Existing

Existing Vegetation

Existing Ditch Verge

Existing Footpath

Existing Bridleway

Existing Byway Open To All Traffic

Existing Restricted Byways

Existing Buildings

Existing Listed Buildings

Existing Utilities

Proposed

Existing Vegetation To Be Retained And Enhanced

Proposed Meadow Creation (Beneath Panels)

Proposed Tussock Grassland Margins

Proposed Damp Grassland

Proposed Ground Nesting Bird Mitigation - Set Aside

Proposed Ground Nesting Bird Mitigation - Continued Arable Land

Proposed Diverse Wildflower Meadow

Proposed Low Density Scrub

Proposed Native Woodland Copse/Shelter Belt (Scrub And Tree Planting)

Dense Linear Tree Planting (Without Scrub Planting)

Native Tree and Scrub Planting - Instant Screening

Native Scrub Planting With Scattered Trees

Proposed River Corridor Planting For Ecology

Proposed River Corridor Planting For Flooding

Proposed River Corridor Planting For Instant Screening

Proposed Indicative locations For Ponds

Potential Location For Proposed Cluster Of Wader Scrapes

Existing Hedge To Be Reinforced With Irregularly Spaced Native Tree Planting

Existing Hedge To Be Reinforced With Densely Spaced Native Tree Planting

Existing Hedge To Be Reinforced With Densely Spaced Native Tree Planting - Instant Screening

Proposed Native Species Rich Hedgerow With Irregular Spaced Native Hedgerow Trees

Proposed Secondary Native Species Rich Hedgerow With Densely Spaced Native Hedgerow Trees

Proposed Solar Arrays

Proposed Fenceline

Proposed Access Tracks

Proposed Inverters

Proposed Substation

Proposed Battery Energy Storage Systems

Proposed Permissive Path For Pedestrians

Proposed Permissive Path For Pedestrians And Horse Riders

Existing Vegetation To Be Removed

N

1:2,500 @A1

GREEN HILL SOLAR FARM

Figure 4.12
Green Hill Site B
Landscape and Ecology Mitigation Plan
[EN010170/APP/GH6.4.4.12]
5(2)(a)

GREEN HILL SOLAR FARM

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Green Hill C

Green Hill D

Green Hill E

CF1

CF2

CF3

CF4

CF5

CF6

CF7

CF8

CF9

CF10

DF1

DF2

DF3

DF4

Wood Lodge Farm

Wellingborough Road

Sywel Road

Highfield Lodge

Highfield Road

Garden Centre

Christmas Farm

The Grange

Mears Ashby

NN/TS/4

NN/TS/2

NN/UL/24

NN/TS/3

NN/TS/1

NN/TN/4

Location Plan
1:80,000 @ A0

Burton Latimer

Irthl

Wellingborough

ampton

A43

A45

Site A

Site A2

Site B

Site C & D

Site E.1

Site E.2

BESS

Site F.1

Site F.2

Site F.3

Site G

Key

Area For Solar Panels And Associated Development

Existing

- Existing Vegetation
- Existing Ditch Verge
- Existing Footpath
- Existing Bridleway
- Existing Byway Open To All Traffic
- Existing Restricted Byways
- Existing Buildings
- Existing Listed Buildings
- Existing Utilities

Proposed

- Existing Vegetation To Be Retained And Enhanced
- Proposed Meadow Creation (Beneath Panels)
- Proposed Tussock Grassland Margins
- Proposed Damp Grassland
- Proposed Ground Nesting Bird Mitigation - Set Aside
- Proposed Ground Nesting Bird Mitigation - Continued Arable Land
- Proposed Diverse Wildflower Meadow
- Proposed Low Density Scrub
- Proposed Native Woodland Copse/Shelter Belt (Scrub And Tree Planting)
- Dense Linear Tree Planting (Without Scrub Planting)
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- Proposed River Corridor Planting For Flooding
- Proposed River Corridor Planting For Instant Screening
- Proposed Indicative Locations For Ponds
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- Existing Hedge To Be Reinforced With Densely Spaced Native Tree Planting
- Existing Hedge To Be Reinforced With Densely Spaced Native Tree Planting - Instant Screening
- Proposed Native Species Rich Hedgerow With Irregular Spaced Native Hedgerow Trees
- Proposed Secondary Native Species Rich Hedgerow With Densely Spaced Native Hedgerow Trees
- Proposed Solar Arrays
- Proposed Fenceline
- Proposed Access Tracks
- Proposed Inverters
- Proposed Substation
- Proposed Battery Energy Storage Systems
- Proposed Permissive Path For Pedestrians
- Proposed Permissive Path For Pedestrians and Horse Riders
- Proposed Private Access To Sywell Wood
- Existing Vegetation To Be Removed

N

1:2,500 @A0

GREEN HILL SOLAR FARM

Figure 4.13.1
Green Hill Site C & D Option A
Landscape and Ecology Mitigation Plan
[EN010170/APP/GH6.4.4.13.1]
5(2)(a)

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GREEN HILL SOLAR FARM

Lanpro

Key

Area For Solar Panels And Associated Development

Existing

- Existing Vegetation
- Existing Ditch Verge
- Existing Footpath
- Existing Bridleway
- Existing Byway Open To All Traffic
- Existing Restricted Byways
- Existing Buildings
- Existing Listed Buildings
- Existing Utilities

Proposed

- Existing Vegetation To Be Retained And Enhanced
- Proposed Meadow Creation (Beneath Panels)
- Proposed Tussock Grassland Margins
- Proposed Damp Grassland
- Proposed Ground Nesting Bird Mitigation - Set Aside
- Proposed Ground Nesting Bird Mitigation - Continued Arable Land
- Proposed Diverse Wildflower Meadow
- Proposed Low Density Scrub
- Proposed Native Woodland Copse/Shelter Belt (Scrub And Tree Planting)
- Dense Linear Tree Planting (Without Scrub Planting)
- Native Tree and Scrub Planting - Instant Screening
- Native Scrub Planting With Scattered Trees
- Proposed River Corridor Planting For Ecology
- Proposed River Corridor Planting For Flooding
- Proposed River Corridor Planting For Instant Screening
- Proposed Indicative Locations For Ponds
- Potential Location For Proposed Cluster Of Wader Scrapes
- Existing Hedge To Be Reinforced With Irregularly Spaced Native Tree Planting
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- Existing Hedge To Be Reinforced With Densely Spaced Native Tree Planting - Instant Screening
- Proposed Native Species Rich Hedgerow With Irregular Spaced Native Hedgerow Trees
- Proposed Secondary Native Species Rich Hedgerow With Densely Spaced Native Hedgerow Trees
- Proposed Solar Arrays
- Proposed Fenceline
- Proposed Access Tracks
- Proposed Inverters
- Proposed Substation
- Proposed Battery Energy Storage Systems
- Proposed Permissive Path For Pedestrians
- Proposed Permissive Path For Pedestrians And Horse Riders
- Existing Vegetation To Be Removed

Location Plan
1:80,000 @ A0

Site A
Site A2
Site B
Site C & D
Site E.1
Site E.2
BESS
Site F.1
Site F.2
Site F.3
Site G
Burton Latimer
Wellingborough
A43
A45

1:2,500 @A0

GREEN HILL SOLAR FARM

Figure 4.14
Green Hill Site E (1)
Landscape and Ecology Mitigation Plan
[EN010170/APP/GH6.4.4.14]
5(2)(a)

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Green Hill E

GREEN HILL SOLAR FARM

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Mears Ashby

Mears Ashby Road

Hockerhill Farm

Ward's Barn

Field Barn

Earls Barton

A4500

EF13 EF14 EF15 EF16 EF17 EF18 EF19 EF20 EF21 EF22 EF23 EF24 EF25 EF26 EF27 EF28 EF29 EF30 EF31 EF32 EF33 EF34

Key

Area For Solar Panels And Associated Development

Existing

- Existing Vegetation
- Existing Ditch Verge
- Existing Footpath
- Existing Bridleway
- Existing Byway Open To All Traffic
- Existing Restricted Byways
- Existing Buildings
- Existing Listed Buildings
- Existing Utilities

Proposed

- Existing Vegetation To Be Retained And Enhanced
- Proposed Meadow Creation (Beneath Panels)
- Proposed Tussock Grassland Margins
- Proposed Damp Grassland
- Proposed Ground Nesting Bird Mitigation - Set Aside
- Proposed Ground Nesting Bird Mitigation - Continued Arable Land
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- Existing Hedge To Be Reinforced With Densely Spaced Native Tree Planting - Instant Screening
- Proposed Native Species Rich Hedgerow With Irregular Spaced Native Hedgerow Trees
- Proposed Secondary Native Species Rich Hedgerow With Densely Spaced Native Hedgerow Trees
- Proposed Solar Arrays
- Proposed Fenceline
- Proposed Access Tracks
- Proposed Inverters
- Proposed Substation
- Proposed Battery Energy Storage Systems
- Proposed Permissive Path For Pedestrians
- Proposed Permissive Path For Pedestrians And Horse Riders
- Existing Vegetation To Be Removed

Location Plan
1:80,000 @ A0

Burton Latimer
Irthlin
Wellingborough
mpton
A43
A45
Site A
Site A2
Site B
Site C & D
Site E.1
Site E.2
BESS
Site F.1
Site F.2
Site F.3
Site G

N

1:2,500 @A0

GREEN HILL SOLAR FARM

Figure 4.15
Green Hill Site E (2)
Landscape and Ecology Mitigation Plan
[EN010170/APP/GH6.4.4.15]
5(2)(a)

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GREEN HILL SOLAR FARM

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Key

Area For Solar Panels And Associated Development

Existing

- Existing Vegetation
- Existing Ditch Verge
- Existing Footpath
- Existing Bridleway
- Existing Byway Open To All Traffic
- Existing Restricted Byways
- Existing Buildings
- Existing Listed Buildings
- Existing Utilities

Proposed

- Existing Vegetation To Be Retained And Enhanced
- Proposed Meadow Creation (Beneath Panels)
- Proposed Tussock Grassland Margins
- Proposed Damp Grassland
- Proposed Ground Nesting Bird Mitigation - Set Aside
- Proposed Ground Nesting Bird Mitigation - Continued Arable Land
- Proposed Diverse Wildflower Meadow
- Proposed Low Density Scrub
- Proposed Native Woodland Copse/Shelter Belt (Scrub And Tree Planting)
- Dense Linear Tree Planting (Without Scrub Planting)
- Native Tree and Scrub Planting - Instant Screening
- Native Scrub Planting With Scattered Trees
- Proposed River Corridor Planting For Ecology
- Proposed River Corridor Planting For Flooding
- Proposed River Corridor Planting For Instant Screening
- Proposed Indicative locations For Ponds
- Potential Location For Proposed Cluster Of Wader Scrapes
- Existing Hedge To Be Reinforced With Irregularly Spaced Native Tree Planting
- Existing Hedge To Be Reinforced With Densely Spaced Native Tree Planting
- Existing Hedge To Be Reinforced With Densely Spaced Native Tree Planting - Instant Screening
- Proposed Native Species Rich Hedgerow With Irregular Spaced Native Hedgerow Trees
- Proposed Secondary Native Species Rich Hedgerow With Densely Spaced Native Hedgerow Trees
- Proposed Solar Arrays
- Proposed Fenceline
- Proposed Access Tracks
- Proposed Inverters
- Proposed Substation
- Proposed Battery Energy Storage Systems
- Proposed Permissive Path For Pedestrians
- Proposed Permissive Path For Pedestrians And Horse Riders
- Existing Vegetation To Be Removed

Location Plan
1:80,000 @ A0

Burton Latimer
Irthlingborough
Wellingborough
Rushden
Site A
Site A2
Site B
Site C & D
Site E.1
Site E.2
BESS
Site F.1
Site F.2
Site F.3
Site G
443
445

1:2,500 @A0

GREEN HILL SOLAR FARM

Figure 4.17
Green Hill Site F (1)
Landscape and Ecology Mitigation Plan
[EN010170/APP/GH6.4.4.17]
5(2)(a)

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GREEN HILL SOLAR FARM

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Key

Area For Solar Panels And Associated Development

Existing

- Existing Vegetation
- Existing Ditch Verge
- Existing Footpath
- Existing Bridleway
- Existing Byway Open To All Traffic
- Existing Restricted Byways
- Existing Buildings
- Existing Listed Buildings
- Existing Utilities

Proposed

- Existing Vegetation To Be Retained And Enhanced
- Proposed Meadow Creation (Beneath Panels)
- Proposed Tussock Grassland Margins
- Proposed Damp Grassland
- Proposed Ground Nesting Bird Mitigation - Set Aside
- Proposed Ground Nesting Bird Mitigation - Continued Arable Land
- Proposed Diverse Wildflower Meadow
- Proposed Low Density Scrub
- Proposed Native Woodland Copse/Shelter Belt (Scrub And Tree Planting)
- Dense Linear Tree Planting (Without Scrub Planting)
- Native Tree and Scrub Planting - Instant Screening
- Native Scrub Planting With Scattered Trees
- Proposed River Corridor Planting For Ecology
- Proposed River Corridor Planting For Flooding
- Proposed River Corridor Planting For Instant Screening
- Proposed Indicative locations For Ponds
- Potential Location For Proposed Cluster Of Wader Scrapes
- Existing Hedge To Be Reinforced With Irregularly Spaced Native Tree Planting
- Existing Hedge To Be Reinforced With Densely Spaced Native Tree Planting
- Existing Hedge To Be Reinforced With Densely Spaced Native Tree Planting - Instant Screening
- Proposed Native Species Rich Hedgerow With Irregular Spaced Native Hedgerow Trees
- Proposed Secondary Native Species Rich Hedgerow With Densely Spaced Native Hedgerow Trees
- Proposed Solar Arrays
- Proposed Fenceline
- Proposed Access Tracks
- Proposed Inverters
- Proposed Substation
- Proposed Battery Energy Storage Systems
- Proposed Permissive Path For Pedestrians
- Proposed Permissive Path For Pedestrians And Horse Riders
- Existing Vegetation To Be Removed

Location Plan
1:80,000 @ A0

Site A
Site A2
Site B
Site C & D
Site E.1
Site E.2
BESS
Site F.1
Site F.2
Site F.3
Site G
Burton Latimer
Wellingborough
A43
A509
A45

1:2,500 @A0

GREEN HILL SOLAR FARM

Figure 4.18
Green Hill Site F(2)
Landscape and Ecology Mitigation Plan
[EN010170/APP/GH6.4.4.18]
5(2)(a)

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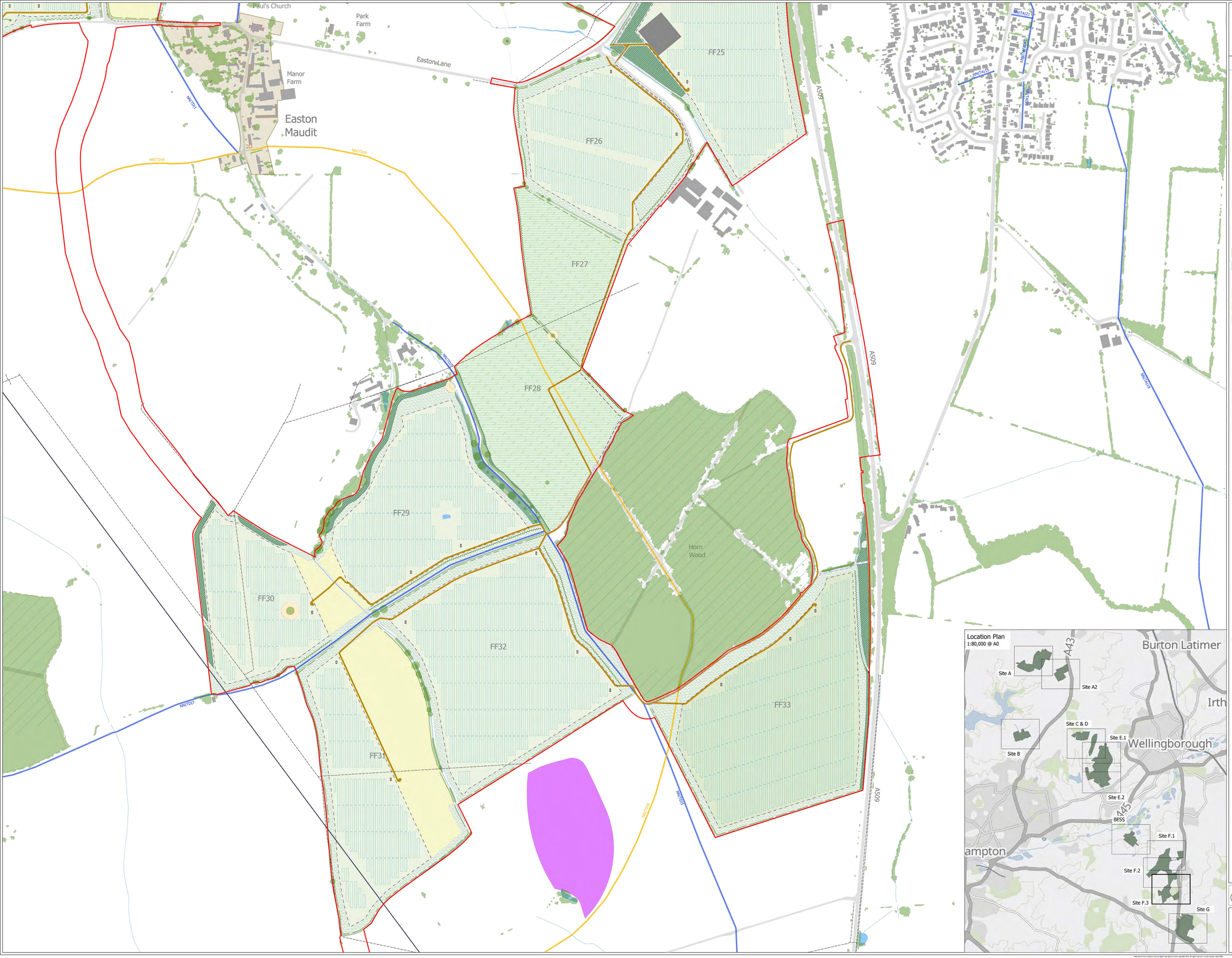

GREEN HILL SOLAR FARM

Lanpro

Key

Area For Solar Panels And Associated Development

Existing

- Existing Vegetation
- Existing Ditch Verge
- Existing Footpath
- Existing Bridleway
- Existing Byway Open To All Traffic
- Existing Restricted Byways
- Existing Buildings
- Existing Listed Buildings
- Existing Utilities

Proposed

- Existing Vegetation To Be Retained And Enhanced
- Proposed Meadow Creation (Beneath Panels)
- Proposed Tussock Grassland Margins
- Proposed Damp Grassland
- Proposed Ground Nesting Bird Mitigation - Set Aside
- Proposed Ground Nesting Bird Mitigation - Continued Arable Land
- Proposed Diverse Wildflower Meadow
- Proposed Low Density Scrub
- Proposed Native Woodland Copse/Shelter Belt (Scrub And Tree Planting)
- Dense Linear Tree Planting (Without Scrub Planting)
- Native Tree and Scrub Planting - Instant Screening
- Native Scrub Planting With Scattered Trees
- Proposed River Corridor Planting For Ecology
- Proposed River Corridor Planting For Flooding
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- Proposed Indicative locations For Ponds
- Potential Location For Proposed Cluster Of Wader Scrapes
- Existing Hedge To Be Reinforced With Irregularly Spaced Native Tree Planting
- Existing Hedge To Be Reinforced With Densely Spaced Native Tree Planting
- Existing Hedge To Be Reinforced With Densely Spaced Native Tree Planting - Instant Screening
- Proposed Native Species Rich Hedgerow With Irregular Spaced Native Hedgerow Trees
- Proposed Secondary Native Species Rich Hedgerow With Densely Spaced Native Hedgerow Trees
- Proposed Solar Arrays
- Proposed Fenceline
- Proposed Access Tracks
- Proposed Inverters
- Proposed Substation
- Proposed Battery Energy Storage Systems
- Proposed Permissive Path For Pedestrians
- Proposed Permissive Path For Pedestrians And Horse Riders
- Existing Vegetation To Be Removed

N

1:2,500 @A0

GREEN HILL SOLAR FARM

Figure 4.19
Green Hill Site F (3)
Landscape and Ecology Mitigation Plan
[EN10170/APP/GH6.4.4.19]
5(2)(a)

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GREEN HILL SOLAR FARM

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Key

Area For Solar Panels And Associated Development

Existing

- Existing Vegetation
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- Existing Byway Open To All Traffic
- Existing Restricted Byways
- Existing Buildings
- Existing Listed Buildings
- Existing Utilities

Proposed

- Existing Vegetation To Be Retained And Enhanced
- Proposed Meadow Creation (Beneath Panels)
- Proposed Tussock Grassland Margins
- Proposed Damp Grassland
- Proposed Ground Nesting Bird Mitigation - Set Aside
- Proposed Ground Nesting Bird Mitigation - Continued Arable Land
- Proposed Diverse Wildflower Meadow
- Proposed Low Density Scrub
- Proposed Native Woodland Copse/Shelter Belt (Scrub And Tree Planting)
- Dense Linear Tree Planting (Without Scrub Planting)
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- Native Scrub Planting With Scattered Trees
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- Proposed Indicative Locations For Ponds
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- Existing Hedge To Be Reinforced With Irregularly Spaced Native Tree Planting
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- Existing Hedge To Be Reinforced With Densely Spaced Native Tree Planting - Instant Screening
- Proposed Native Species Rich Hedgerow With Irregular Spaced Native Hedgerow Trees
- Proposed Secondary Native Species Rich Hedgerow With Densely Spaced Native Hedgerow Trees
- Proposed Solar Arrays
- Proposed Fenceline
- Proposed Access Tracks
- Proposed Inverters
- Proposed Substation
- Proposed Battery Energy Storage Systems
- Proposed Permissive Path For Pedestrians
- Proposed Permissive Path For Pedestrians And Horse Riders
- Existing Vegetation To Be Removed

1:2,500 @A0

GREEN HILL SOLAR FARM

Figure 4.20
Green Hill Site G
Landscape and Ecology Mitigation Plan
[EN010170/APP/GH6.4.4.20]
5(2)(a)

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GREEN HILL SOLAR FARM

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Key

Area For Solar Panels And Associated Development

Existing

- Existing Vegetation
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- Existing Footpath
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- Existing Utilities

Proposed

- Existing Vegetation To Be Retained And Enhanced
- Proposed Meadow Creation (Beneath Panels)
- Proposed Tussock Grassland Margins
- Proposed Damp Grassland
- Proposed Ground Nesting Bird Mitigation - Set Aside
- Proposed Ground Nesting Bird Mitigation - Continued Arable Land
- Proposed Diverse Wildflower Meadow
- Proposed Low Density Scrub
- Proposed Native Woodland Copse/Shelter Belt (Scrub And Tree Planting)
- Dense Linear Tree Planting (Without Scrub Planting)
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- Proposed River Corridor Planting For Flooding
- Proposed River Corridor Planting For Instant Screening
- Proposed Indicative Locations For Ponds
- Potential Location For Proposed Cluster Of Wader Scrapes
- Existing Hedge To Be Reinforced With Irregularly Spaced Native Tree Planting
- Existing Hedge To Be Reinforced With Densely Spaced Native Tree Planting
- Existing Hedge To Be Reinforced With Densely Spaced Native Tree Planting - Instant Screening
- Proposed Native Species Rich Hedgerow With Irregular Spaced Native Hedgerow Trees
- Proposed Secondary Native Species Rich Hedgerow With Densely Spaced Native Hedgerow Trees
- Proposed Solar Arrays
- Proposed Fenceline
- Proposed Access Tracks
- Proposed Inverters
- Proposed Substation
- Proposed Battery Energy Storage Systems
- Proposed Permissive Path For Pedestrians
- Proposed Permissive Path For Pedestrians And Horse Riders
- Existing Vegetation To Be Removed
- Proposed Acoustic Barrier North Of BESS 2 Comprising Bund With Scattered Scrub And Trees And Acoustic Barrier

Location Plan
1:80,000 @ A0

Burton Latimer
Irthli
Wellingborough
mpton
A43
A45
Site A
Site A2
Site B
Site C & D
Site E.1
Site E.2
BESS
Site F.1
Site F.2
Site F.3
Site G

N

1:2,500 @A0

GREEN HILL SOLAR FARM

Figure 4.16.1
Green Hill BESS Option A
Landscape and Ecology Mitigation Plan
[EN010170/APP/GH6.4.4.16.1]
5(2)(a)

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APPENDIX 1.3: SURVEY EQUIPMENT

SPECTRA GEOSPATIAL

SP80

GNSS CHARACTERISTICS
- 240 GNSS channels
  - GPS L1C/A, L1P(Y), L2C, L2P(Y), L5
  - GLONASS L1C/A, L1P, L2C/A, L2P, L3
  - Beidou (Phase II) B1, B2
  - Galileo E1, E5a, E5b
  - QZSS L1C/A, L1-SAIF, L1C, L2C, L5
  - SBAS L1C/A, L5 (WAAS, EGNOS, MSAS, GAGAN, SDCM)
  - IRNSS L5
- Support for Trimble RTX™ real-time correction services
- Patented Z-Blade technology for optimal GNSS performance
  - Full utilization of signals from all 6 GNSS systems (GPS, GLONASS, Beidou, Galileo, QZSS and SBAS)
  - Enhanced GNSS-centric algorithm: fully independent GNSS signal tracking and optimal data processing; including GPS-only, GLONASS-only or Beidou-only solution (Autonomous to full RTK)
  - Fast Search engine for quick acquisition and re-acquisition of GNSS signals
- Patented SBAS ranging for using SBAS code & carrier observations and orbits in RTK processing
- Patented Strobe™ Correlator for reduced GNSS multi-path
- Up to 20 Hz real-time raw data (code & carrier and position output)
- Supported data formats: ATOM, CMR, CMR+, RTCM 2.1, 2.2, 2.3, 3.0, 3.1 and 3.2 (including MSM), CMRx and aCMRx (rover only)
- NMEA 0183 messages output

REAL-TIME ACCURACY (RMS) [1][2][3]

SBAS (WAAS/EGNOS/MSAS/GAGAN)
- Horizontal: < 50 cm
- Vertical: < 85 cm

Real-Time DGPS position
- Horizontal: 25 cm + 1 ppm
- Vertical: 50 cm + 1 ppm

Real-Time Kinematic Position (RTK)
- Horizontal: 8 mm + 1 ppm
- Vertical: 15 mm + 1 ppm

Network RTK (5)
- Horizontal: 8 mm + 0.5 ppm
- Vertical: 15 mm + 0.5 ppm

REAL-TIME PERFORMANCE
- Instant-RTK™ Initialization
  - Typically 2 sec. for baselines < 20 km
  - Up to 99.9% reliability
- RTK Initialization range: over 40 km

POST-PROCESSING ACCURACY (RMS) [1][2]

Static & Fast Static
- Horizontal: 3 mm + 0.5 ppm
- Vertical: 5 mm + 0.5 ppm

High-Precision Static [6]
- Horizontal: 3 mm + 0.1 ppm
- Vertical: 3.5 mm + 0.4 ppm

DATA LOGGING CHARACTERISTICS

Recording Interval
- 0.05 - 999 seconds

PHYSICAL CHARACTERISTICS

Size
- 22.2 x 19.4 x 7.5 cm (8.7 x 7.6 x 3.0 in)

Weight
- 1.17 kg (2.57 lb)

User Interface
- Graphical PHOLED display
- WEB UI (accessible via WIFI) for easy configuration, operation, status, and data transfer

I/O Interface
- RS232 serial link
- USB 2.0/UART
- Bluetooth 2.1 + EDR
- WIFI (802.11 b/g/n)
- 3.5G quad-band GSM (850/900/1800/1900 MHz) / penta-band UMTS module (800/850/900/1800/2100 MHz)

Memory
- 2 GB internal memory NAND Flash (1.5 GB user data)
- Over a year of 15 sec. raw GNSS data from 14 satellites
- SD/SDHC internal memory card (up to 32GB)

Operation
- RTK rover & base
- RTK network rover: VRS, FKP, MAC
- NTRIP, Direct IP
- CSD mode
- Post-processing
- RTK bridge
- UHF repeater
- UHF networking
- Trimble RTX (cellular/IP)

Environmental Characteristics
- Operating temperature: -40° to +65°C (-40° to +149°F) [4]
- Storage temperature: -40° to +85°C (-40° to +185°F) [5]
- Humidity: 100% condensing
- IP67 waterproof, sealed against sand and dust
- Drop: 2m pole drop on concrete
- Shock: EN300 019
- Vibration: MIL-STD-810F

Power Characteristics
- 2 Li-Ion hot-swappable batteries: 36.9 Wh (2 x 7.4 V, 2600 mAh)
- Battery life time (two batteries): 10 hrs. (GNSS On, and GSM or UHF Rx On)
- External DC power: 9-28 V

Standard System Components
- SP80 receiver
- 2 Li-Ion batteries
- Dual battery charger, power supply and international power cord kit
- Tape measure (3.6 m / 12 ft)
- 7 cm pole extension
- USB to mini-USB cable
- Hard case
- 2 year warranty

Optional System Components
- SP80 UHF Kit (410-470 MHz 2W TRX)
- SP80 Field Power Kit
- SP80 Office Power Kit
- Data collectors
  - Ranger 3
  - T41
  - MobileMapper 50
  - Nomad 1050
- Field software
  - Survey Pro
  - FAST Survey
  - Survey Mobile (Android)
  - SPace control app for 3rd party devices (Android)

1. Accuracy and TTFF specifications may be affected by atmospheric conditions, signal multipath, satellite availability and constellation availability and quality.
2. Performance values assume minimum of five satellites, following the procedures recommended in the product manual. High multi-path areas, high PDOP values and periods of severe atmospheric conditions may degrade performance.
3. Long baselines, long occupations, precise ephemeris used.
4. At very low temperatures UHF module should not be used in the transmitter mode.
5. Without batteries. Batteries can be stored up to +70°C.
6. Network RTK PPM values are referenced to the closest physical base stations.
7. Receiver initialization time varies based on GNSS constellation health, level of multipath, and proximity to obstructions such as trees and buildings.

TRIMBLE RTX INITIALIZATION [1][2][3]

	Horizontal (RMS)	Initialization	GNSS
CENTERPOINT® RTX	<4 cm	<30 mins, <5 mins	L1+L2

CONTACT INFORMATION:

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Westminster, CO 80021 • USA
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Asia-Pacific
80 Marine Parade Road
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Please visit spectrageospatial.com for the latest product information and to locate your nearest distributor. Specifications and descriptions are subject to change without notice.

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APPENDIX 1.3: SURVEY EQUIPMENT

SP80 GNSS RECEIVER

The Spectra Geospatial SP80 is a next generation GNSS receiver that combines decades of GNSS RTK technology with revolutionary new GNSS processing. Featuring the new 240-channel "6G" chipset combined with the patented Z-Blade technology, the SP80 system is optimized for tracking and processing signals from all GNSS constellations in challenging environments.

As the most connected GNSS receiver in the industry, the SP80 offers a unique combination of integrated 3.5G cellular, Wi-Fi and UHF communications with SMS, email and anti-theft technology.

These powerful capabilities, packaged in an ultra-rugged housing and patented antenna design with unlimited operation time (hot-swappable batteries), make SP80 an extremely versatile turnkey solution.

KEY FEATURES

- Patented Z-Blade technology
- 240-channel 6G ASIC
- Hot-swappable batteries
- Internal TRx UHF radio
- 3.5G cellular modem
- Built-in WiFi communication
- SMS and e-mail alerts
- Anti-theft technology
- Backup RTK
- RTK Bridge
- eLevel technology
- Trimble RTX correction services

Patented inside-the-rod mounted UHF antenna design

UNIQUE 6G GNSS-CENTRIC TECHNOLOGY

Patented Z-Blade processing technology running on a next generation Spectra Geospatial 240-channel 6G ASIC fully utilizes all 6 GNSS systems: GPS, GLONASS, BeiDou, Galileo, QZSS and SBAS. Unlike GPS-centric technology which requires a minimum number of GPS satellites for GNSS processing, Z-Blades unique GNSS-centric capability optimally combines GNSS signals without dependency on any specific GNSS system: this allows SP80 to operate in GPS-only, GLONASS-only or BeiDou-only mode if needed. In addition, SP80 supports the recently approved RTCM 3.2 Multiple Signal Messages (MSM), a standardized definition for broadcasting all GNSS signals from space, regardless of their constellation. This protects the surveyor's investment well into the future by providing superior performance and improved productivity as new signals become available.

SMS AND EMAIL MESSAGING

SP80 has a unique combination of communication technologies including an integrated 3.5G GSM/UMTS modem, Bluetooth and Wi-Fi connectivity, and optional internal UHF transmit radio. The cellular modem may be used for SMS (text message) and e-mail alerts as well as regular Internet or VRS connectivity. SMS (text messages) can be used to monitor and configure the receiver. Likewise, SP80 can use all available RTK correction sources and connect to the Internet from the field using WiFi hotspots, where available. The internal UHF transmit/receive radio allows for quick and easy setup as a local base station. This saves time and increases the surveyor's efficiency.

ANTI-THEFT PROTECTION

A unique anti-theft technology secures SP80 when installed as a field base station in remote or public places and can detect if the product is disturbed, moved or stolen. This technology allows the surveyor to lock the device to a specific location and make it unusable if the device is moved elsewhere. In this case, SP80 will generate an audio alert and show an alert message on its display. Furthermore, a SMS or e-mail will be sent to the surveyor's mobile phone or computer and provides the receiver's current coordinates allowing tracking of its position and facilitating recovery of the receiver. SP80's anti-theft technology provides surveyors with remote security and peace of mind.

TRIMBLE RTX CAPABLE

Trimble RTX correction services offer a wide range of accuracy requirements ranging from better than 4 cm accuracies, up to sub-meter accuracies, without the need of an RTK base station. Trimble RTX is available for the SP80 GNSS receiver via cellular/IP delivery. The premium service, CenterPoint® RTX is the most accurate satellite-delivered correction service available today. With the SP80 GNSS receiver and a Trimble RTX correction, achieve high-accuracy positioning nearly anywhere in the world.

THE MOST POWERFUL TOOL FOR RELIABLE FIELD USE

The SP80's rugged housing, created by Spectra Geospatial's engineering design lab in Germany, incorporates a host of practical innovations. Dual hot-swappable batteries can be easily exchanged in the field as a one hand operation for an interruption-free working day, ensuring surveyors remain productive until the job is done. The impact-resistant glass-fiber reinforced casing, designed to withstand 2m pole drops and waterproof to IP67, ensures that SP80 can handle the toughest outdoor conditions. The patented UHF antenna, set inside the rugged carbon fiber rod, extends the range of RTK radio performance at the same time as armoring protection. The sunlight-readable display offers instant access to key information like the number of satellites, RTK status, battery charge and available memory. With eLevel technology, the user is able to focus in one place when leveling and measuring as well as automatically store measurements when the receiver is level. These powerful design features combine to make SP80 the most capable, most reliable GNSS receiver, backed by a comprehensive standard 2 year warranty.

THE SPECTRA GEOSPATIAL EXPERIENCE

With the most advanced and rugged field data collectors from Spectra Geospatial, surveyors get maximum productivity and reliability every day. Spectra Geospatial Survey Pro or FAST Survey software is specifically tailored for the SP80 GNSS receiver providing easy-to-use, yet powerful GNSS workflows, letting the surveyor concentrate on getting the job done. Spectra Geospatial Survey Office Software provides a complete office suite for post-processing GNSS data and adjusting survey data, as well as exporting the processed results directly back to the field or to engineering design software packages. Combined with Spectra Geospatial field and office software, SP80 is a very powerful and complete solution.

APPENDIX 1.3: SURVEY EQUIPMENT

TOUGHPAD FZ-G1

Panasonic recommends Windows.

SOFTWARE
- Windows 10 Pro 64 bit
- Panasonic Utilities (including Dashboard), Recovery Partition

DURABILITY
- MIL-STD-810G certified (4' drop, shock, vibration, rain, dust, sand, altitude, freeze/thaw, high/low temperature, temperature shock, humidity, explosive atmosphere)
- IP65 certified sealed all-weather design
- Optional class I division 2, groups ABCD certified model
- Solid state drive heater
- Magnesium alloy chassis encased with ABS and elastomer corner guards
- Optional hand strap or rotating hand strap
- Port covers
- Raised bezel for LCD impact protection
- Pre-installed replaceable screen film for LCD protection

CPU
- Intel® Core™ i5-6300U vPro™ Processor
  - 2.4 GHz up to 3.0 GHz with Intel® Turbo Boost Technology
  - Intel Smart Cache 3MB

STORAGE & MEMORY
- 8GB DDR3L SDRAM[4,5]
- 256GB solid state drive (SSD) with heater[4,5]
- Optional 512GB
  - up to 64GB additional storage with optional microSDXC card slot

DISPLAY
- 10.1" WUXGA 1920 x 1200 with LED backlighting
- 10-point capacitive multi touch + Waterproof Digitizer pen daylight-readable screen
  - 2-800 nit
  - IPS display with direct bonding
  - Anti-reflective and anti-glare screen treatments
  - Ambient light sensor, digital compass, gyro and acceleration sensors
  - Automatic screen rotation
  - Intel® HD Graphics 520 (Built-in CPU) video controller
- Concealed mode (configurable)

AUDIO
- Integrated microphone
- Realtek high-definition audio
- Integrated speaker
- On-screen and button volume and mute controls

KEYBOARD & INPUT
- 10-point gloved multi touch + digitizer screen
  - Supports bare-hand touch and gestures and electronic waterproof stylus pen
  - Supports glove mode and wet-touch mode
- 7 tablet buttons (2 user-definable)
- Integrated stylus holder
- On-screen QWERTY keyboard

CAMERAS
- 720p webcam with mic
- 8MP rear camera with autofocus and LED light

EXPANSION
- Optional MicroSDXC3

INTERFACE

Docking connector	24-pin
HDMI	Type A
Headphones/speaker	Mini-jack stereo
Optional Serial Dongle[3]	D-sub 9-pin
USB 3.0 (x 1)[2]	4-pin
Optional second USB 2.0[3]	4-pin
Optional 10/100/1000 Ethernet[3]	RJ-45

WIRELESS
- Optional integrated 4G LTE multi carrier mobile broadband with satellite GPS
- Optional GPS (u-blox NEO M8N)[3]
- Intel® Dual Band Wireless-AC 8260 (IEEE802.11a/b/g/n/ac)
- Bluetooth v4.1, Classic mode/ Low Energy mode, Class 1 (Windows 10 pro 64-bit)
- Security
  - Authentication: LEAP, WPA, 802.1x, EAP-TLS, EAP-FAST, PEAP
  - Encryption: CKIP, TKIP, 128-bit and 64-bit WEP, Hardware AES
- Dual high-gain antenna pass-through

POWER SUPPLY
- Li-Ion battery pack:
  - Standard battery: Li-ion 11.1 V, 4200 mAh (typ.), 4080 mAh (min.)
  - Optional long life battery[7]: Li-ion 10.8V, 9300mAh(typ.), 8700mAh (min.)
- Battery operation[1]:
  - Standard battery: 14 hours
  - Optional long life battery[7]: 28 hours
- Battery charging time[1]:
  - Standard battery: 2.5 hours off, 3 hours on
  - Optional long life battery[7]: 3 hours off, 4 hours on
- Optional bridge battery[8] (1 minute swap time)

POWER MANAGEMENT
- Suspend/Resume Function, Hibernation, Standby

SECURITY FEATURES
- Password Security: Supervisor, User, Hard Disk Lock
- Kensington cable lock slot
- Trusted platform module (TPM) security chip v.2.0[12]
- Computrace® theft protection agent in BIOS8
- Optional Insertable SmartCard reader[2,7]
- Optional Contactless SmartCard/HF RFID reader[2]
  - ISO 15693 and 14443 A/B compliant

WARRANTY
- 3-year limited warranty, parts and labor

DIMENSIONS & WEIGHT[9]
- 10.6"(L) x 7.4"(W) x 0.8"(H)
- 2.4 lbs. (Standard battery)
- 3.0 lbs. (optional long life battery)[7]

INTEGRATED OPTIONS[10]
- 4G LTE multi carrier mobile broadband with satellite GPS
- Choice of 1D/2D barcode reader (EA11 or EA21), GPS, Serial Dongle, Ethernet, MicroSDXC or second USB 2.0 port[3]
- Choice of bridge battery, magstripe reader, insertable SmartCard reader, insertable SmartCard reader with bridge battery, contactless SmartCard/RFID HF reader or UHF 900MHz RFID reader (EPC Gen 2)[2,7]

ACCESSORIES[10]

AC Adapter (3-prong)	CF-AA6413CM
Standard Battery Pack	FZ-VZSU84A2U
Long Life Battery Pack[7]	FZ-VZSU88U
Long Life Battery Bundle (includes rotating hand strap and corner guard set)	FZ-BNDLG1LL1ST1CG4
Single Battery Charger Bundle	FZ-BNDLG1BATCHRG
LIND 3-Bay Battery Charger	FZ-LND3BAYG1
LIND Car Adapter 120W	CF-LNDDC120
LIND Car/AC Adapter 90W (with USB port)	CF-LNDACDC90
LIND Car Adapter 90W MIL-STD	CF-LNDMLDC90
Tall Corner Guard Set	FZ-WCGG111
Rotating Hand Strap and Tall Corner Guard Set Bundle	FZ-BNDLG1ST1CG4
ToughMate G1 Always-On Case (with hand strap)	TBCG1AONL-P
ToughMate G1 Professional Portfolio	TBCG1PFLIO-BLK-P
ToughMate G1 "X" Hand Strap	TBCG1XSTP-P
Desktop Cradle	FZ-VEBG11AU
Vehicle Docks (no pass-through)	
– Gamber-Johnson	7160-0486-00-P
– Havis with LIND power supply	CF-H-PAN-702-P
Vehicle Docks (dual pass-through)	
– Gamber-Johnson	7160-0486-02-P
– Havis with LIND power supply	CF-H-PAN-702-2-P
Cradlepoint Router	
– Verizon	CP-IBR1100LPE-VZ
– AT&T	CP-IBR1100LPE-AT
Replacement Digitizer Pen Waterproof	FZ-VNPG11U-S
Tether	FZ-VNTG11U
10.1" LCD Protective Film	FZ-VPFG11U

Please consult your reseller or Panasonic representative before purchasing.

Caution: Do not expose bare skin to this product when handling this unit in extreme hot or cold environments.

[1] Approximate time. Battery operation and recharge times will vary based on many factors, including screen brightness, applications, features, power management, battery conditioning and other customer preferences. Battery testing results from MobileMark 2007.

[2] Bridge battery, magstripe reader, insertable SmartCard reader, insertable SmartCard reader with bridge battery, contactless SmartCard reader and UHF RFID reader are mutually exclusive. Please note, USB 3.0 port cannot be accessed when the unit is equipped with the magstripe reader, but optional USB 2.0 port can be accessed.

[3] GPS, Serial Dongle, Ethernet, MicroSDXC and second USB port are mutually exclusive options.

[4] 1GB = 1,000,000,000 bytes.

[5] Total usable memory will be less depending upon actual system configuration.

[6] The size of the VRAM cannot be set by the user and varies by operating system as well as the size of the RAM. Windows 7 max. VRAM is 1555MB.

[7] Magstripe reader, insertable SmartCard reader, insertable SmartCard reader with bridge battery and UHF RFID reader include tall corner guards and rotating hand strap. Bridge battery (without SmartCard reader) includes medium corner guards and rotating hand strap.

[8] Requires software and activation to enable theft protection.

[9] Length measurements do not include protrusions. Weight varies with options and digitizer pen.

[10] Accessories and Integrated Options may vary depending on your configuration. Visit the Panasonic website for more accessories and details.

[11] Hazardous location certifications may not apply to all configurations. Consult your Panasonic representative for availability.

[12] TPM 1.2 available upon request - please contact your reseller or Panasonic representative.

1.800.662.3537
panasonic.com/toughpad/G1

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APPENDIX 1.4: CAMERA EQUIPMENT (CANON 5D MARK IV)

Canon

EOS 5D Mark IV

APPENDIX 1.4: CAMERA EQUIPMENT (SIGMA 50mm f/1.4)

Design detail

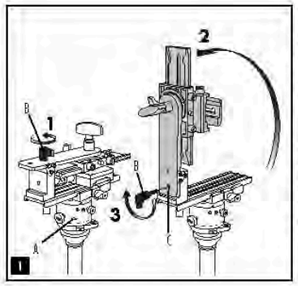
Incredible resolution ideal for the high-megapixel era. Introducing the new benchmark large-aperture standard lens

In 2008, Sigma released a large diameter standard lens designed for digital SLRs, "SIGMA 50mm F1.4 EX DG HSM". At that time, products for film cameras were prevalent, yet we spent enormous effort to set a new benchmark for the 50mm lens that optimizes the characteristics of digital cameras, such as compensating peripheral brightness, controlling the point images in the corners, and improving the image drawing, not only around the focusing point, but also other areas in the image.

APPENDIX 1.4: CAMERA EQUIPMENT (MANFROTTO 303 SPH)

INSTRUCTIONS

303SPH
SPHERICAL "VR" HEAD



The spherical "VR" head is designed to allow virtual scenes to be created by Computer from a various panoramic sequences of digital or digitized photographs, taken at different vertical angles.

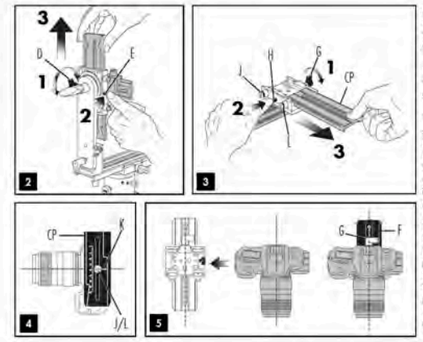
There are 4 requirements to achieve good panoramic sequence shots:
1. Accurately levelling of the panoramic axis
2. A Panoramic head that enables you to choose the angle of rotation between one shot and the next.
3. The ability to position the camera in the "Nodal Point" of the lens (the front lens) is exactly above the panoramic axis of rotation, to eliminate any parallax problems between the near and distant objects in the scene.
4. An additional rotating axis that enables you to shoot several panoramic sequences at different vertical angles in order to achieve a complete spherical scene

The spherical "VR" head comprises three main modules that perform the functions mentioned above in points 2, 3 and 4.

Unless your tripod has a built-in levelling device (such as the Manfrotto Mobile tripod's 50mm half ball), you will need to use one of the levelling accessories available from the Manfrotto range to ensure accurate levelling of the head (see point 1).

SET UP 1
Fix the levelling device (not supplied) to the tripod, then fix the "VR" head on the levelling device via locale attachment "A".
Completely remove knob "B", rotate the bracket into the vertical position as shown in fig. 1 and lock it in place by screwing the knob "B" into hole "C".

2

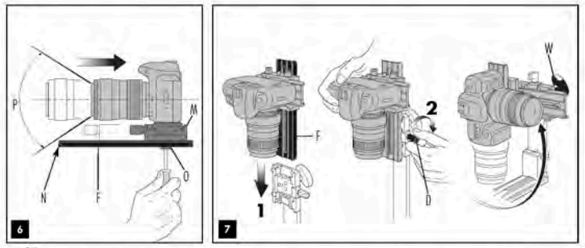


MOUNTING THE CAMERA 2 3 4 5
Remove the top assembly (fig. 2) by releasing knob "D". To slide it completely out of the housing, push safety button "E".

Remove camera plate "CP" (fig. 3) by releasing knob "G". To slide it completely out of the housing, push safety button "H".

You will find two screws attached to the top assembly: screw "J" (fig. 3) is 1/4 in. "L" is 3/8 in.
Depending on your camera tripod attachment, choose the correct screw and use it to fix your camera to plate "CP" (fig. 4). Use a coin or screwdriver to lock: take care to align the lens with the centre of the plate indicated by letter "K".
Mount the camera on the top assembly as show in figure 5 by sliding the camera + plate into the housing following the direction shown by the "insert" arrow. Lock in place using knob "G". before locking, take care to align the lens with the long plate "F" – the lens axis must be perfectly above the slot of the plate as shown in figure 5.
The angle of the lever on the ratchet knob "G" can be repositioned as required without affecting the lock itself. Pull the lever outwards, rotate as required and release and it will locate in the new position.

3



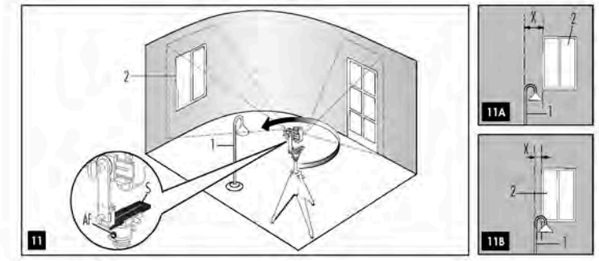
NOTE 6
The position of the housing "M" relative to the long plate "F" will need to be adjusted: loosen screw "O" to slide the housing. The ideal position is with the camera body as far back on the plate as it can go before the front edge "N" of the long plate "F" becomes visible in the camera's field of view "P".

MOUNT THE CAMERA ON THE HEAD 7
Mount the whole top assembly + camera on the head as shown in figure 7 by sliding the long plate "F" into its housing and locking it by screwing knob "D", then unscrew knob "W" and move the camera on the vertical plane.

4

APPROXIMATE POSITIONING OF THE "NODAL POINT" 9 10
(Ref. figure 9): Align the optical axis of the camera "A" with the panoramic axis of rotation "B" using "CENTER" marking on plate as a guide, by loosening the knob "V" and moving long plate "F" (assembly "Ref. figure 9"). Align the longitudinal plane by loosing the knob "D" and adjusting the plate "F" until the front lens "F" is placed above the panoramic axis of rotation "B".
At this point, the position is acceptably close to Nodal Pt positioning at hyperfocal or outdoor shots.

5

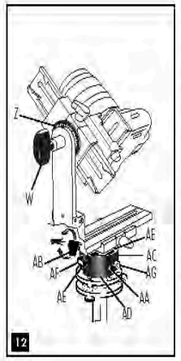


11 11A 11B

- LATERAL POSITIONING 11
(Ref. figure 11): Choose a frame that contains both a near object "1" and a distant object "2" situated along the same horizontal line of vision.
1. (See figure 11A and 11B): unscrew knob "AF" and move the camera around the axis so that the two objects are first on the left hand side of the frame, then on the right. Check whether the horizontal gap "X" between the two objects varies in the two frames: the more constant the distance remains, the more accurately the "Nodal Point" has been positioned.
2. For optimum results, make minor adjustments by moving plate "S".

Once the right position is achieved it is VERY USEFUL to memorize it by noting the position of the plate "S" on the index on the graduated scale.

7



12

INSTRUCTIONS FOR SPHERICAL PANORAMIC SHOOTING 12
A special panoramic scene is obtained by adding together panoramics sequences taken at different angles from the horizontal. First you will need to choose the number of panoramics sequences you will need to complete the sphere depending on the angle of the lens you will be using.
Before starting with the panoramic sequence, choose the initial vertical angle using the round scale "Z" (fig. 12).
Unscrew locking knob "AF" or remove it completely if you do not need (it must be used to completely stop rotation when the head is used in a non-vertical position, so to avoid any accidental movement of the head in any position).

Decide the number of shots or the angle of rotating between each shot for the first panoramics sequence (see the chart below):

Angle	90°	60°	45°	36°	30°	24°	20°	15°	10°	5°
n. shots	4	6	8	10	12	15	18	24	36	72

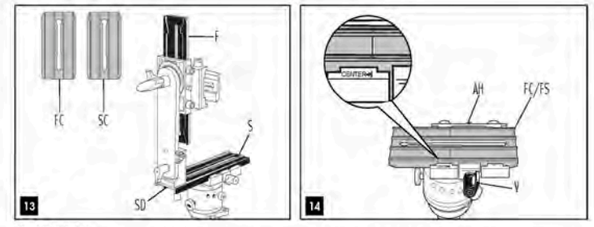
- Screw knob "AG" into the selected setting holes "AA".
- Release locking lever "AB" and rotate the camera on top plate "AE" to the position of the first shot.
- Hold the camera in position and rotate the central barrel "AC" until the first "click stop" is reached, then lock lever "AB".
- Take the first shot and then rotate the camera to the next "click stop" without releasing "AB" and take the next shot.
  Continue this process until the start position is reached.

Once you have completed the first complete panoramic sequence, you can start in the other panoramic sequences needed to cover the sphere: change the vertical angle using knob "W" and round scale "Z", and repeat the operations described above for each full sequence.

The base of the head "AD" has graduated scale markings from 0 to 360° and a reference index "AE" on the central barrel "AC". This is to be used to set angles not on the chart. To use the head in this way, unlock knob "AB" to disengage the "click stop" during rotation of central barrel "AC" and use the locking knob "W" to lock the position during shooting.

NOTE: The angle of the lever on the ratchet knob "AB" can be repositioned as required without affecting the lock itself. Pull the lever outwards, rotate as required and release and it will locate in the new position.

8



13 14

ADDITIONAL PLATES 13
If you have a very compact camera we suggest you to use the short plates "SC" (fig. 13) and "FC" (supplied with the head) instead of the two long plates "F" and "S" in order to reduce space and weight of the system.
To replace the plate "S" unscrew screw "SD" (fig. 13)
To replace the plate "F", please refer to fig. 6 and unscrew screw "O".

USE OF THE KIT AS AN OBJECT PANORAMA TURNTABLE 14
The head can also be used as a turntable, useful for shooting object panoramas. For this use, loosen knob "V" and push button "AH" to slide the lower plate "S" out of the housing on the panoramic rotation base unit. In place of the long plate and top assembly; mount one of the two shorter plates supplied as a base for your object. The plate housing has a "center" mark to help you position your object accurately above the center of panoramic rotation.

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