RWE Renewables UK Dogger Bank South (West) Limited

RWE Renewables UK Dogger Bank South (East) Limited

Dogger Bank South Offshore Wind Farms

Environmental Statement

Volume 7

Chapter 23 – Landscape and Visual Impact Assessment

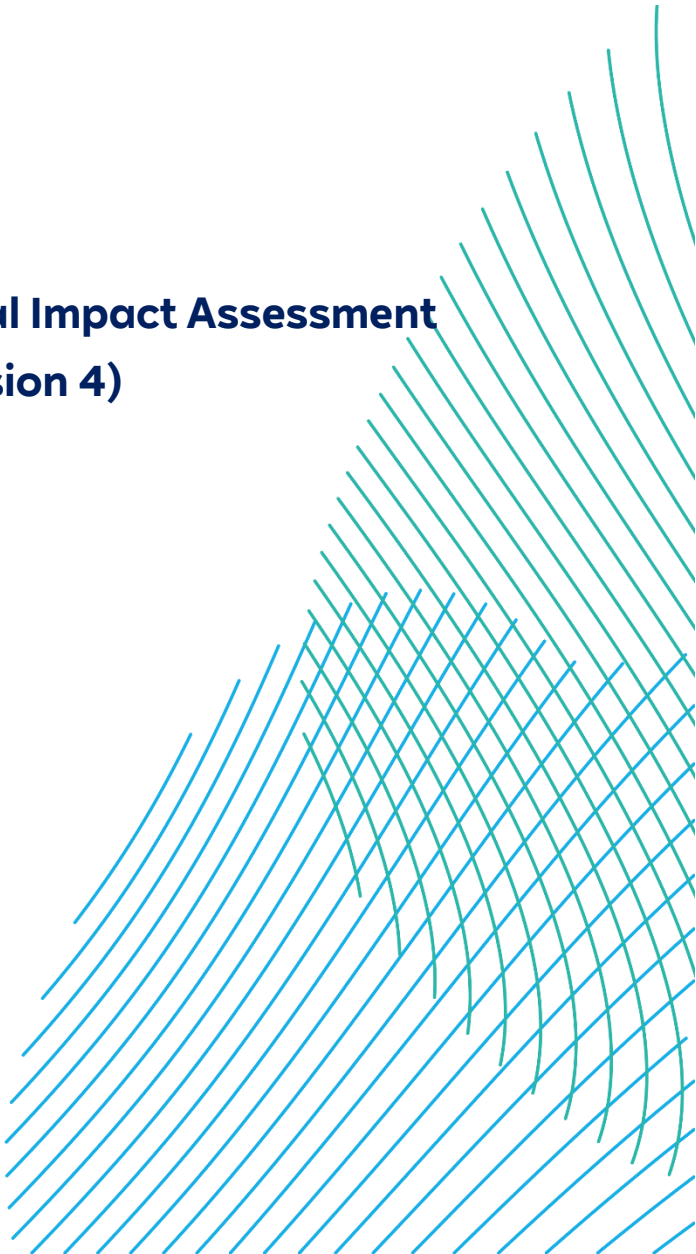
Figure 23-1 to Figure 23-17 (Revision 4)

April 2025

Application Reference: 7.23.1

APFP Regulation: 5(2)(a)

Revision: 04



Unrestricted

Company:	**RWE Renewables UK Dogger Bank South (West) Limited and RWE Renewables UK Dogger Bank South (East) Limited**	Asset:	**Development**
Project:	**Dogger Bank South Offshore Wind Farms**	Sub Project/Package:	**Consents**
Document Title or Description:	Environmental Statement – Chapter 23 – Figure 23-1 to Figure 23-17 (Revision 4)		
Document Number:	004300167-04	Contractor Reference Number:	PC2340-RHD-ON-ZZ-RP-Z-0106

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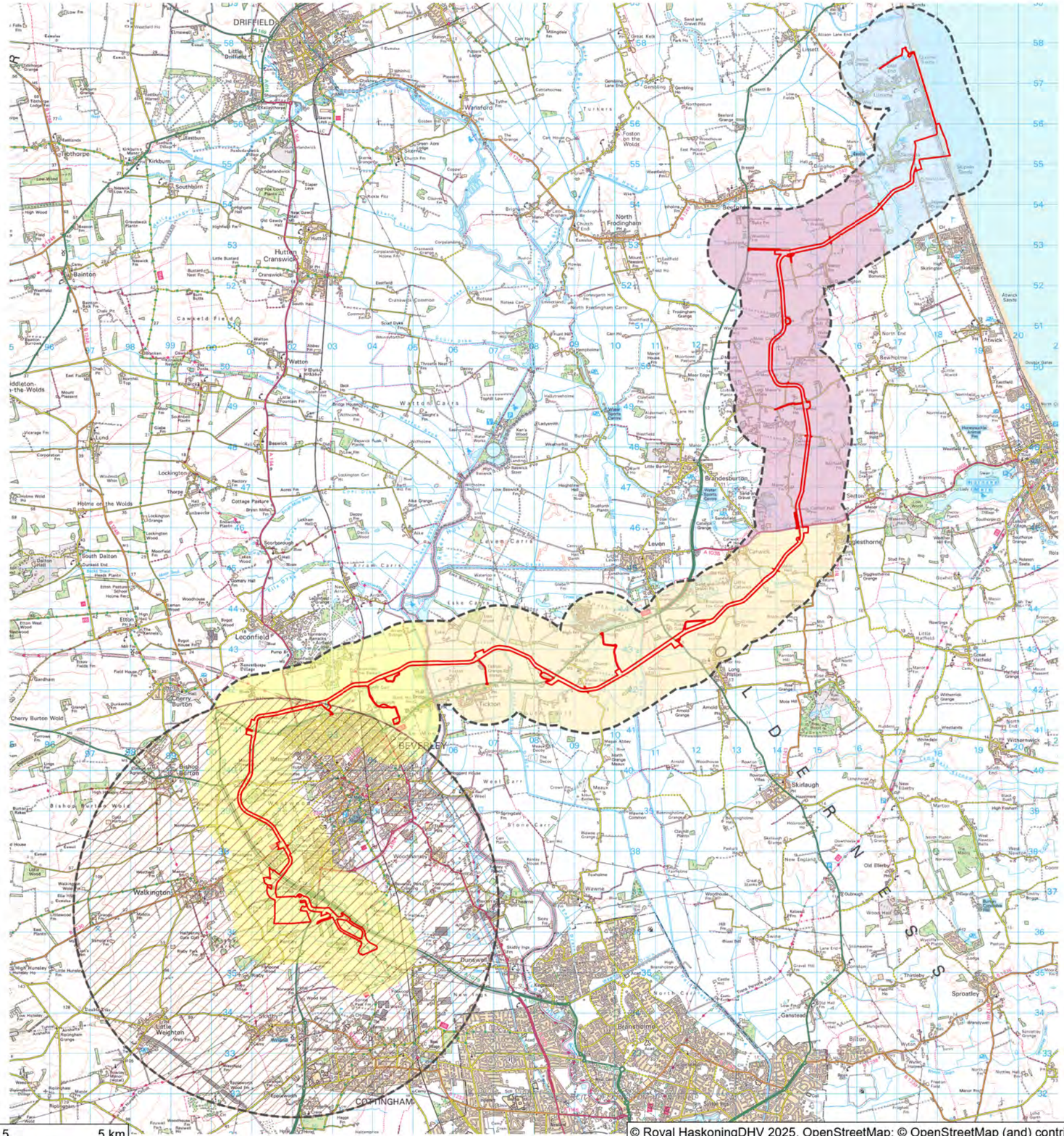
Rev No.	Date	Status/Reason for Issue	Author	Checked by	Approved by
01	June 2024	Final for DCO Application	LUC	RWE	RWE
02	October 2024	Submission at Pre-Examination Procedural Deadline	LUC	RWE	RWE
03	February 2025	Submission for Deadline 2	LUC	RWE	RWE
04	April 2025	Submission for Deadline 4	LUC	RWE	RWE

Revision Change Log			
Rev No.	**Page**	**Section**	**Description**
01	N/A	N/A	Submitted for DCO Application.
02	6	Figure 23-2b	Figure 23-2b created to show the topography data in relation to the LVIA Study Area to address the Rule 6 Errata.
02	10	Figure 23-6	Amended figure legend to clearly identify the area to be returned to agriculture as requested in the Rule 6 Errata.
03	5	Figure 23-1	Figure 23-1 has been updated to reflect **Project Change Request 2 [AS-152]** change to the Onshore Order Limits.
03	6, 7	Figure 23-2	Figure 23-2 has been updated to reflect **Project Change Request 2 [AS-152]** change to the Onshore Order Limits and to show the additional Viewpoint 9 and 10.
03	8	Figure 23-3	Figure 23-3 has been updated to reflect **Project Change Request 2 [AS-152]** change to the Onshore Order Limits.
03	9	Figure 23-4	Figure 23-4 has been updated to reflect **Project Change Request 2 [AS-152]** change to the Onshore Order Limits.
03	10	Figure 23-5	Figure 23-5 has been updated to reflect **Project Change Request 2 [AS-152]** change to the Onshore Order Limits.
03	11	Figure 23-6	Figure 23-6 has been updated to reflect **Project Change Request 2 [AS-152]** change to the indicative landscape plan within the Onshore Substation Zone.
03	12 to 64	Figure 23-7 Figure 23-8 Figure 23-9 Figure 23-10 Figure 23-11 Figure 23-12 Figure 23-13 Figure 23-14 Figure 23-15	Figure 23-7 to Figure 23-15 have been updated to • reflect **Project Change Request 2 [AS-152]** change to the footprint of the Onshore Converter Stations • reflect **Project Change Request 2 [AS-152]** change to the Onshore Order Limits. • Provide winter viewpoints with visualisations and baseline winter photography as requested by the ExA in the **Rule 17 Letter** [PD-006] for Viewpoint 1, 2, 3, 4 and 6.

03	29	Figure 23-9	Figure 23-9, Viewpoint 3, has also been updated to include the 10 year mitigation planting with compound extent as referenced in **The Applicants' Responses to Issue Specific Hearing 2 (ISH2) Supplementary Agenda Questions** [REP1-050] Agenda Item 9: Seascape, Landscape and Visual, ISH2.9.9 and provided in response to **East Riding of Yorkshire Council's Local Impact Report** [PDC-007] as referenced in **The Applicants' Response to East Riding of Yorkshire Council's Local Impact Report** [REP1-048].
03	65 to 69	Figure 23-16	Figure 23-16 Viewpoint 9: Dunflat Road, is an additional Viewpoint as requested by the ExA in the **Rule 17 Letter** [PD-006].
03	70 to 74	Figure 23-17	Figure 23-17 Viewpoint 10, A164, is an additional Viewpoint initially requested by ERYCs landscape consultants as referenced in Appendix A of the **ERYC Statement of Common Ground** [REP1-028]. This request was followed up with a request by the ExA in the **Supplementary Agenda Questions for Issue Specific Hearing 2 (ISH2) on Wednesday 15 and Thursday 16 January 2025** [EV5-002] and discussed in **The Applicants' Responses to Issue Specific Hearing 2 (ISH2) Supplementary Agenda Questions** [REP1-050] Agenda Item 9: Seascape, Landscape and Visual, ISH2.9.6.
04	13-17	Figure 23-7e	Figure 23-7e has been updated following ISH4 Action Point 17 [EV9-004] which requested the left coverage was reviewed to ensure it was reflective of a winter landscape.
04	57 58	Figure 23-15a3 Figure 23-15a4	Cultural Heritage Viewpoint 2, Figure 23-15a3 has been updated following ISH4 Action Point 30 [EV9-004] which requested a visualisation to be provided which would show the proposed access road from the scheduled monument near to Butt Farm. The access road to the Onshore Converter Station(s) has been added to Figure 23-15a3 and Figure 23-15a4. Figure 23-15a4 has also been updated to show the access road to the Onshore Converter Station(s) with the proposed hedgerow planting along the access road as mitigation planting at year 10.



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Legend:

- Onshore Development Area
- Landscape and visual study area
- Subarea 1
- Subarea 2
- Subarea 3
- Subarea 4
- Subarea 5

S6	P08	10/02/2025	Suitable for Information	MS	SR	PM
S5	P07	27/02/2024	Suitable for Information	ZM	TH	PM
S4	P06	20/11/2023	Suitable for Information	TH	EH	PM
S3	P02	22/03/2023	Suitable for Information	HS	TH	PM
SUI	REV	DATE	DESCRIPTION	DRW	CHK	APR

Title:

Landscape and Visual Study Area

Figure: 23-1

Drawing No: PC2340_LUC_ON_ZZ_DR_Z_23_1

Co-ordinate system: British National Grid

Page Size: A3

Scale: 1:110,000

Project: Dogger Bank South Offshore Wind Farms

Report: Dogger Bank South: Environmental Statement

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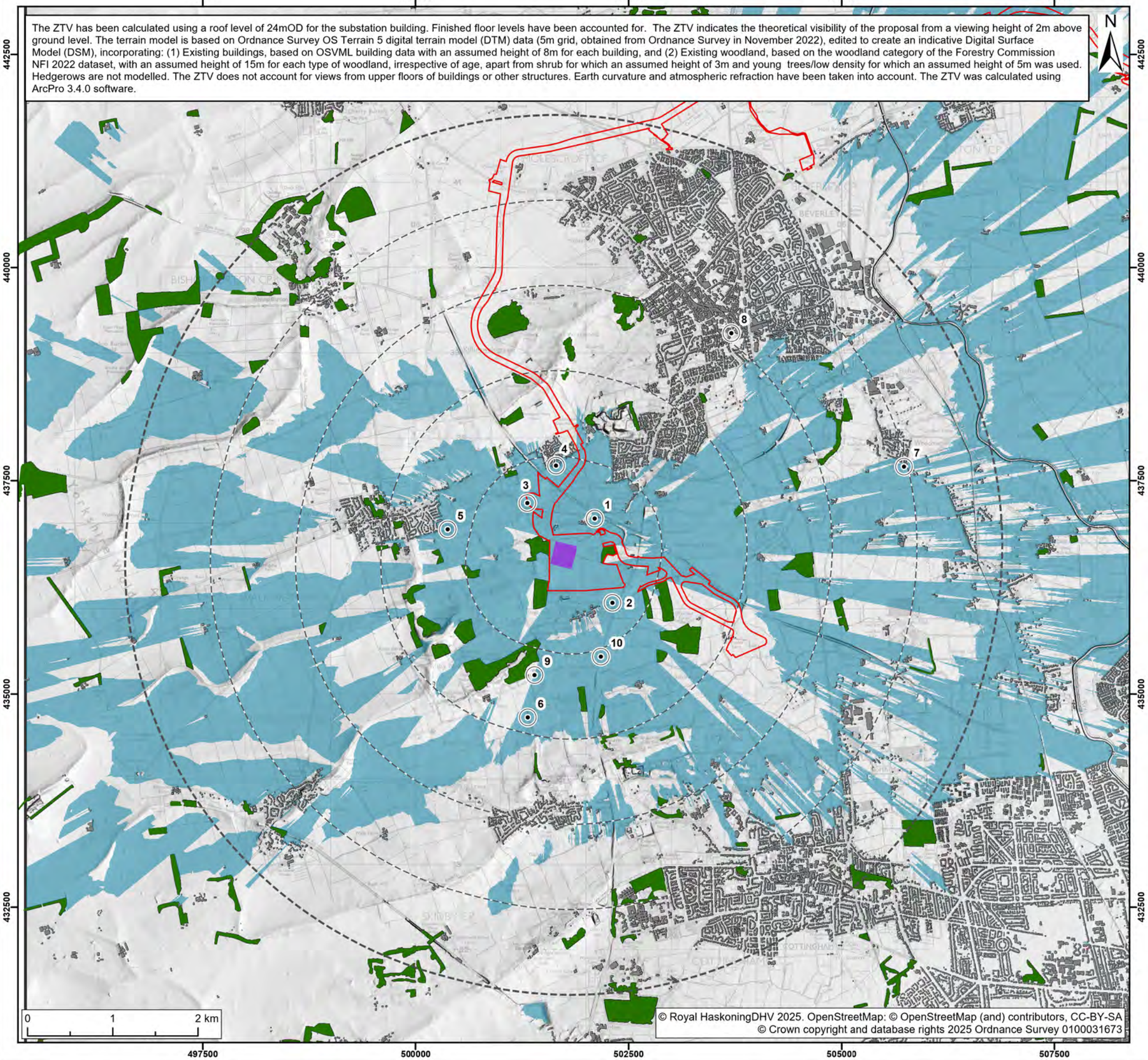
The ZTV has been calculated using a roof level of 24mOD for the substation building. Finished floor levels have been accounted for. The ZTV indicates the theoretical visibility of the proposal from a viewing height of 2m above ground level. The terrain model is based on Ordnance Survey OS Terrain 5 digital terrain model (DTM) data (5m grid, obtained from Ordnance Survey in November 2022), edited to create an indicative Digital Surface Model (DSM), incorporating: (1) Existing buildings, based on OSVML building data with an assumed height of 8m for each building, and (2) Existing woodland, based on the woodland category of the Forestry Commission NFI 2022 dataset, with an assumed height of 15m for each type of woodland, irrespective of age, apart from shrub for which an assumed height of 3m and young trees/low density for which an assumed height of 5m was used. Hedgerows are not modelled. The ZTV does not account for views from upper floors of buildings or other structures. Earth curvature and atmospheric refraction have been taken into account. The ZTV was calculated using ArcPro 3.4.0 software.



Legend:

- Onshore Development Area
- Indicative Onshore Converter Station Footprint
- 1km intervals from Indicative Onshore Converter Station Footprint
- 5km from Indicative Onshore Converter Station Footprint
- Viewpoint location
  - 1: Butt Farm
  - 2: Coppleflat Lane, Bentley
  - 3: Beverley 20 near Broadgate
  - 4: Oriel Close, off Broadgate
  - 5: Walkington
  - 6: Beverley 20 footpath, Risby
  - 7: Woodmansey
  - 8: Beverley Minster Tower
  - 9: Dunflat Road
  - 10: A164
- Existing woodland screening
- Existing building screening
- Proposed Converter Station theoretically visible

S6	P08	10/02/2025	Suitable for Information	MS	SR	PM
S5	P07	27/02/2024	Suitable for Information	ZM	TH	PM
S4	P06	20/11/2023	Suitable for Information	TH	EH	PM
S3	P02	22/03/2023	Suitable for Information	HS	TH	PM
SUI	REV	DATE	DESCRIPTION	DRW	CHK	APR

Title:

Onshore Substation Zone of Theoretical Visibility

Figure: 23-2a | Drawing No: PC2340_LUC_ON_ZZ_DR_Z_23_2

Co-ordinate system:	Page Size:	Scale:
British National Grid	A3	1:45,000

Project: Dogger Bank South Offshore Wind Farms

Report: Dogger Bank South: Environmental Statement

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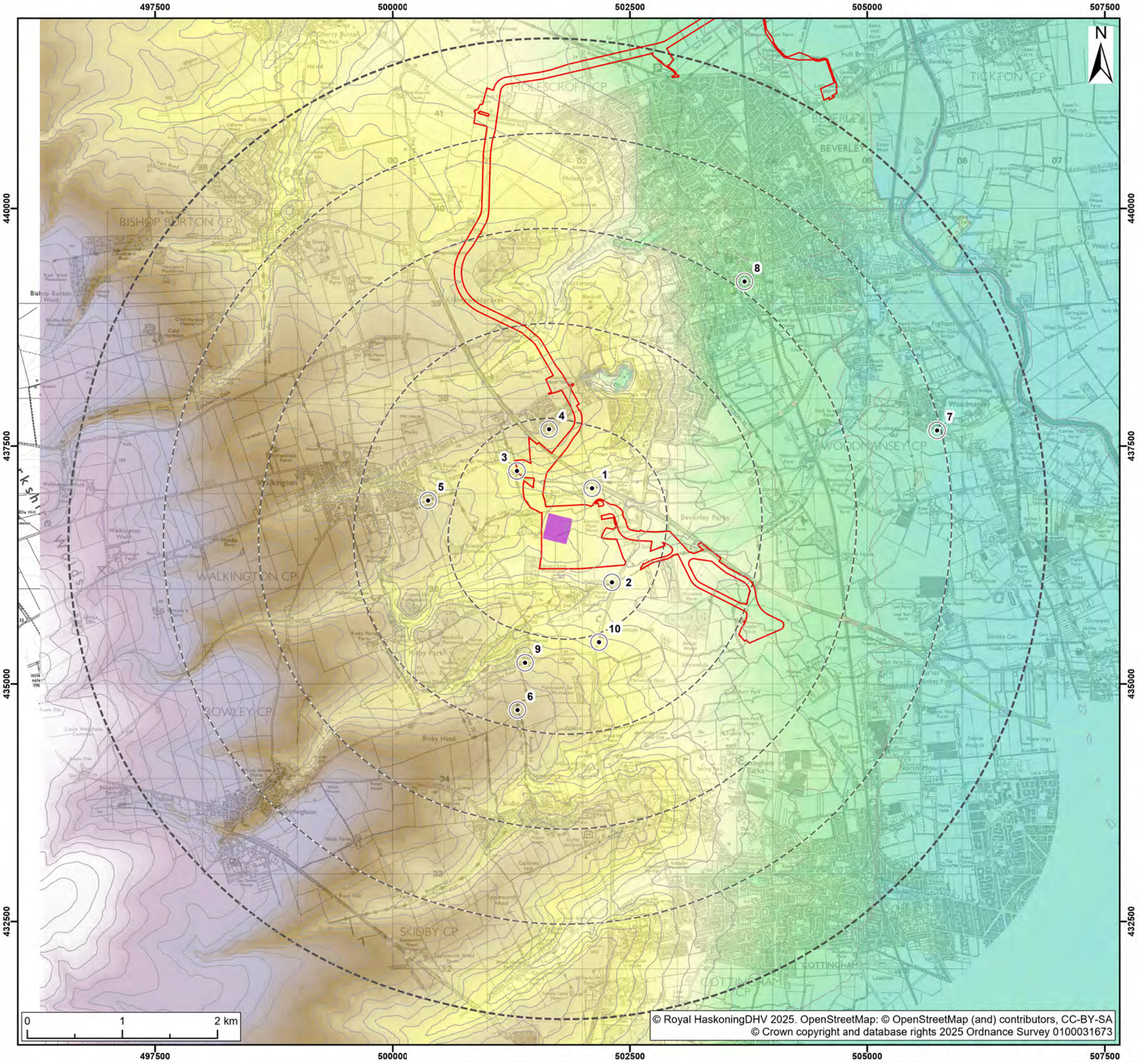

Legend:

- Onshore Development Area
- Indicative Onshore Converter Station Footprint
- 1km intervals from Indicative Onshore Converter Station Footprint
- 5km from Indicative Onshore Converter Station Footprint
- Viewpoint location
  - 1: Butt Farm
  - 2: Coppleflat Lane, Bentley
  - 3: Beverley 20 near Broadgate
  - 4: Oriel Close, off Broadgate
  - 5: Walkington
  - 6: Beverley 20 footpath, Risby
  - 7: Woodmansey
  - 8: Beverley Minster Tower
  - 9: Dunflat Road
  - 10: A164
- 5m contour line

OS Terrain 5 DTM (m)

138.19
-2.44

SUI	REV	DATE	DESCRIPTION	DRW	CHK	APR
S2	P08	10/02/2025	Suitable for Information	MS	SR	PM
S1	P01	08/10/2024	Suitable for Information	MS	TH	EH

Title:

Topography of the Study Area

Figure: 23-2b | Drawing No: PC2340_LUC_ON_ZZ_DR_Z_23_2_1

Co-ordinate system:	Page Size:	Scale:
British National Grid	A3	1:45,000

Project:	Report:
Dogger Bank South Offshore Wind Farms	Dogger Bank South: Environmental Statement

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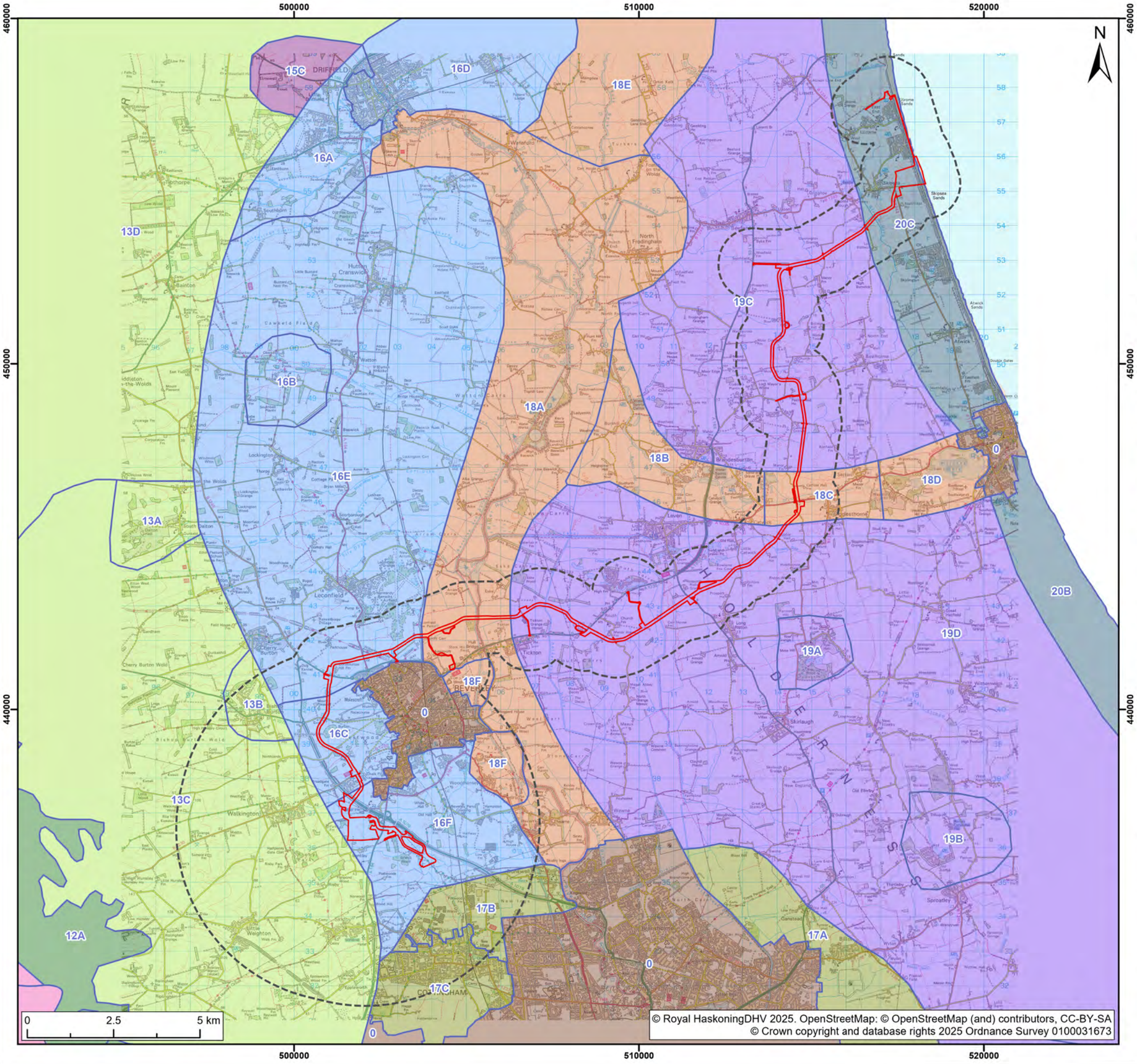

Legend:

- Onshore Development Area
- Landscape and visual study area

East Riding of Yorkshire Landscape Character Type

- 0: Urban
- 11: Jurassic Hills Farmland
- 12: Sloping Wooded Farmland
- 13: Open High Rolling Farmland
- 14: Central Dissected Plateau
- 15: Wolds Valley Farmland
- 16: Sloping Farmland (Edge of Wolds)
- 17: Farmed Urban Fringe
- 18: Low Lying Drained Farmland
- 19: Open Farmland
- 20: Coastal Farmland

Refer to Chapter 23 for details of Landscape Character Areas (Landscape Character Areas source: East Riding of Yorkshire Council)

SUI	REV	DATE	DESCRIPTION	DRW	CHK	APR
S6	P08	10/02/2025	Suitable for Information	MS	SR	PM
S5	P07	27/02/2024	Suitable for Information	ZM	TH	PM
S4	P06	20/11/2023	Suitable for Information	TH	EH	PM
S3	P02	22/03/2023	Suitable for Information	HS	TH	PM

Title:

Landscape Character

Figure: 23-3 | Drawing No: PC2340_LUC_ON_ZZ_DR_Z_23_3

Co-ordinate system:	Page Size:	Scale:
British National Grid	A3	1:110,000

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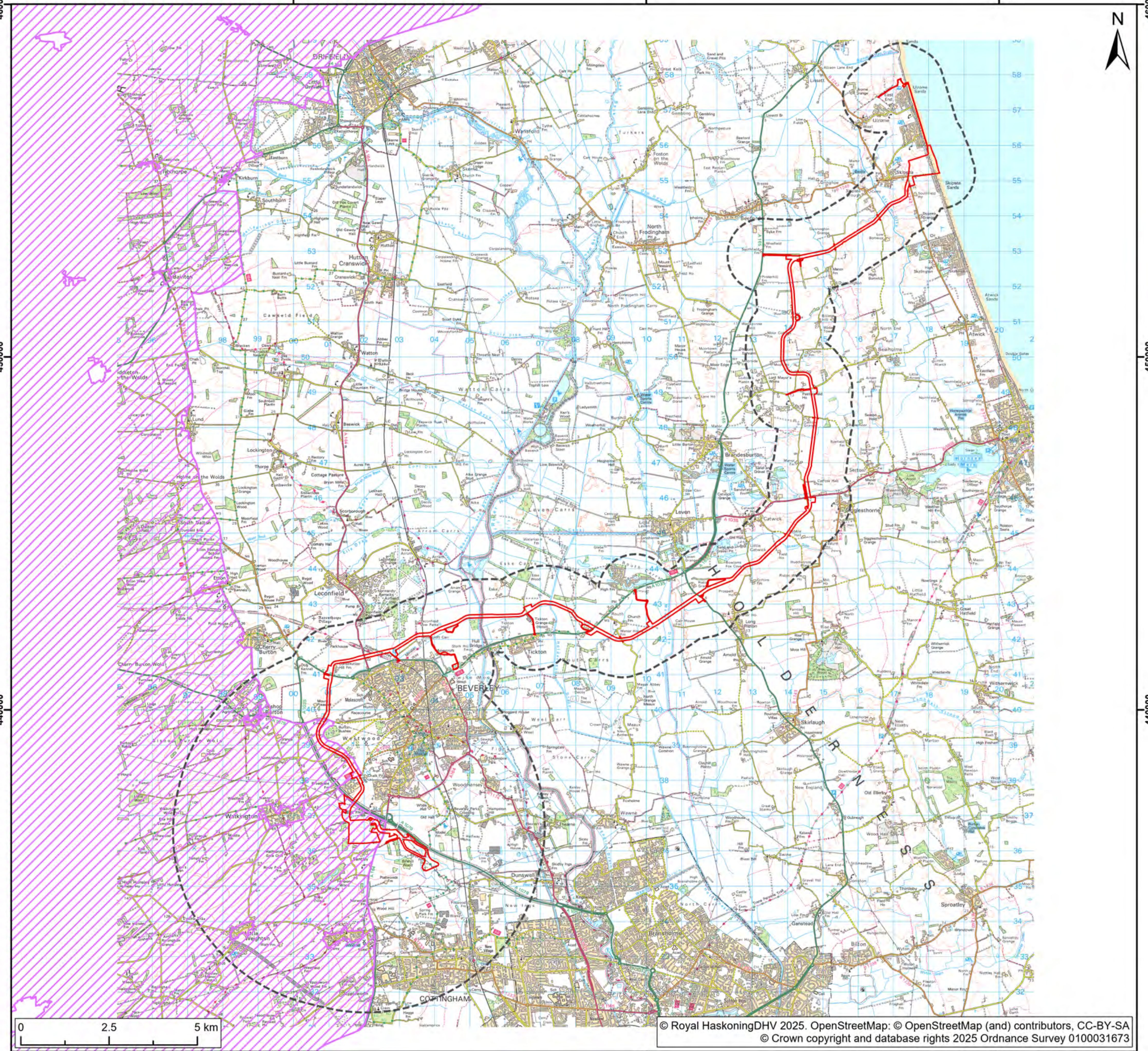

Legend:

- Onshore Development Area
- Landscape and visual study area
- Important Landscape Area (Yorkshire Wolds)

Important Landscape Area source: East Riding of Yorkshire Council

SUI	REV	DATE	DESCRIPTION	DRW	CHK	APR
S6	P08	10/02/2025	Suitable for Information	MS	SR	PM
S5	P07	27/02/2024	Suitable for Information	ZM	TH	PM
S4	P06	20/11/2023	Suitable for Information	TH	EH	PM
S3	P02	22/03/2023	Suitable for Information	HS	TH	PM

Title:

Landscape Designations

Figure: 23-4 | Drawing No: PC2340_LUC_ON_ZZ_DR_Z_23_4a

Co-ordinate system: British National Grid | Page Size: A3 | Scale: 1:110,000

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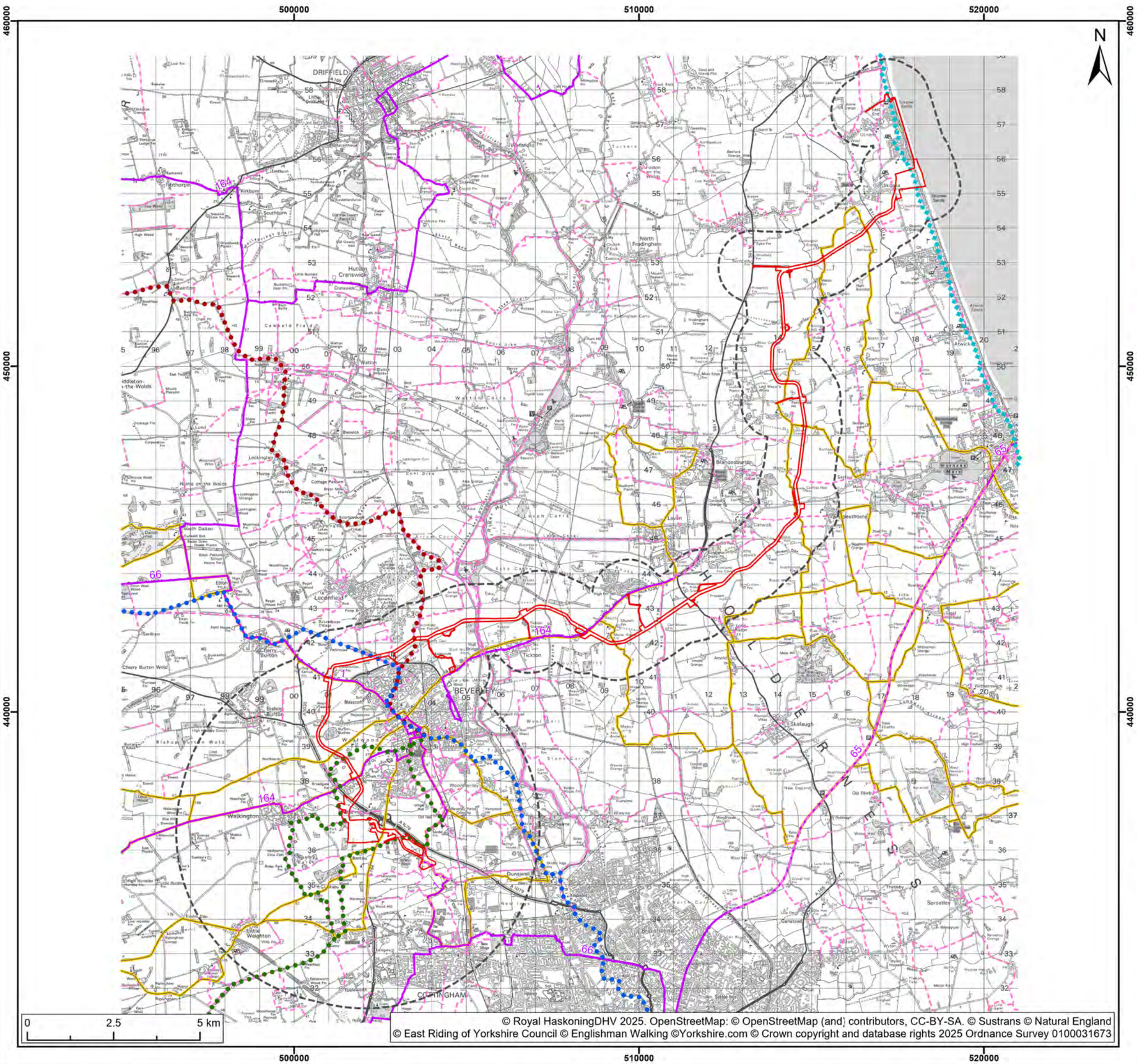

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Legend:

- Onshore Development Area
- Landscape and visual study area
- National Cycle Network (Sustrans)
- Holderness and Beverley cycle routes
- Public Right of Way (indicative)
- King Charles III England Coast Path

Long Distance Walking Routes (indicative)

- Beverley 20
- Minster Way
- Wilberforce Way

SUI	REV	DATE	DESCRIPTION	DRW	CHK	APR
S6	P08	10/02/2025	Suitable for Information	MS	SR	PM
S5	P07	27/02/2024	Suitable for Information	ZM	TH	PM
S4	P06	20/11/2023	Suitable for Information	TH	EH	PM
S3	P02	22/03/2023	Suitable for Information	HS	TH	PM

Title:

Recreation

Figure: 23-5

Drawing No: PC2340_LUC_ON_ZZ_DR_Z_23_5

Co-ordinate system: British National Grid

Page Size: A3

Scale: 1:110,000

Project: Dogger Bank South Offshore Wind Farms

Report: Dogger Bank South: Environmental Statement

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Legend:

- Onshore Substation Zone
- Existing utilities
- Area of underground cables
- Proposed meadow grassland
- Proposed woodland meadow
- Existing woodland to be retained
- Proposed native woodland
- Existing hedgerow to be retained
- Proposed native hedgerow
- Proposed native hedgerow with trees
- Enhancement of existing watercourse vegetation
- Area for SUDs (indicative)
- Area to be returned to agriculture
- Maintained access through planting
- New access
- Area of earthworks to be re-seeded with grassland
- Public Right of Way
- Public Right of Way diversion

SUI	REV	DATE	DESCRIPTION	DRW	CHK	APR
S7	P08	25/10/2024	Suitable for Information	SH	EH	PM
S6	P07	06/03/2024	Suitable for Information	SH	EH	PM
S5	P07	27/02/2024	Suitable for Information	SH	EH	PM
S4	P06	22/11/2023	Suitable for Information	SH	EH	PM
S3	P02	22/03/2023	Suitable for Information	HS	TH	PM

Title:

Indicative Landscape Plan

Figure: 23-6

Drawing No: PC2340_LUC_ON_ZZ_DR_Z_23_6

Co-ordinate system: British National Grid

Page Size: A3

Scale: 1:6,000

DO NOT SCALE

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500000 501250 502500 503750

438750 437500 436250

N

215°

0 0.5 1 km

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Legend:

- Onshore Development Area
- Indicative Onshore Converter Station Footprint
- 1km intervals from Indicative Onshore Converter Station Footprint
- 5km from Indicative Onshore Converter Station Footprint
- Viewpoint
- Existing woodland screening
- Existing building screening

Zone of theoretical visibility

- Proposed Converter Station theoretically visible
- 90° field of view

S2	P08	10/02/2024	Suitable for Information	MS	SR	PM
S1	P07	27/02/2024	Suitable for Information	ZM	TH	PM
SUI	REV	DATE	DESCRIPTION	DRW	CHK	APR

Title:

Viewpoint 1: Butt Farm

Figure: 23-7	Drawing No: PC2340_LUC_ON_ZZ_DR_Z_23-7

Co-ordinate system:	Page Size:	Scale:
British National Grid	A3	1:15,000

Project:

Dogger Bank South Offshore Wind Farms

Report:

Dogger Bank South: Environmental Statement

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LUC

OS reference:	502071 E 437059N
AOD (Above Ordnance Datum):	28.12 m
Direction of view:	215°
Horizontal field of view:	90° (cylindrical projection)

Vertical field of view:	27°
Image Enlargement Factor:	96%
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 250 mm

Camera:	NIKON D750
Lens:	Nikkor AF 50mm f/1.6D
Camera height:	1.5 m (above AOD)
Date and time:	19/05/2022 08:13

Data Sources:
Topography to inform AOD heights: 1m National LiDAR programme DTM (2020), Environment Agency
3D model informed by Site option layouts and development height parameters provided by Royal Haskoning DHV on 11/12/2024.

Dogger Bank South Offshore Wind Farms: Environmental Statement Report
Figure 23-7a
Viewpoint 1: Butt Farm

LUC

OS reference:	502102 E 437056N
AOD (Above Ordnance Datum):	28.12 m
Direction of view:	215°
Horizontal field of view:	90° (cylindrical projection)

Vertical field of view:	27°
Image Enlargement Factor:	96%
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 250 mm

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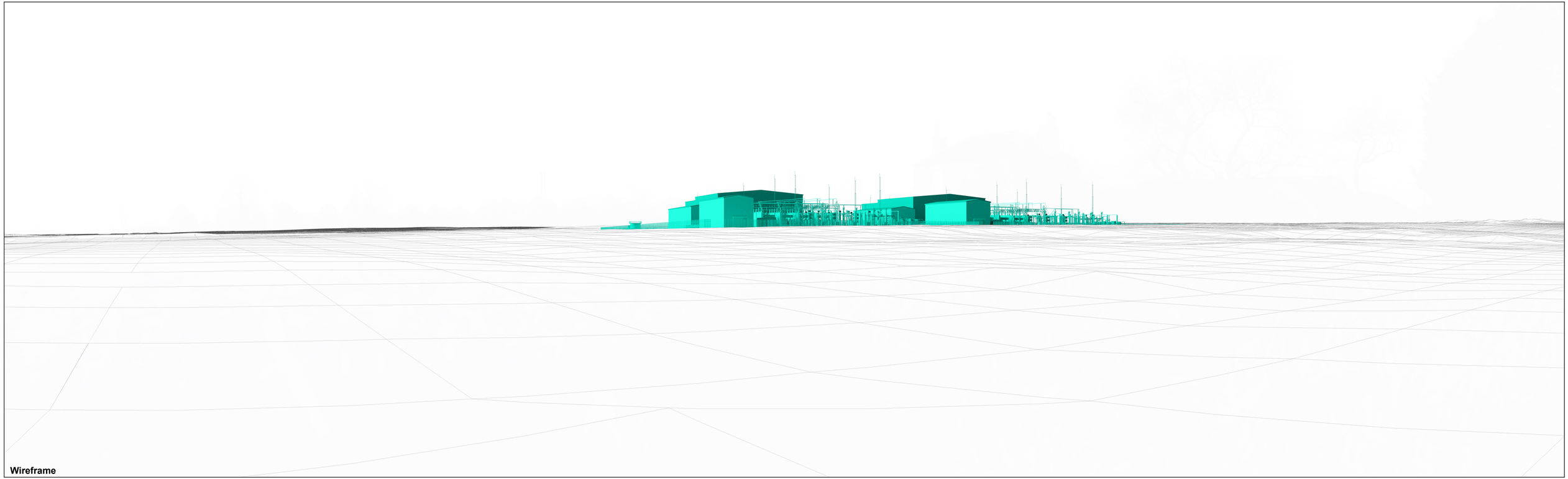
Lens:	Nikkor AF 50mm f/1.6D
Camera height:	1.5 m (above AOD)
Date and time:	10/01/2024 08:16

Data Sources:
Topography to inform AOD heights: 1m National LiDAR programme DTM (2020), Environment Agency
3D model informed by Site option layouts and development height parameters provided by Royal Haskoning DHV on 11/12/2024.

Dogger Bank South Offshore Wind Farms: Environmental Statement Report
Figure 23-7b
Viewpoint 1: Butt Farm



LUC

OS reference:	502102 E 437056N
AOD (Above Ordnance Datum):	28.12 m
Direction of view:	215°
Horizontal field of view:	90° (cylindrical projection)

Vertical field of view:	27°
Image Enlargement Factor:	96%
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 250 mm

Camera:	n/a
Lens:	n/a
Camera height:	1.5 m (above AOD)
Date and time:	n/a

Data Sources:
Topography to inform AOD heights: 1m National LiDAR programme DTM (2020), Environment Agency
3D model informed by Site option layouts and development height parameters provided by Royal Haskoning DHV on 11/12/2024.

Dogger Bank South Offshore Wind Farms: Environmental Statement Report
Figure 23-7c
Viewpoint 1: Butt Farm

LUC

OS reference:	502102 E 437056N
AOD (Above Ordnance Datum):	28.12 m
Direction of view:	215°
Horizontal field of view:	90° (cylindrical projection)

Vertical field of view:	27°
Image Enlargement Factor:	96%
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 250 mm

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Lens:	Nikkor AF 50mm f/1.6D
Camera height:	1.5 m (above AOD)
Date and time:	10/01/2024 08:16

Data Sources:
Topography to inform AOD heights: 1m National LiDAR programme DTM (2020), Environment Agency
3D model informed by Site option layouts and development height parameters provided by Royal Haskoning DHV on 11/12/2024.

Dogger Bank South Offshore Wind Farms: Environmental Statement Report
Figure 23-7d
Viewpoint 1: Butt Farm

LUC

OS reference:	502102 E 437056N
AOD (Above Ordnance Datum):	28.12 m
Direction of view:	215°
Horizontal field of view:	90° (cylindrical projection)

Vertical field of view:	27°
Image Enlargement Factor:	96%
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 250 mm

Camera:	NIKON D750
Lens:	Nikkor AF 50mm f/1.6D
Camera height:	1.5 m (above AOD)
Date and time:	10/01/2024 08:16

Data Sources:
Topography to inform AOD heights: 1m National LiDAR programme DTM (2020), Environment Agency
3D model informed by Site option layouts and development height parameters provided by Royal Haskoning DHV on 11/12/2024.

Dogger Bank South Offshore Wind Farms: Environmental Statement Report
Figure 23-7e
Viewpoint 1: Butt Farm

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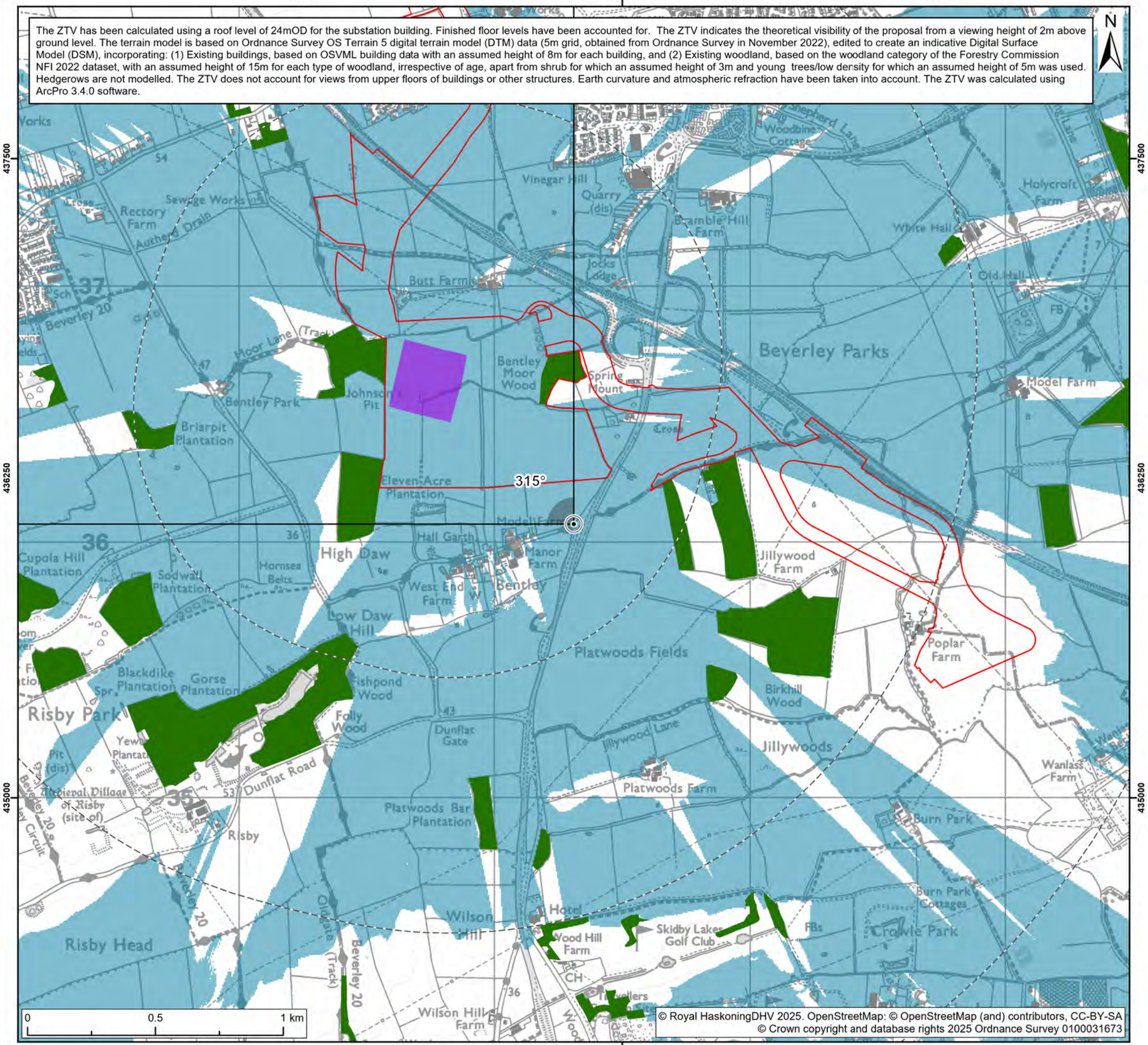

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Legend:

- Onshore Development Area
- Indicative Onshore Converter Station Footprint
- 1km intervals from Indicative Onshore Converter Station Footprint
- 5km from Indicative Onshore Converter Station Footprint
- Viewpoint
- Existing woodland screening
- Existing building screening

Zone of theoretical visibility

- Proposed Converter Station theoretically visible
- 90° field of view

S2	P08	10/02/2024	Suitable for Information	MS	SR	PM
S1	P07	27/02/2024	Suitable for Information	ZM	TH	PM
SUI	REV	DATE	DESCRIPTION	DRW	CHK	APR

Title:

Viewpoint 2: Coppleflat Lane, Bentley

Figure: 23-8 | Drawing No: PC2340_LUC_ON_ZZ_DR_Z_23-8

Co-ordinate system:	Page Size:	Scale:
British National Grid	A3	1:15,000

Project:

Dogger Bank South Offshore Wind Farms

Report:

Dogger Bank South: Environmental Statement

Royal HaskoningDHV
Enhancing Society Together

RWE

LUC

OS reference:	502310 E 436070N
AOD (Above Ordnance Datum):	23.73 m
Direction of view:	325°
Horizontal field of view:	90° (cylindrical projection)

Vertical field of view:	27°
Image Enlargement Factor:	96%
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 250 mm

Camera:	NIKON D600
Lens:	Nikkor AF 50mm f/1.6D
AOD:	23.73m
Date and time:	19/05/2022 09:41

Data Sources:
Topography to inform AOD heights: 1m National LiDAR programme DTM (2020), Environment Agency
3D model informed by Site option layouts and development height parameters provided by Royal Haskoning DHV on 11/12/2024.

Dogger Bank South Offshore Wind Farms: Environmental Statement Report
Figure 23-8a
Viewpoint 2: Coppleflat Lane, Bentley

LUC

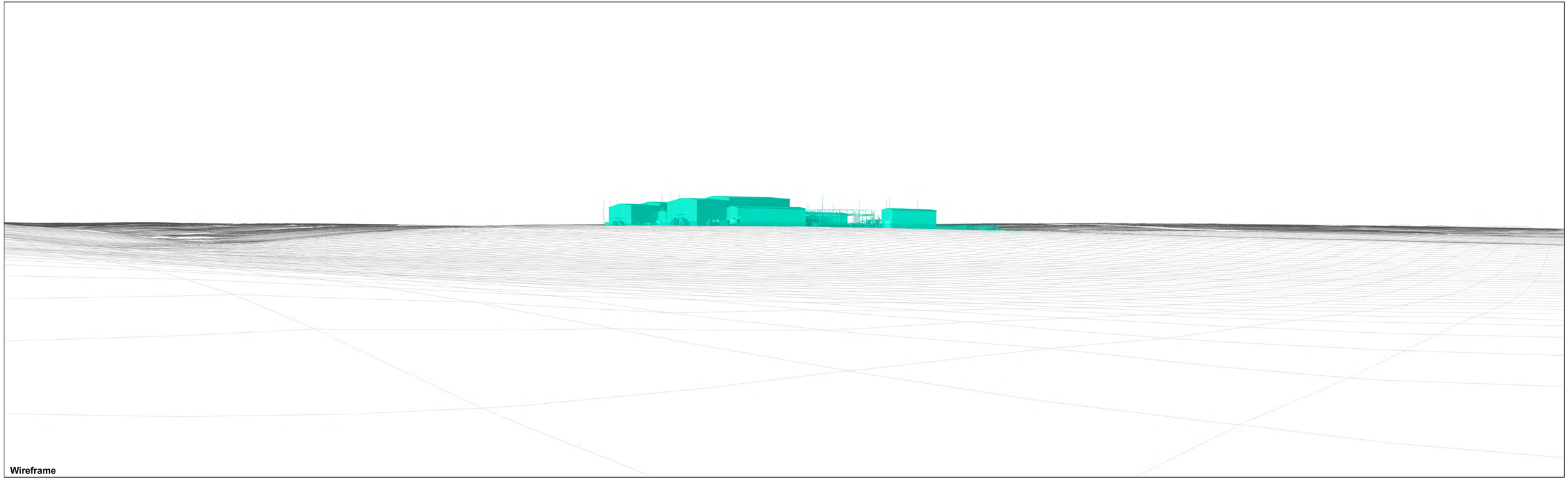
OS reference:	502310 E 436068N
AOD (Above Ordnance Datum):	23.73 m
Direction of view:	325°
Horizontal field of view:	90° (cylindrical projection)

Vertical field of view:	27°
Image Enlargement Factor:	96%
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 250 mm

Camera:	NIKON D600
Lens:	Nikkor AF 50mm f/1.6D
Camera height:	1.5 m (above AOD)
Date and time:	21/11/2024 14:04

Data Sources:
Topography to inform AOD heights: 1m National LiDAR programme DTM (2020), Environment Agency
3D model informed by Site option layouts and development height parameters provided by Royal Haskoning DHV on 11/12/2024.

Dogger Bank South Offshore Wind Farms: Environmental Statement Report
Figure 23-8b
Viewpoint 2: Coppleflat Lane,Bentley



OS reference:	502310 E 436068N
AOD (Above Ordnance Datum):	23.73 m
Direction of view:	325°
Horizontal field of view:	90° (cylindrical projection)

Vertical field of view:	27°
Image Enlargement Factor:	96%
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 250 mm

Camera:	- n/a
Lens:	- n/a
Camera height:	- 1.5 m (above AOD)
Date and time:	- n/a

Data Sources:
Topography to inform AOD heights: 1m National LiDAR programme DTM (2020), Environment Agency
3D model informed by Site option layouts and development height parameters provided by Royal Haskoning DHV on 11/12/2024.

Dogger Bank South Offshore Wind Farms: Environmental Statement Report
Figure 23-8c
Viewpoint 2: Coppleflat Lane,Bentley

LUC

OS reference:	502310 E 436068N
AOD (Above Ordnance Datum):	23.73 m
Direction of view:	325°
Horizontal field of view:	90° (cylindrical projection)

Vertical field of view:	27°
Image Enlargement Factor:	96%
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 250 mm

Camera:	NIKON D600
Lens:	Nikkor AF 50mm f/1.6D
Camera height:	1.5 m (above AOD)
Date and time:	21/11/2024 14:04

Data Sources:
Topography to inform AOD heights: 1m National LiDAR programme DTM (2020), Environment Agency
3D model informed by Site option layouts and development height parameters provided by Royal Haskoning DHV on 11/12/2024.

Dogger Bank South Offshore Wind Farms: Environmental Statement Report
Figure 23-8d
Viewpoint 2: Coppleflat Lane,Bentley

LUC

OS reference:	502310 E 436068N
AOD (Above Ordnance Datum):	23.73 m
Direction of view:	325°
Horizontal field of view:	90° (cylindrical projection)

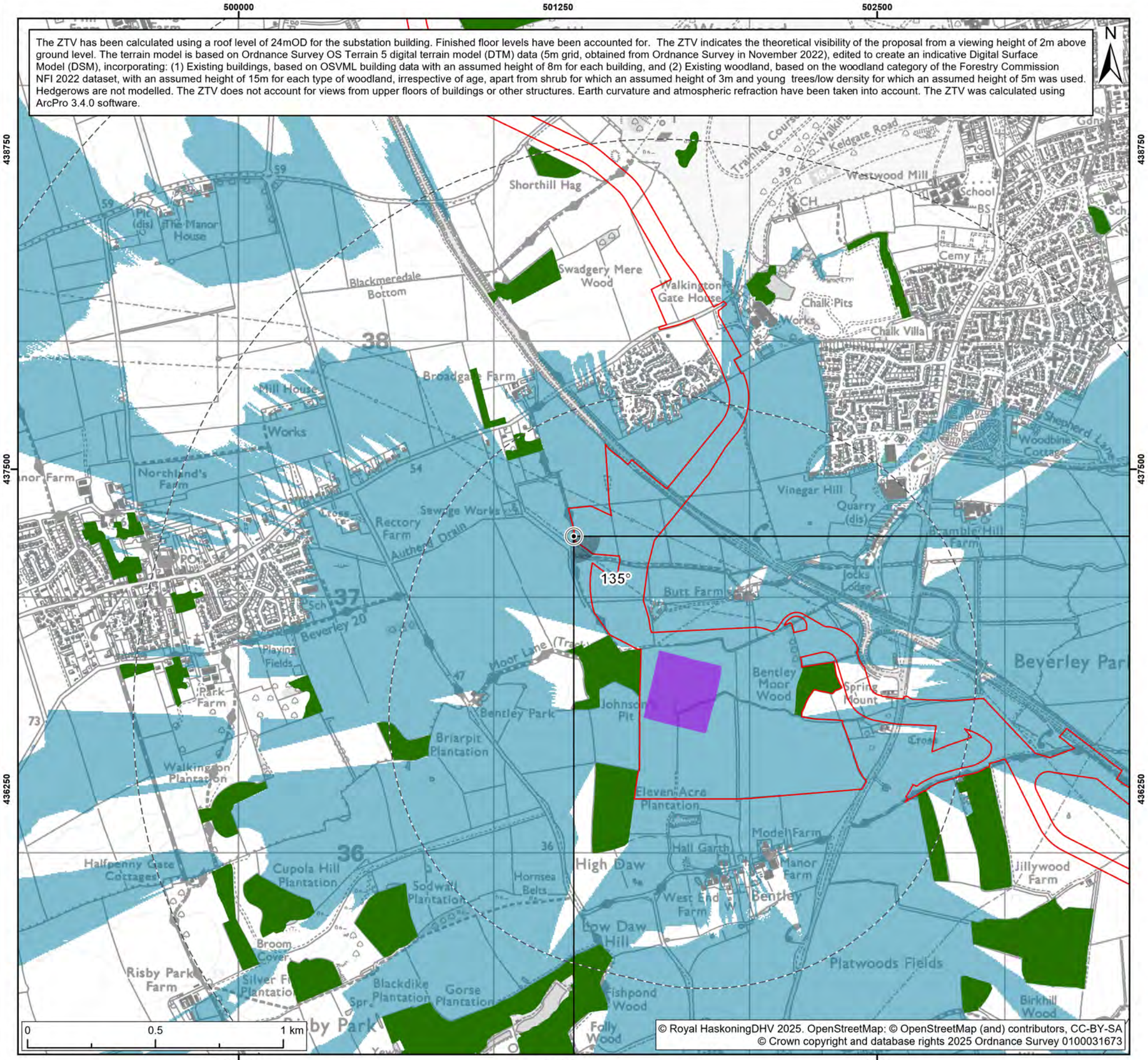
Vertical field of view:	27°
Image Enlargement Factor:	96%
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 250 mm

Camera:	NIKON D600
Lens:	Nikkor AF 50mm f/1.6D
Camera height:	1.5 m (above AOD)
Date and time:	21/11/2024 14:04

Data Sources:
Topography to inform AOD heights: 1m National LiDAR programme DTM (2020), Environment Agency
3D model informed by Site option layouts and development height parameters provided by Royal Haskoning DHV on 11/12/2024.

Dogger Bank South Offshore Wind Farms: Environmental Statement Report
Figure 23-8e
Viewpoint 2: Coppleflat Lane,Bentley

The ZTV has been calculated using a roof level of 24mOD for the substation building. Finished floor levels have been accounted for. The ZTV indicates the theoretical visibility of the proposal from a viewing height of 2m above ground level. The terrain model is based on Ordnance Survey OS Terrain 5 digital terrain model (DTM) data (5m grid, obtained from Ordnance Survey in November 2022), edited to create an indicative Digital Surface Model (DSM), incorporating: (1) Existing buildings, based on OSVML building data with an assumed height of 8m for each building, and (2) Existing woodland, based on the woodland category of the Forestry Commission NFI 2022 dataset, with an assumed height of 15m for each type of woodland, irrespective of age, apart from shrub for which an assumed height of 3m and young trees/low density for which an assumed height of 5m was used. Hedgerows are not modelled. The ZTV does not account for views from upper floors of buildings or other structures. Earth curvature and atmospheric refraction have been taken into account. The ZTV was calculated using ArcPro 3.4.0 software.



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Legend:

- Onshore Development Area
- Indicative Onshore Converter Station Footprint
- 1km intervals from Indicative Onshore Converter Station Footprint
- 5km from Indicative Onshore Converter Station Footprint
- Viewpoint
- Existing woodland screening
- Existing building screening

Zone of theoretical visibility

- Proposed Converter Station theoretically visible
- 90° field of view

S2	P08	10/02/2024	Suitable for Information	MS	SR	PM
S1	P07	27/02/2024	Suitable for Information	ZM	TH	PM
SUI	REV	DATE	DESCRIPTION	DRW	CHK	APR

Title:

Viewpoint 3: Beverley 20 near Broadgate

Figure: 23-9	Drawing No: PC2340_LUC_ON_ZZ_DR_Z_23-9	
Co-ordinate system: British National Grid	Page Size: A3	Scale: 1:15,000
Project: Dogger Bank South Offshore Wind Farms	Report: Dogger Bank South: Environmental Statement	

Royal HaskoningDHV
Enhancing Society Together

RWE

LUC

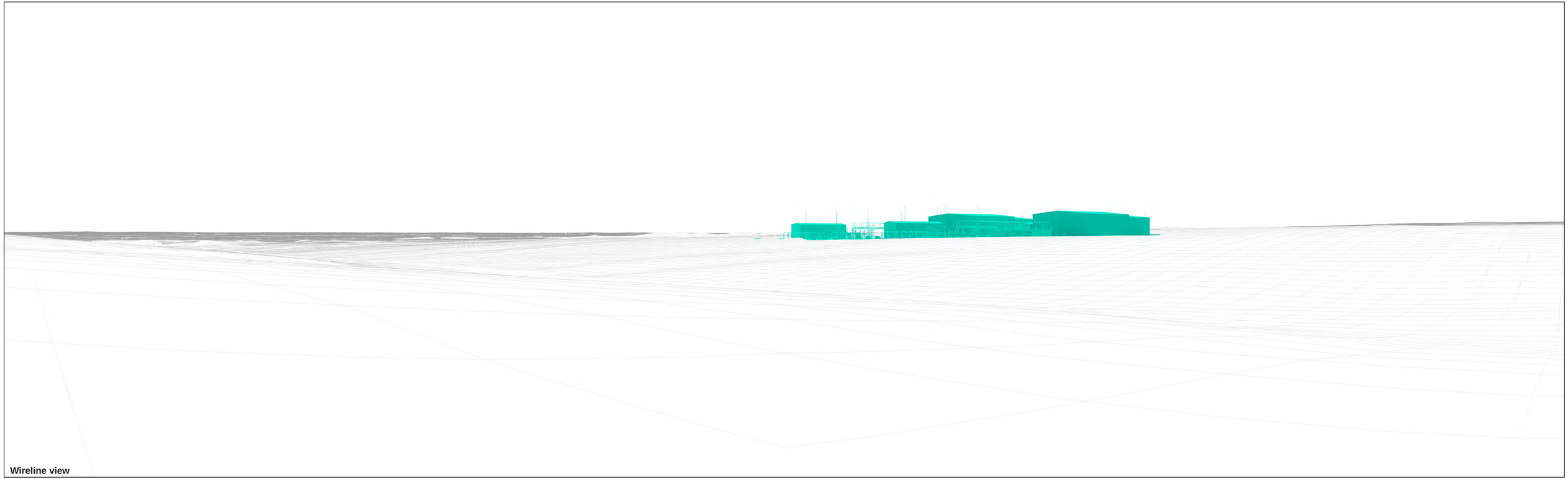
OS reference:	501312 E 437238 N
AOD (Above Ordnance Datum):	37.81 m
Direction of view:	135°
Horizontal field of view:	90° (cylindrical projection)

Vertical field of view:	27°
Image Enlargement Factor:	96%
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 250 mm

Camera:	NIKON D750
Lens:	Nikkor AF 50mm f/1.8D
Camera height:	1.5 m (above AOD)
Date and time:	17/01/2023 12:55

Data Sources:
Topography to inform AOD heights: 1m National LiDAR programme DTM (2020), Environment Agency
3D model informed by Site option layouts and development height parameters provided by Royal Haskoning DHV on 11/12/2024.

Dogger Bank South Offshore Wind Farms: Environmental Statement Report
Figure 23-9a
Viewpoint 3: Beverley 20 near Broadgate



LUC

OS reference:	501312 E 437238 N
AOD (Above Ordnance Datum):	37.81 m
Direction of view:	135°
Horizontal field of view:	90° (cylindrical projection)

Vertical field of view:	27°
Image Enlargement Factor:	96%
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 250 mm

Data Sources:
Topography Digital Terrain Model (DTM) uses 1m National LiDAR programme (2020) Enivronment Agency data and Ordnance Survey OST50 data.
Platform height of Western HVDC at 33.45m AOD and Eastern HVDC at 30.4m provided by Royal Haskoning on 12/10/2023

Dogger Bank South Offshore Wind Farms: Environmental Statement Report
Figure 23-9b
Viewpoint 3: Beverley 20 near Broadgate

LUC

OS reference:	501312 E 437238 N
AOD (Above Ordnance Datum):	37.81 m
Direction of view:	135°
Horizontal field of view:	90° (cylindrical projection)

Vertical field of view:	27°
Image Enlargement Factor:	96%
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 250 mm

Camera:	NIKON D750
Lens:	Nikkor AF 50mm f/1.8D
Camera height:	1.5 m (above AOD)
Date and time:	17/01/2023 12:55

Data Sources:
Topography to inform AOD heights: 1m National LiDAR programme DTM (2020), Environment Agency
3D model informed by Site option layouts and development height parameters provided by Royal Haskoning DHV on 11/12/2024.

Dogger Bank South Offshore Wind Farms: Environmental Statement Report
Figure 23-9c
Viewpoint 3: Beverley 20 near Broadgate

LUC

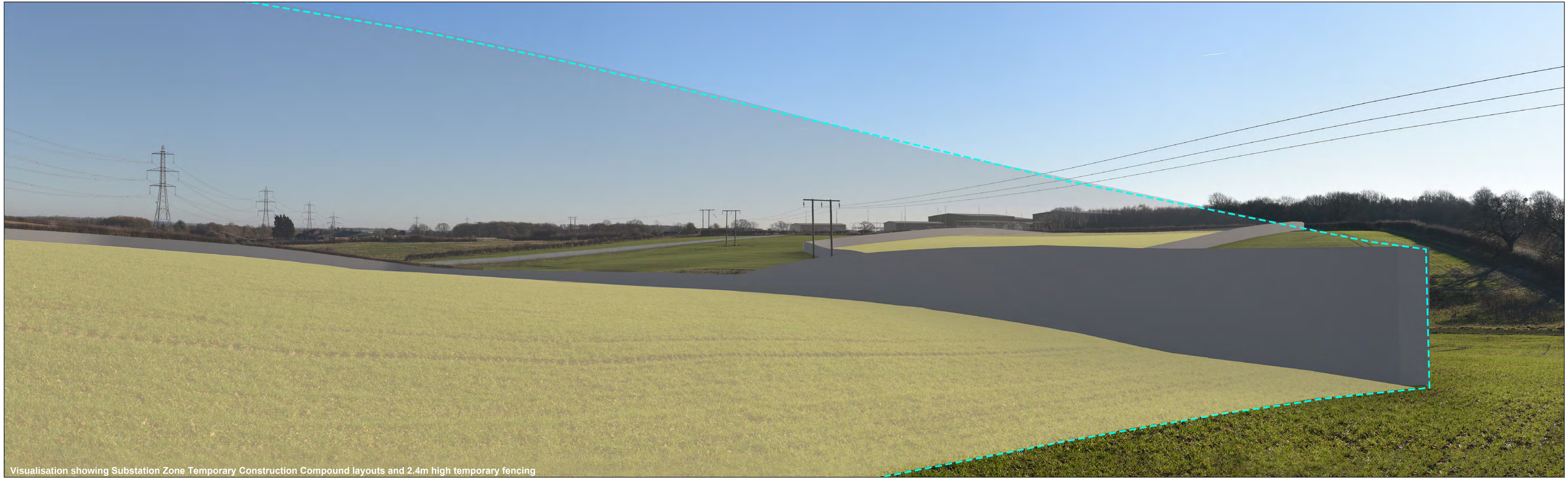
OS reference:	501312 E 437238 N
AOD (Above Ordnance Datum):	37.81 m
Direction of view:	135°
Horizontal field of view:	90° (cylindrical projection)

Vertical field of view:	27°
Image Enlargement Factor:	96%
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 250 mm

Camera:	NIKON D750
Lens:	Nikkor AF 50mm f/1.8D
Camera height:	1.5 m (above AOD)
Date and time:	17/01/2023 12:55

Data Sources:
Topography to inform AOD heights: 1m National LiDAR programme DTM (2020), Environment Agency
3D model informed by Site option layouts and development height parameters provided by Royal Haskoning DHV on 11/12/2024.

Dogger Bank South Offshore Wind Farms: Environmental Statement Report
Figure 23-9d
Viewpoint 3: Beverley 20 near Broadgate



LUC

OS reference:	501312 E 437238 N
AOD (Above Ordnance Datum):	37.81 m
Direction of view:	135°
Horizontal field of view:	90° (cylindrical projection)

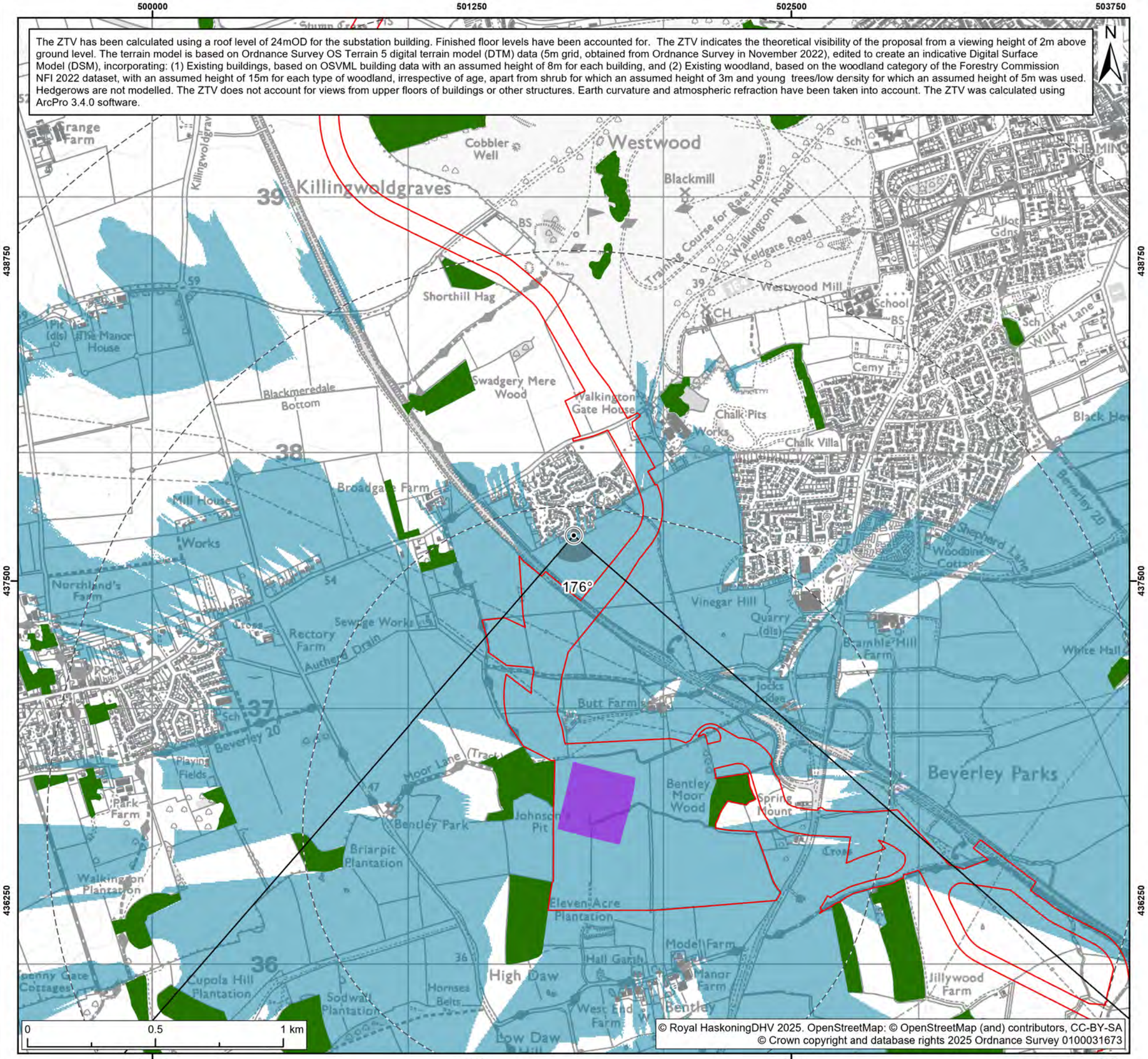
Vertical field of view:	27°
Image Enlargement Factor:	96%
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 250 mm

Camera:	NIKON D750
Lens:	Nikkor AF 50mm f/1.8D
Camera height:	1.5 m (above AOD)
Date and time:	17/01/2023 12:55

Data Sources:
Topography to inform AOD heights: 1m National LiDAR programme DTM (2020), Environment Agency
3D model informed by Site option layouts and development height parameters provided by Royal Haskoning DHV on 11/12/2024.

Dogger Bank South Offshore Wind Farms: Environmental Statement Report
Figure 23-9e
Viewpoint 3: Beverley 20 near Broadgate

The ZTV has been calculated using a roof level of 24mOD for the substation building. Finished floor levels have been accounted for. The ZTV indicates the theoretical visibility of the proposal from a viewing height of 2m above ground level. The terrain model is based on Ordnance Survey OS Terrain 5 digital terrain model (DTM) data (5m grid, obtained from Ordnance Survey in November 2022), edited to create an indicative Digital Surface Model (DSM), incorporating: (1) Existing buildings, based on OSVML building data with an assumed height of 8m for each building, and (2) Existing woodland, based on the woodland category of the Forestry Commission NFI 2022 dataset, with an assumed height of 15m for each type of woodland, irrespective of age, apart from shrub for which an assumed height of 3m and young trees/low density for which an assumed height of 5m was used. Hedgerows are not modelled. The ZTV does not account for views from upper floors of buildings or other structures. Earth curvature and atmospheric refraction have been taken into account. The ZTV was calculated using ArcPro 3.4.0 software.



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Legend:

- Onshore Development Area
- Indicative Onshore Converter Station Footprint
- 1km intervals from Indicative Onshore Converter Station Footprint
- 5km from Indicative Onshore Converter Station Footprint
- Viewpoint
- Existing woodland screening
- Existing building screening

Zone of theoretical visibility

- Proposed Converter Station theoretically visible
- 90° field of view

S2	P08	10/02/2024	Suitable for Information	MS	SR	PM
S1	P07	27/02/2024	Suitable for Information	ZM	TH	PM
SUI	REV	DATE	DESCRIPTION	DRW	CHK	APR

Title:

Viewpoint 4: Oriel Close, off Broadgate

Figure: 23-10	Drawing No: PC2340_LUC_ON_ZZ_DR_Z_23-10

Co-ordinate system:	Page Size:	Scale:
British National Grid	A3	1:15,000

Project:	Report:
Dogger Bank South Offshore Wind Farms	Dogger Bank South: Environmental Statement

Royal HaskoningDHV
Enhancing Society Together

RWE

LUC

OS reference:	501648 E 437674N
AOD (Above Ordnance Datum):	51.60 m
Direction of view:	176°
Horizontal field of view:	90° (cylindrical projection)

Vertical field of view:	27°
Image Enlargement Factor:	96%
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 250 mm

Camera:	NIKON D600
Lens:	Nikkor AF 50mm f/1.6D
Camera height:	1.5 m (above AOD)
Date and time:	29/09/2023 09:43

Data Sources:
Topography to inform AOD heights: 1m National LiDAR programme DTM (2020), Environment Agency
3D model informed by Site option layouts and development height parameters provided by Royal Haskoning DHV on 11/12/2024.

Dogger Bank South Offshore Wind Farms: Environmental Statement Report
Figure 23-10a
Viewpoint 4: Oriel Close

LUC

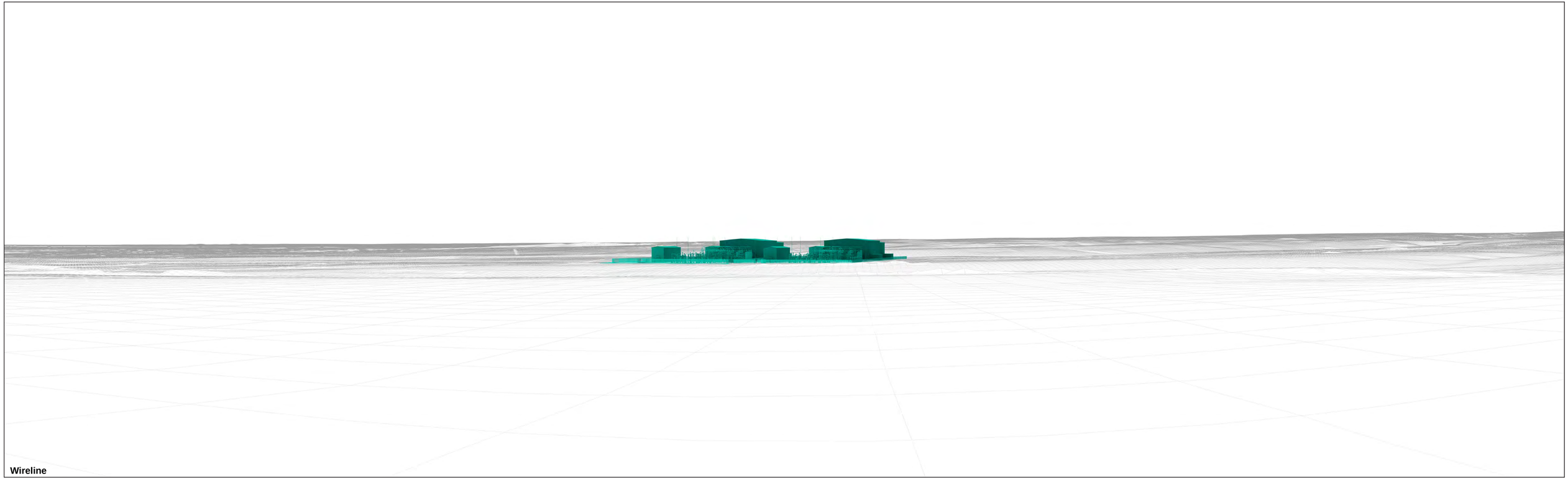
OS reference:	501649 E 437677N
AOD (Above Ordnance Datum):	51.60 m
Direction of view:	176°
Horizontal field of view:	90° (cylindrical projection)

Vertical field of view:	27°
Image Enlargement Factor:	96%
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 250 mm

Camera:	NIKON D600
Lens:	Nikkor AF 50mm f/1.6D
Camera height:	1.5 m (above AOD)
Date and time:	09/01/2025 15:45

Data Sources:
Topography to inform AOD heights: 1m National LiDAR programme DTM (2020), Environment Agency
3D model informed by Site option layouts and development height parameters provided by Royal Haskoning DHV on 11/12/2024.

Dogger Bank South Offshore Wind Farms: Environmental Statement Report
Figure 23-10b
Viewpoint 4: Oriel Close



LUC

OS reference:	501649 E 437677N
AOD (Above Ordnance Datum):	51.60 m
Direction of view:	176°
Horizontal field of view:	90° (cylindrical projection)

Vertical field of view:	27°
Image Enlargement Factor:	96%
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 250 mm

Camera:	-n/a
Lens:	-n/a
Camera height:	-1.5 m (above AOD)
Date and time:	-n/a

Data Sources:
Topography to inform AOD heights: 1m National LiDAR programme DTM (2020), Environment Agency
3D model informed by Site option layouts and development height parameters provided by Royal Haskoning DHV on 11/12/2024.

Dogger Bank South Offshore Wind Farms: Environmental Statement Report
Figure 23-10c
Viewpoint 4: Oriel Close

LUC

OS reference:	501649 E 437677N
AOD (Above Ordnance Datum):	51.60 m
Direction of view:	176°
Horizontal field of view:	90° (cylindrical projection)

Vertical field of view:	27°
Image Enlargement Factor:	96%
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 250 mm

Camera:	NIKON D600
Lens:	Nikkor AF 50mm f/1.6D
Camera height:	1.5 m (above AOD)
Date and time:	09/01/2025 15:45

Data Sources:
Topography to inform AOD heights: 1m National LiDAR programme DTM (2020), Environment Agency
3D model informed by Site option layouts and development height parameters provided by Royal Haskoning DHV on 11/12/2024.

Dogger Bank South Offshore Wind Farms: Environmental Statement Report
Figure 23-10d
Viewpoint 4: Oriel Close

LUC

OS reference:	501649 E 437677N
AOD (Above Ordnance Datum):	51.60 m
Direction of view:	176°
Horizontal field of view:	90° (cylindrical projection)

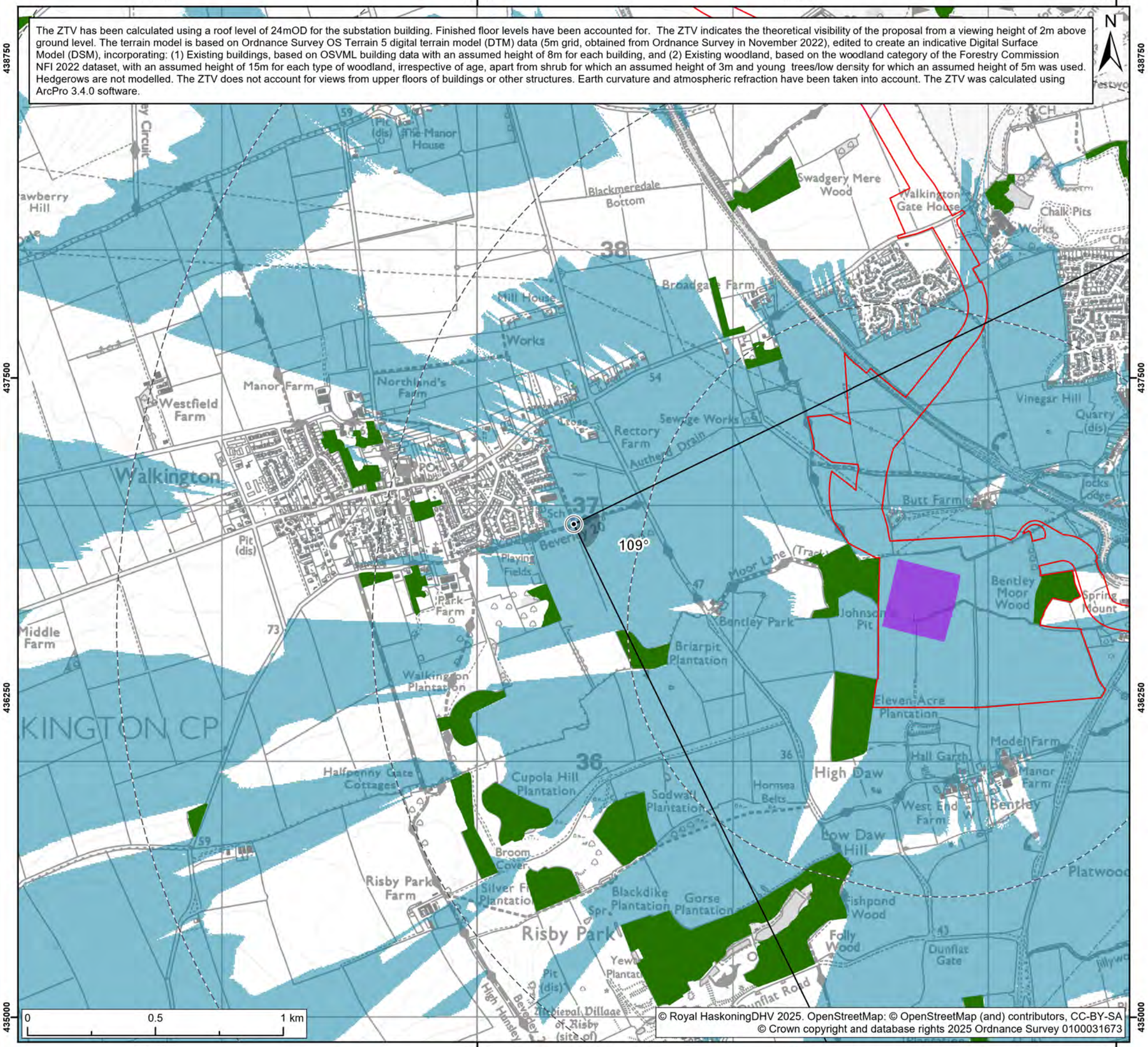
Vertical field of view:	27°
Image Enlargement Factor:	96%
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 250 mm

Camera:	NIKON D600
Lens:	Nikkor AF 50mm f/1.6D
Camera height:	1.5 m (above AOD)
Date and time:	09/01/2025 15:45

Data Sources:
Topography to inform AOD heights: 1m National LiDAR programme DTM (2020), Environment Agency
3D model informed by Site option layouts and development height parameters provided by Royal Haskoning DHV on 11/12/2024.

Dogger Bank South Offshore Wind Farms: Environmental Statement Report
Figure 23-10a
Viewpoint 4: Oriel Close

The ZTV has been calculated using a roof level of 24mOD for the substation building. Finished floor levels have been accounted for. The ZTV indicates the theoretical visibility of the proposal from a viewing height of 2m above ground level. The terrain model is based on Ordnance Survey OS Terrain 5 digital terrain model (DTM) data (5m grid, obtained from Ordnance Survey in November 2022), edited to create an indicative Digital Surface Model (DSM), incorporating: (1) Existing buildings, based on OSVML building data with an assumed height of 8m for each building, and (2) Existing woodland, based on the woodland category of the Forestry Commission NFI 2022 dataset, with an assumed height of 15m for each type of woodland, irrespective of age, apart from shrub for which an assumed height of 3m and young trees/low density for which an assumed height of 5m was used. Hedgerows are not modelled. The ZTV does not account for views from upper floors of buildings or other structures. Earth curvature and atmospheric refraction have been taken into account. The ZTV was calculated using ArcPro 3.4.0 software.



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Legend:

- Onshore Development Area
- Indicative Onshore Converter Station Footprint
- 1km intervals from Indicative Onshore Converter Station Footprint
- 5km from Indicative Onshore Converter Station Footprint
- Viewpoint
- Existing woodland screening
- Existing building screening

Zone of theoretical visibility

- Proposed Converter Station theoretically visible
- 90° field of view

SUI	REV	DATE	DESCRIPTION	DRW	CHK	APR
S2	P08	10/02/2024	Suitable for Information	MS	SR	PM
S1	P07	27/02/2024	Suitable for Information	ZM	TH	PM

Title:

Viewpoint 5: Walkington

Figure: 23-11	Drawing No: PC2340_LUC_ON_ZZ_DR_Z_23-11	
Co-ordinate system: British National Grid	Page Size: A3	Scale: 1:15,000

Project:	Report:
Dogger Bank South Offshore Wind Farms	Dogger Bank South: Environmental Statement

Royal HaskoningDHV
Enhancing Society Together

RWE

LUC

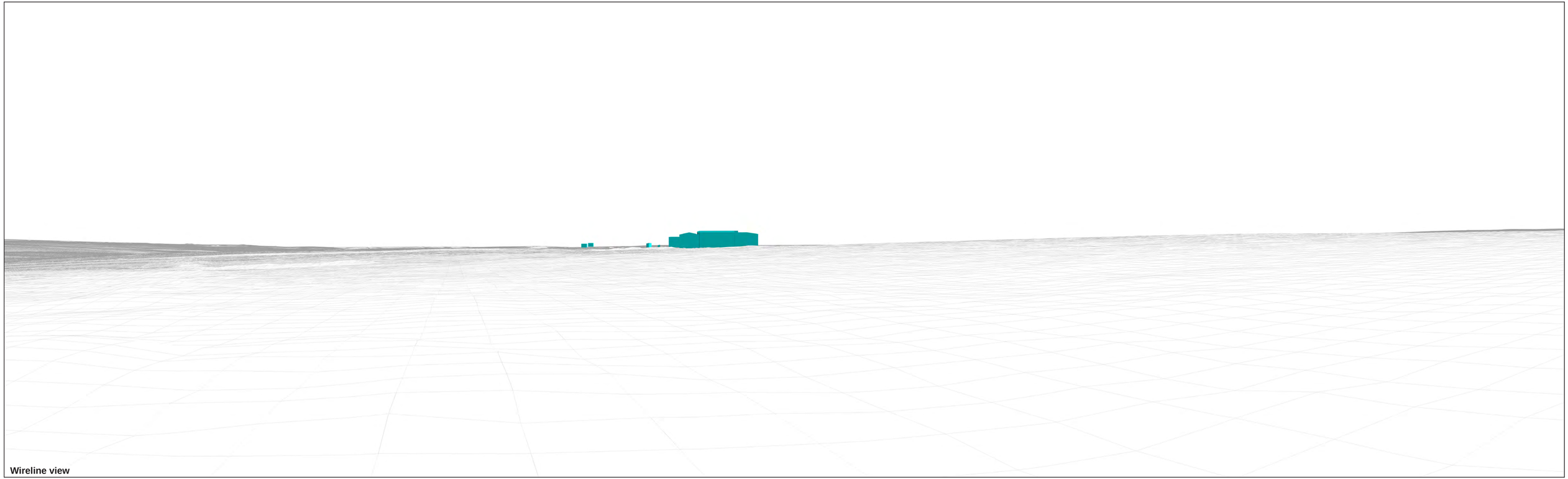
OS reference:	500377 E 436928 N
AOD (Above Ordnance Datum):	52.79 m
Direction of view:	109°
Horizontal field of view:	90° (cylindrical projection)

Vertical field of view:	27°
Image Enlargement Factor:	96%
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 250 mm

Camera:	NIKON D750
Lens:	Nikkor AF 50mm f/1.8D
Camera height:	1.5 m (above AOD)
Date and time:	17/01/2023 12:16

Data Sources:
Topography to inform AOD heights: 1m National LiDAR programme DTM (2020), Environment Agency
3D model informed by Site option layouts and development height parameters provided by Royal Haskoning DHV on 11/12/2024.

Dogger Bank South Offshore Wind Farms: Environmental Statement Report
Figure 23-11a
Viewpoint 5: Walkington



LUC

OS reference:	500377 E 436928 N
AOD (Above Ordnance Datum):	52.79 m
Direction of view:	109°
Horizontal field of view:	90° (cylindrical projection)

Vertical field of view:	27°
Image Enlargement Factor:	96%
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 250 mm

Data Sources:
Topography Digital Terrain Model (DTM) uses 1m National LiDAR programme (2020) Enivronment Agency data and Ordnance Survey OST50 data.
Platform height of Western HVDC at 33.45m AOD and Eastern HVDC at 30.4m provided by Royal Haskoning on 12/10/2023

Dogger Bank South Offshore Wind Farms: Environmental Statement Report
Figure 23-11b
Viewpoint 5: Walkington

LUC

OS reference:	500377 E 436928 N
AOD (Above Ordnance Datum):	52.79 m
Direction of view:	109°
Horizontal field of view:	90° (cylindrical projection)

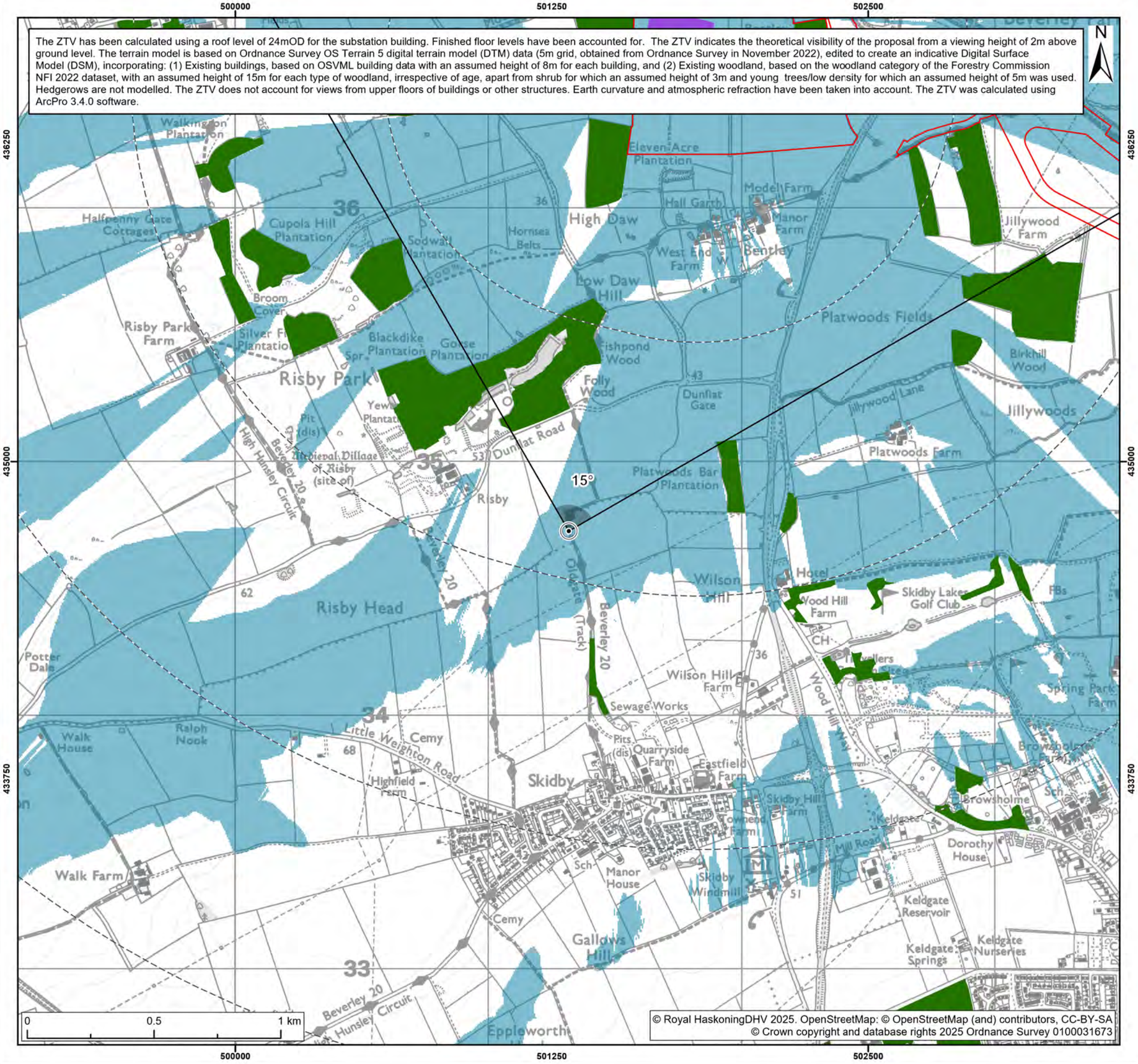
Vertical field of view:	27°
Image Enlargement Factor:	96%
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 250 mm

Camera:	NIKON D750
Lens:	Nikkor AF 50mm f/1.8D
Camera height:	1.5 m (above AOD)
Date and time:	17/01/2023 12:16

Data Sources:
Topography to inform AOD heights: 1m National LiDAR programme DTM (2020), Environment Agency
3D model informed by Site option layouts and development height parameters provided by Royal Haskoning DHV on 11/12/2024.

Dogger Bank South Offshore Wind Farms: Environmental Statement Report
Figure 23-11c
Viewpoint 5: Walkington

The ZTV has been calculated using a roof level of 24mOD for the substation building. Finished floor levels have been accounted for. The ZTV indicates the theoretical visibility of the proposal from a viewing height of 2m above ground level. The terrain model is based on Ordnance Survey OS Terrain 5 digital terrain model (DTM) data (5m grid, obtained from Ordnance Survey in November 2022), edited to create an indicative Digital Surface Model (DSM), incorporating: (1) Existing buildings, based on OSVML building data with an assumed height of 8m for each building, and (2) Existing woodland, based on the woodland category of the Forestry Commission NFI 2022 dataset, with an assumed height of 15m for each type of woodland, irrespective of age, apart from shrub for which an assumed height of 3m and young trees/low density for which an assumed height of 5m was used. Hedgerows are not modelled. The ZTV does not account for views from upper floors of buildings or other structures. Earth curvature and atmospheric refraction have been taken into account. The ZTV was calculated using ArcPro 3.4.0 software.



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Legend:

- Onshore Development Area
- Indicative Onshore Converter Station Footprint
- 1km intervals from Indicative Onshore Converter Station Footprint
- 5km from Indicative Onshore Converter Station Footprint
- Viewpoint
- Existing woodland screening
- Existing building screening

Zone of theoretical visibility

- Proposed Converter Station theoretically visible
- 90° field of view

S2	P08	10/02/2024	Suitable for Information	MS	SR	PM
S1	P07	27/02/2024	Suitable for Information	ZM	TH	PM
SUI	REV	DATE	DESCRIPTION	DRW	CHK	APR

Title:

Viewpoint 6: Beverley 20 footpath, Risby

Figure: 23-12	Drawing No: PC2340_LUC_ON_ZZ_DR_Z_23-12

Co-ordinate system:	Page Size:	Scale:
British National Grid	A3	1:15,000

Project:	Report:
Dogger Bank South Offshore Wind Farms	Dogger Bank South: Environmental Statement

Royal HaskoningDHV
Enhancing Society Together

RWE

LUC

OS reference:	501317E 434726N
AOD (Above Ordnance Datum):	60.41 m
Direction of view:	15°
Horizontal field of view:	90° (cylindrical projection)

Vertical field of view:	27°
Image Enlargement Factor:	96%
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 250 mm

Camera:	NIKON D600
Lens:	Nikkor AF 50mm f/1.6D
Camera height:	1.5 m (above AOD)
Date and time:	19/05/2022 11:04

Data Sources:
Topography to inform AOD heights: 1m National LiDAR programme DTM (2020), Environment Agency
3D model informed by Site option layouts and development height parameters provided by Royal Haskoning DHV on 11/12/2024.

Dogger Bank South Offshore Wind Farms: Environmental Statement Report
Figure 23.12a
Viewpoint 6: Beverley 20 footpath-Risby

LUC

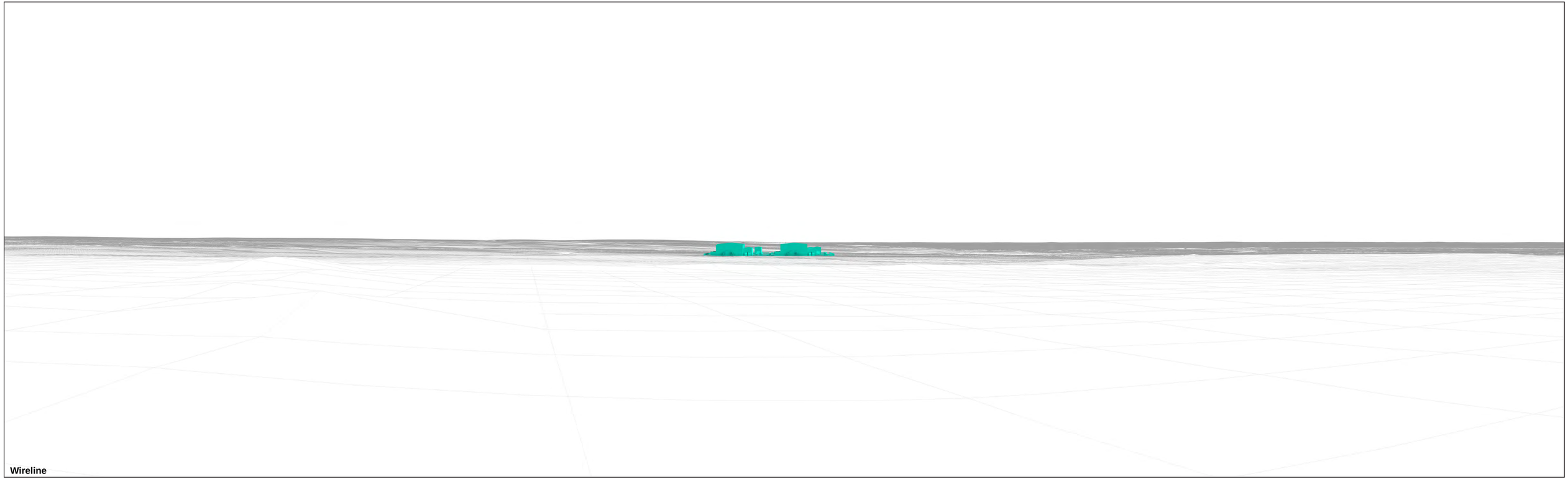
OS reference:	501317E 434726N
AOD (Above Ordnance Datum):	60.41 m
Direction of view:	15°
Horizontal field of view:	90° (cylindrical projection)

Vertical field of view:	27°
Image Enlargement Factor:	96%
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 250 mm

Camera:	NIKON D600
Lens:	Nikkor AF 50mm f/1.6D
Camera height:	1.5 m (above AOD)
Date and time:	21/11/2024 13:28

Data Sources:
Topography to inform AOD heights: 1m National LiDAR programme DTM (2020), Environment Agency
3D model informed by Site option layouts and development height parameters provided by Royal Haskoning DHV on 11/12/2024.

Dogger Bank South Offshore Wind Farms: Environmental Statement Report
Figure 23.12b
Viewpoint 6: Beverley 20 footpath-Risby



OS reference:	501317E 434726N
AOD (Above Ordnance Datum):	60.41 m
Direction of view:	15°
Horizontal field of view:	90° (cylindrical projection)

Vertical field of view:	27°
Image Enlargement Factor:	96%
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 250 mm

Camera:	- n/a
Lens:	- n/a
Camera height:	- 1.5 m (above AOD)
Date and time:	- n/a

Data Sources:
Topography to inform AOD heights: 1m National LiDAR programme DTM (2020), Environment Agency
3D model informed by Site option layouts and development height parameters provided by Royal Haskoning DHV on 11/12/2024.

Dogger Bank South Offshore Wind Farms: Environmental Statement Report
Figure 23.12c
Viewpoint 6: Beverley 20 footpath-Risby

LUC

OS reference:	501317E 434726N
AOD (Above Ordnance Datum):	60.41 m
Direction of view:	15°
Horizontal field of view:	90° (cylindrical projection)

Vertical field of view:	27°
Image Enlargement Factor:	96%
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 250 mm

Camera:	NIKON D600
Lens:	Nikkor AF 50mm f/1.6D
Camera height:	1.5 m (above AOD)
Date and time:	21/11/2024 13:28

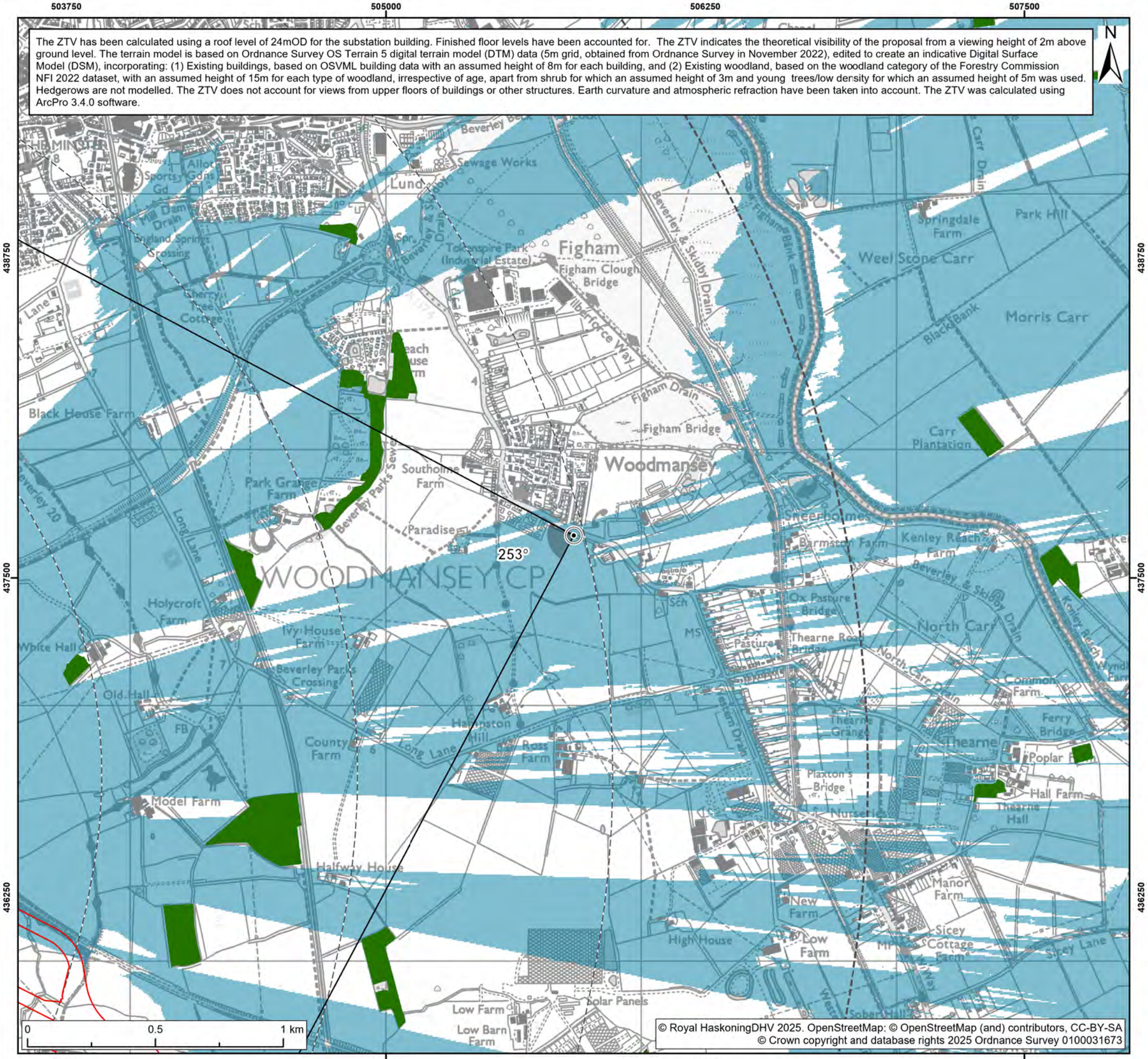
Data Sources:
Topography to inform AOD heights: 1m National LiDAR programme DTM (2020), Environment Agency
3D model informed by Site option layouts and development height parameters provided by Royal Haskoning DHV on 11/12/2024.

Dogger Bank South Offshore Wind Farms: Environmental Statement Report
Figure 23.12d
Viewpoint 6: Beverley 20 footpath-Risby

503750 505000 506250 507500

438750 437500 436250

The ZTV has been calculated using a roof level of 24mOD for the substation building. Finished floor levels have been accounted for. The ZTV indicates the theoretical visibility of the proposal from a viewing height of 2m above ground level. The terrain model is based on Ordnance Survey OS Terrain 5 digital terrain model (DTM) data (5m grid, obtained from Ordnance Survey in November 2022), edited to create an indicative Digital Surface Model (DSM), incorporating: (1) Existing buildings, based on OSVML building data with an assumed height of 8m for each building, and (2) Existing woodland, based on the woodland category of the Forestry Commission NFI 2022 dataset, with an assumed height of 15m for each type of woodland, irrespective of age, apart from shrub for which an assumed height of 3m and young trees/low density for which an assumed height of 5m was used. Hedgerows are not modelled. The ZTV does not account for views from upper floors of buildings or other structures. Earth curvature and atmospheric refraction have been taken into account. The ZTV was calculated using ArcPro 3.4.0 software.



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Legend:

- Onshore Development Area
- Indicative Onshore Converter Station Footprint
- 1km intervals from Indicative Onshore Converter Station Footprint
- 5km from Indicative Onshore Converter Station Footprint
- Viewpoint
- Existing woodland screening
- Existing building screening

Zone of theoretical visibility

- Proposed Converter Station theoretically visible
- 90° field of view

S2	P08	10/02/2024	Suitable for Information	MS	SR	PM
S1	P07	27/02/2024	Suitable for Information	ZM	TH	PM
SUI	REV	DATE	DESCRIPTION	DRW	CHK	APR

Title:

Viewpoint 7: Woodmansey

Figure: 23-13 | Drawing No: PC2340_LUC_ON_ZZ_DR_Z_23-13

Co-ordinate system: British National Grid | Page Size: A3 | Scale: 1:15,000

Project: Dogger Bank South Offshore Wind Farms

Report: Dogger Bank South: Environmental Statement

Royal HaskoningDHV
Enhancing Society Together

RWE

LUC

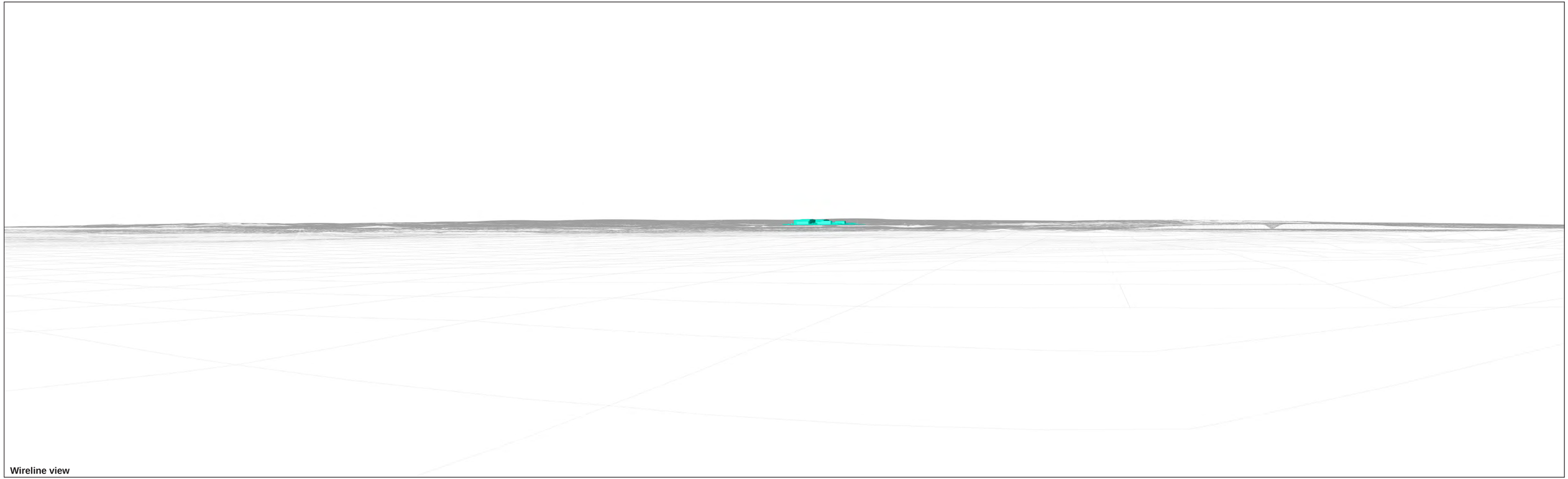
OS reference:	505736 E 437665 N
AOD (Above Ordnance Datum):	3.22 m
Direction of view:	253°
Horizontal field of view:	90° (cylindrical projection)

Vertical field of view:	27°
Image Enlargement Factor:	96%
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 250 mm

Camera:	NIKON D750
Lens:	Nikkor AF 50mm f/1.8D
Camera height:	1.5 m (above AOD)
Date and time:	17/01/2022 10:52

Data Sources:
Topography to inform AOD heights: 1m National LiDAR programme DTM (2020), Environment Agency
3D model informed by Site option layouts and development height parameters provided by Royal Haskoning DHV on 11/12/2024.

Dogger Bank South Offshore Wind Farms: Environmental Statement Report
Figure 23-13a
Viewpoint 7: Woodmansey



LUC

OS reference:	505736 E 437665 N
AOD (Above Ordnance Datum):	3.22 m
Direction of view:	253°
Horizontal field of view:	90° (cylindrical projection)

Vertical field of view:	27°
Image Enlargement Factor:	96%
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 250 mm

Data Sources:
Topography Digital Terrain Model (DTM) uses 1m National LiDAR programme (2020) Enivronment Agency data and Ordnance Survey OST50 data.
Platform height of Western HVDC at 33.45m AOD and Eastern HVDC at 30.4m provided by Royal Haskoning on 12/10/2023

Dogger Bank South Offshore Wind Farms: Environmental Statement Report
Figure 23-13b
Viewpoint 7: Woodmansey

LUC

OS reference:	505736 E 437665 N
AOD (Above Ordnance Datum):	3.22 m
Direction of view:	253°
Horizontal field of view:	90° (cylindrical projection)

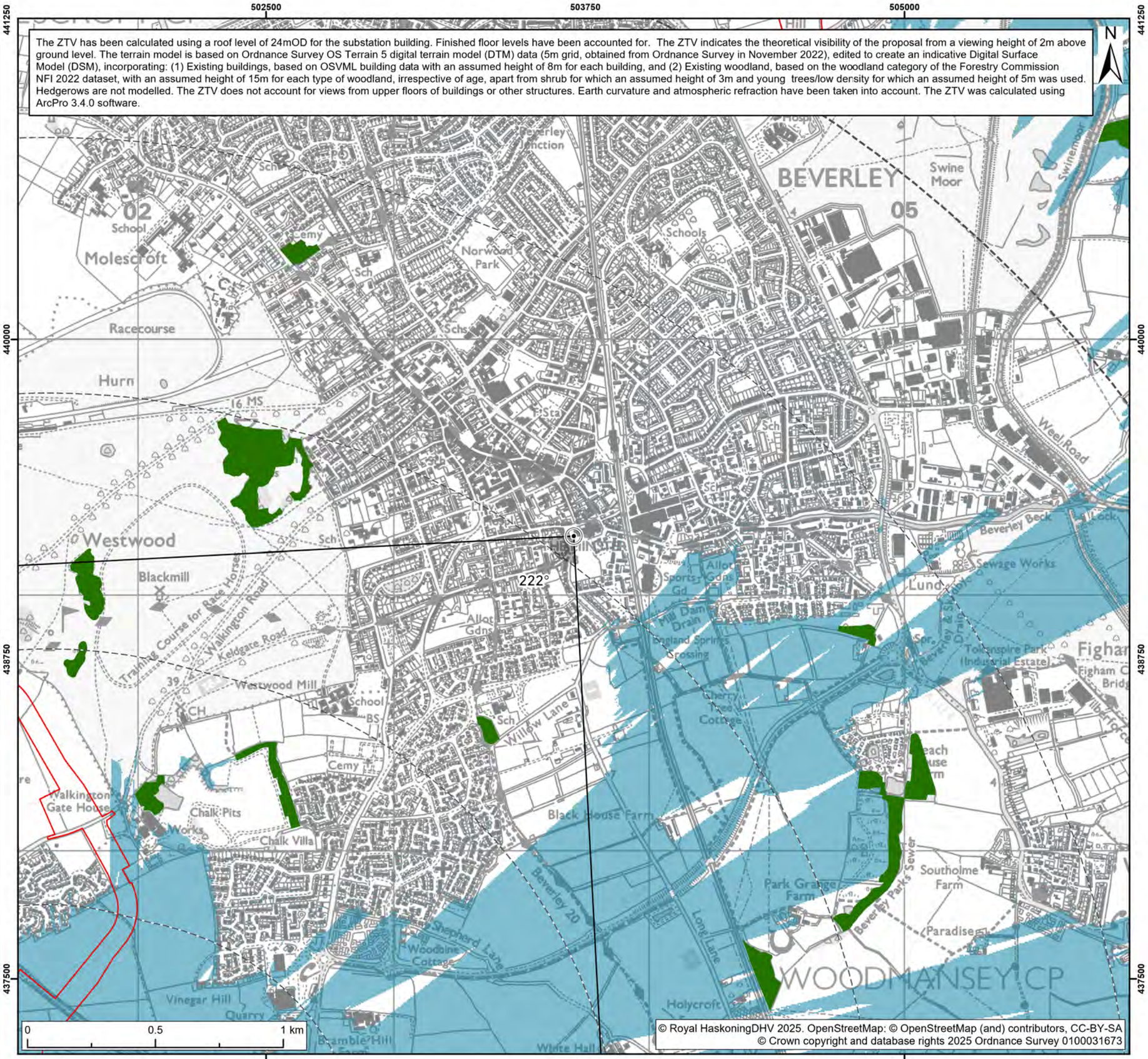
Vertical field of view:	27°
Image Enlargement Factor:	96%
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 250 mm

Camera:	NIKON D750
Lens:	Nikkor AF 50mm f/1.8D
Camera height:	1.5 m (above AOD)
Date and time:	17/01/2022 10:52

Data Sources:
Topography to inform AOD heights: 1m National LiDAR programme DTM (2020), Environment Agency
3D model informed by Site option layouts and development height parameters provided by Royal Haskoning DHV on 11/12/2024.

Dogger Bank South Offshore Wind Farms: Environmental Statement Report
Figure 23-13c
Viewpoint 7: Woodmansey

The ZTV has been calculated using a roof level of 24mOD for the substation building. Finished floor levels have been accounted for. The ZTV indicates the theoretical visibility of the proposal from a viewing height of 2m above ground level. The terrain model is based on Ordnance Survey OS Terrain 5 digital terrain model (DTM) data (5m grid, obtained from Ordnance Survey in November 2022), edited to create an indicative Digital Surface Model (DSM), incorporating: (1) Existing buildings, based on OSVML building data with an assumed height of 8m for each building, and (2) Existing woodland, based on the woodland category of the Forestry Commission NFI 2022 dataset, with an assumed height of 15m for each type of woodland, irrespective of age, apart from shrub for which an assumed height of 3m and young trees/low density for which an assumed height of 5m was used. Hedgerows are not modelled. The ZTV does not account for views from upper floors of buildings or other structures. Earth curvature and atmospheric refraction have been taken into account. The ZTV was calculated using ArcPro 3.4.0 software.



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Legend:

- Onshore Development Area
- Indicative Onshore Converter Station Footprint
- 1km intervals from Indicative Onshore Converter Station Footprint
- 5km from Indicative Onshore Converter Station Footprint
- Viewpoint
- Existing woodland screening
- Existing building screening

Zone of theoretical visibility

- Proposed Converter Station theoretically visible
- 90° field of view

SUI	REV	DATE	DESCRIPTION	DRW	CHK	APR
S2	P08	10/02/2024	Suitable for Information	MS	SR	PM
S1	P07	27/02/2024	Suitable for Information	ZM	TH	PM

Title:

Viewpoint 8: Beverley Minster Tower

Figure: 23-14 | Drawing No: PC2340_LUC_ON_ZZ_DR_Z_23-14

Co-ordinate system: British National Grid | Page Size: A3 | Scale: 1:15,000

Project: Dogger Bank South Offshore Wind Farms

Report: Dogger Bank South: Environmental Statement

Royal HaskoningDHV
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RWE

LUC

OS reference:	503705 E 439231 N
AOD (Above Ordnance Datum):	27.51 m
Direction of view:	222°
Horizontal field of view:	90° (cylindrical projection)

Vertical field of view:	27°
Image Enlargement Factor:	96%
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 250 mm

Camera:	NIKON D750
Lens:	Nikkor AF 50mm f/1.8D
Camera height:	1.5 m (above AOD)
Date and time:	29/09/2023 10:57

Data Sources:
Topography to inform AOD heights: 1m National LiDAR programme DTM (2020), Environment Agency
3D model informed by Site option layouts and development height parameters provided by Royal Haskoning DHV on 11/12/2024.

Dogger Bank South Offshore Wind Farms: Environmental Statement Report
Figure 23-14a
Viewpoint 8: Beverley Minster Tower

LUC

OS reference:	503705 E 439231 N
AOD (Above Ordnance Datum):	27.51 m
Direction of view:	222°
Horizontal field of view:	90° (cylindrical projection)

Vertical field of view:	27°
Image Enlargement Factor:	96%
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 250 mm

Data Sources:
Topography Digital Terrain Model (DTM) uses 1m National LiDAR programme (2020) Enivronment Agency data and Ordnance Survey OST50 data.
Platform height of Western HVDC at 33.45m AOD and Eastern HVDC at 30.4m provided by Royal Haskoning on 12/10/2023

Dogger Bank South Offshore Wind Farms: Environmental Statement Report
Figure 23-14b
Viewpoint 8: Beverley Minster Tower

Visualisation showing Proposed Onshore Converter Stations

LUC

OS reference:	503705 E 439231 N
AOD (Above Ordnance Datum):	27.51 m
Direction of view:	222°
Horizontal field of view:	90° (cylindrical projection)

Vertical field of view:	27°
Image Enlargement Factor:	96%
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 250 mm

Camera:	NIKON D750
Lens:	Nikkor AF 50mm f/1.8D
Camera height:	1.5 m (above AOD)
Date and time:	29/09/2023 10:57

Data Sources:
Topography to inform AOD heights: 1m National LiDAR programme DTM (2020), Environment Agency
3D model informed by Site option layouts and development height parameters provided by Royal Haskoning DHV on 11/12/2024.

Dogger Bank South Offshore Wind Farms: Environmental Statement Report
Figure 23-14c
Viewpoint 8: Beverley Minster Tower

LUC

OS reference:	503705 E 439231 N
AOD (Above Ordnance Datum):	27.51 m
Direction of view:	222°
Horizontal field of view:	90° (cylindrical projection)

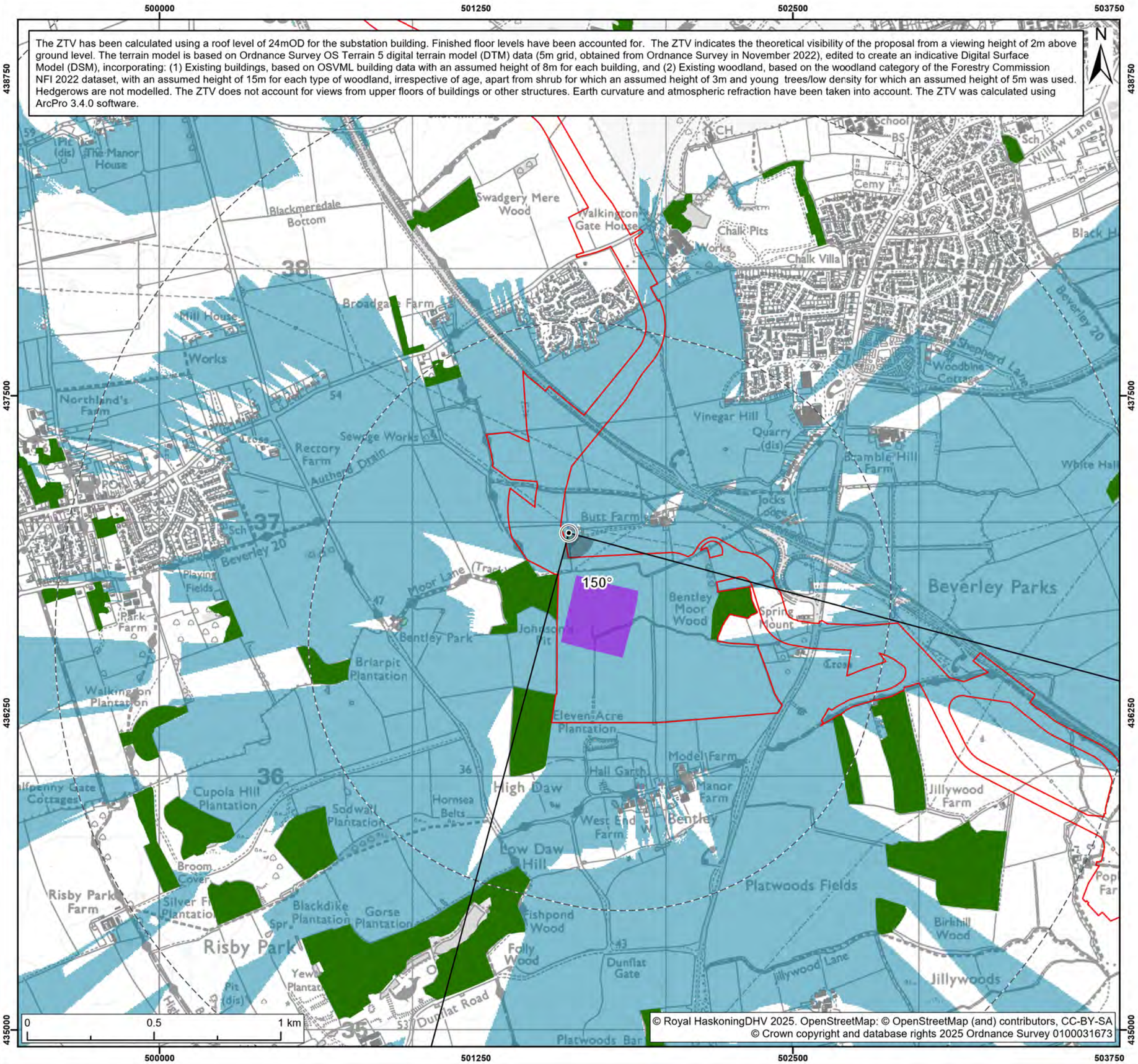
Vertical field of view:	27°
Image Enlargement Factor:	96%
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 250 mm

Camera:	NIKON D750
Lens:	Nikkor AF 50mm f/1.8D
Camera height:	1.5 m (above AOD)
Date and time:	29/09/2023 10:57

Data Sources:
Topography to inform AOD heights: 1m National LiDAR programme DTM (2020), Environment Agency
3D model informed by Site option layouts and development height parameters provided by Royal Haskoning DHV on 11/12/2024.

Dogger Bank South Offshore Wind Farms: Environmental Statement Report
Figure 23-14d
Viewpoint 8: Beverley Minster Tower

The ZTV has been calculated using a roof level of 24mOD for the substation building. Finished floor levels have been accounted for. The ZTV indicates the theoretical visibility of the proposal from a viewing height of 2m above ground level. The terrain model is based on Ordnance Survey OS Terrain 5 digital terrain model (DTM) data (5m grid, obtained from Ordnance Survey in November 2022), edited to create an indicative Digital Surface Model (DSM), incorporating: (1) Existing buildings, based on OSVML building data with an assumed height of 8m for each building, and (2) Existing woodland, based on the woodland category of the Forestry Commission NFI 2022 dataset, with an assumed height of 15m for each type of woodland, irrespective of age, apart from shrub for which an assumed height of 3m and young trees/low density for which an assumed height of 5m was used. Hedgerows are not modelled. The ZTV does not account for views from upper floors of buildings or other structures. Earth curvature and atmospheric refraction have been taken into account. The ZTV was calculated using ArcPro 3.4.0 software.



Legend:

- Onshore Development Area
- Indicative Onshore Converter Station Footprint
- 1km intervals from Indicative Onshore Converter Station Footprint
- 5km from Indicative Onshore Converter Station Footprint
- Viewpoint
- Existing woodland screening
- Existing building screening

Zone of theoretical visibility

- Proposed Converter Station theoretically visible
- 90° field of view

S2	P08	10/02/2024	Suitable for Information	MS	SR	PM
S1	P07	27/02/2024	Suitable for Information	ZM	TH	PM
SUI	REV	DATE	DESCRIPTION	DRW	CHK	APR

Title:

Viewpoint CH2: Anti Aircraft Battery at Butt Farm

Figure: 23-15a | Drawing No: PC2340_LUC_ON_ZZ_DR_Z_23-15a

Co-ordinate system: British National Grid | Page Size: A3 | Scale: 1:15,000

Project: Dogger Bank South Offshore Wind Farms

Report: Dogger Bank South: Environmental Statement

Royal HaskoningDHV
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RWE

LUC

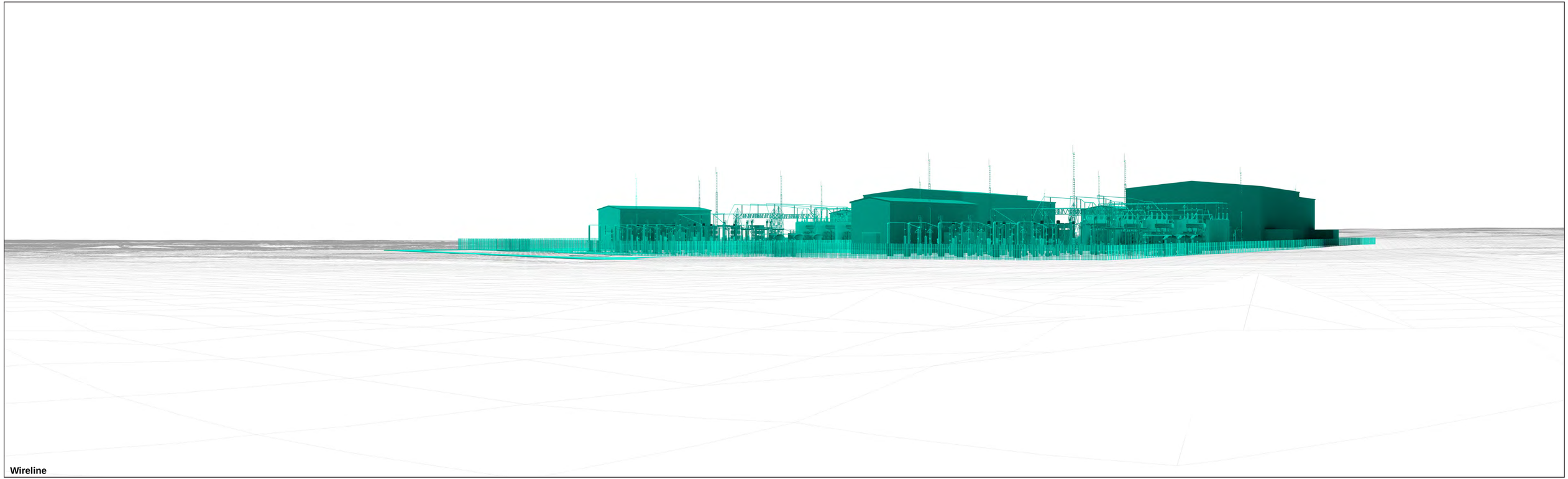
OS reference:	501616 E 436959 N
AOD (Above Ordnance Datum):	38.38 m
Direction of view:	150°
Horizontal field of view:	90° (cylindrical projection)

Vertical field of view:	27°
Image Enlargement Factor:	96%
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 250 mm

Camera:	NIKON D750
Lens:	Nikkor AF 50mm f/1.8D
Camera height:	1.5 m (above AOD)
Date and time:	17/01/2023 13:09

Data Sources:
Topography to inform AOD heights: 1m National LiDAR programme DTM (2020), Environment Agency
3D model informed by Site option layouts and development height parameters provided by Royal Haskoning DHV on 11/12/2024.

Dogger Bank South Offshore Wind Farms: Environmental Statement Report
Figure 23-15a1
Cultural Heritage Viewpoint 2: Anti Aircraft Battery at Butt Farm



LUC

OS reference:	501616 E 436959 N
AOD (Above Ordnance Datum):	38.38 m
Direction of view:	150°
Horizontal field of view:	90° (cylindrical projection)

Vertical field of view:	27°
Image Enlargement Factor:	96%
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 250 mm

Camera:	-
Lens:	-
Camera height:	1.5m (above bove AOD)
Date and time:	-

Data Sources:
Topography to inform AOD heights: 1m National LiDAR programme DTM (2020), Environment Agency
3D model informed by Site option layouts and development height parameters provided by Royal Haskoning DHV on 11/12/2024.

Dogger Bank South Offshore Wind Farms: Environmental Statement Report
Figure 23-15a2
Cultural Heritage Viewpoint 2: Anti Aircraft Battery at Butt Farm

LUC

OS reference:	501616 E 436959 N
AOD (Above Ordnance Datum):	38.38 m
Direction of view:	150°
Horizontal field of view:	90° (cylindrical projection)

Vertical field of view:	27°
Image Enlargement Factor:	96%
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 250 mm

Camera:	NIKON D750
Lens:	Nikkor AF 50mm f/1.8D
Camera height:	1.5 m (above AOD)
Date and time:	17/01/2023 13:09

Data Sources:
Topography to inform AOD heights: 1m National LiDAR programme DTM (2020), Environment Agency
3D model informed by Site option layouts and development height parameters provided by Royal Haskoning DHV on 11/12/2024.

Dogger Bank South Offshore Wind Farms: Environmental Statement Report
Figure 23-15a3
Cultural Heritage Viewpoint 2: Anti Aircraft Battery at Butt Farm

LUC

OS reference:	501616 E 436959 N
AOD (Above Ordnance Datum):	38.38 m
Direction of view:	150°
Horizontal field of view:	90° (cylindrical projection)

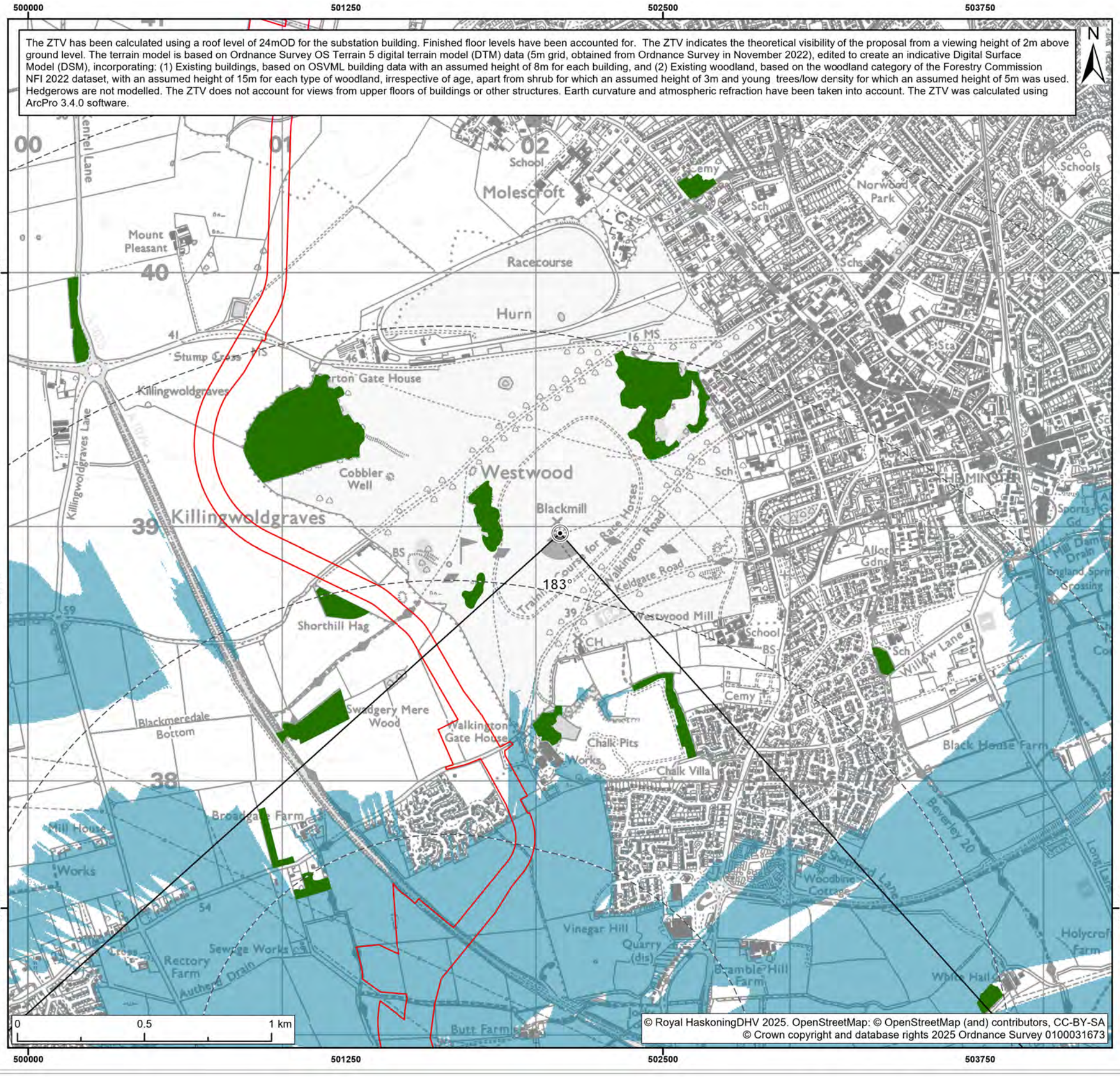
Vertical field of view:	27°
Image Enlargement Factor:	96%
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 250 mm

Camera:	NIKON D750
Lens:	Nikkor AF 50mm f/1.8D
Camera height:	1.5 m (above AOD)
Date and time:	17/01/2023 13:09

Data Sources:
Topography to inform AOD heights: 1m National LiDAR programme DTM (2020), Environment Agency
3D model informed by Site option layouts and development height parameters provided by Royal Haskoning DHV on 11/12/2024.

Dogger Bank South Offshore Wind Farms: Environmental Statement Report
Figure 23-15a4
Cultural Heritage Viewpoint 2: Anti Aircraft Battery at Butt Farm

The ZTV has been calculated using a roof level of 24mOD for the substation building. Finished floor levels have been accounted for. The ZTV indicates the theoretical visibility of the proposal from a viewing height of 2m above ground level. The terrain model is based on Ordnance Survey OS Terrain 5 digital terrain model (DTM) data (5m grid, obtained from Ordnance Survey in November 2022), edited to create an indicative Digital Surface Model (DSM), incorporating: (1) Existing buildings, based on OSVML building data with an assumed height of 8m for each building, and (2) Existing woodland, based on the woodland category of the Forestry Commission NFI 2022 dataset, with an assumed height of 15m for each type of woodland, irrespective of age, apart from shrub for which an assumed height of 3m and young trees/low density for which an assumed height of 5m was used. Hedgerows are not modelled. The ZTV does not account for views from upper floors of buildings or other structures. Earth curvature and atmospheric refraction have been taken into account. The ZTV was calculated using ArcPro 3.4.0 software.



Legend:

- Onshore Development Area
- Indicative Onshore Converter Station Footprint
- 1km intervals from Indicative Onshore Converter Station Footprint
- 5km from Indicative Onshore Converter Station Footprint
- Viewpoint
- Existing woodland screening
- Existing building screening

Zone of theoretical visibility

- Proposed Converter Station theoretically visible
- 90° field of view

S2	P08	10/02/2024	Suitable for Information	MS	SR	PM
S1	P07	27/02/2024	Suitable for Information	ZM	TH	PM
SUI	REV	DATE	DESCRIPTION	DRW	CHK	APR

Title:

Viewpoint CH3: SM's and LB at Black Mill

Figure: 23-15b | Drawing No: PC2340_LUC_ON_ZZ_DR_Z_23-15b

Co-ordinate system:	Page Size:	Scale:
British National Grid	A3	1:15,000

Project:

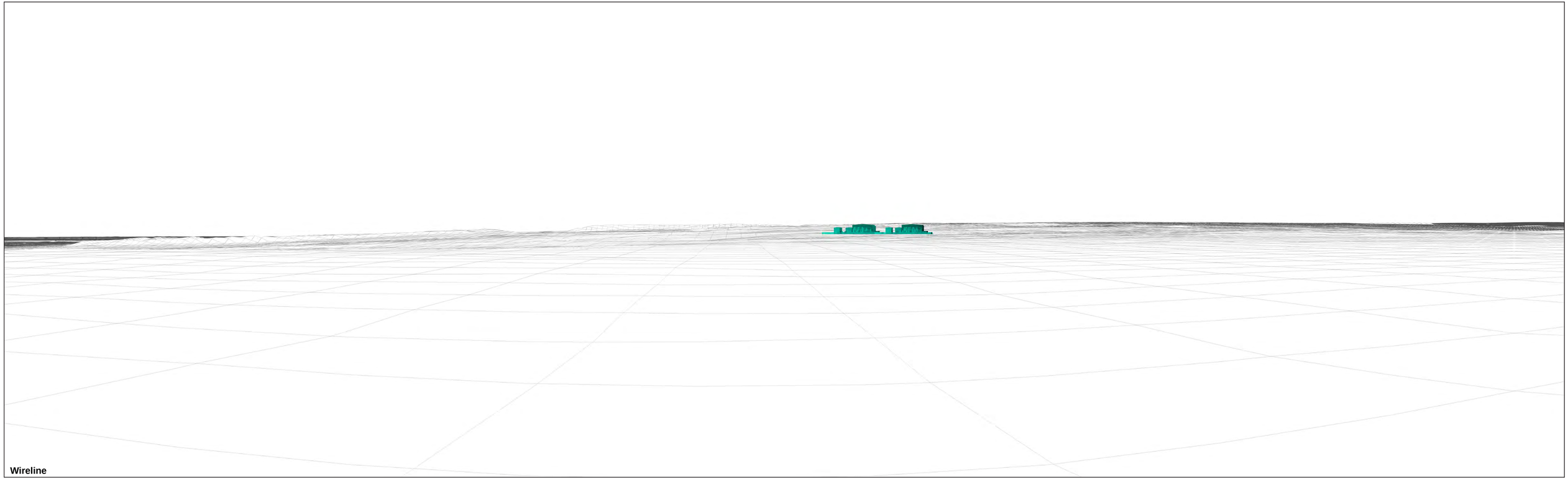
Dogger Bank South Offshore Wind Farms

Report:

Dogger Bank South: Environmental Statement

Royal HaskoningDHV
Enhancing Society Together

RWE



LUC

OS reference:	502095 E 438975 N
AOD (Above Ordnance Datum):	39.57 m
Direction of view:	183°
Horizontal field of view:	90° (cylindrical projection)

Vertical field of view:	27°
Image Enlargement Factor:	96%
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 250 mm

Camera:	-
Lens:	-
Camera height:	1.5m (above bove AOD)
Date and time:	-

Data Sources:
Topography to inform AOD heights: 1m National LiDAR programme DTM (2020), Environment Agency
3D model informed by Site option layouts and development height parameters provided by Royal Haskoning DHV on 11/12/2024.

Dogger Bank South Offshore Wind Farms: Environmental Statement Report
Figure 23-15b1
Cultural Heritage Viewpoint 3: SM's and LB at Black Mill

LUC

OS reference:	502095 E 438975 N
AOD (Above Ordnance Datum):	39.57 m
Direction of view:	183°
Horizontal field of view:	90° (cylindrical projection)

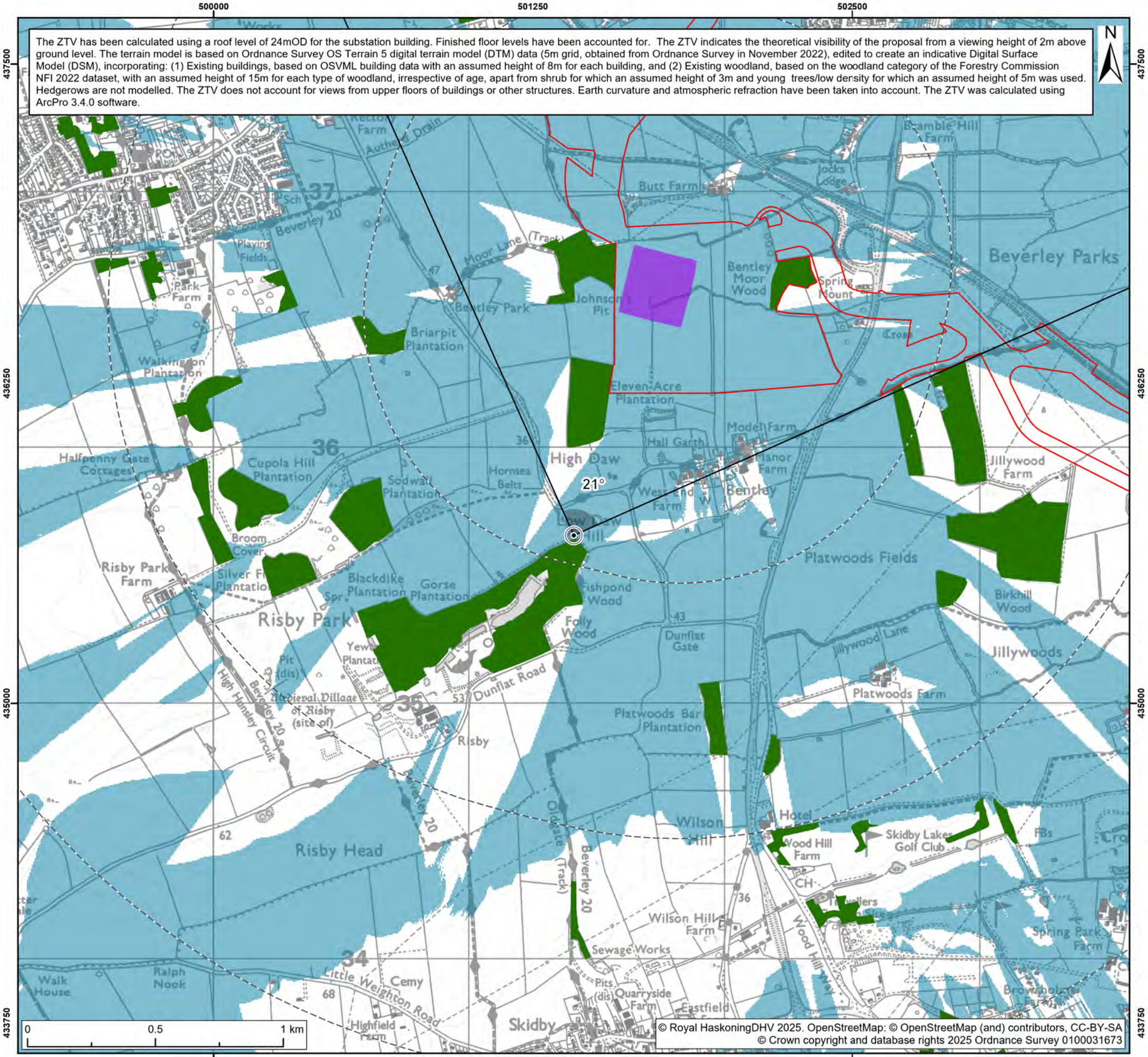
Vertical field of view:	27°
Image Enlargement Factor:	96%
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 250 mm

Camera:	NIKON D750
Lens:	Nikkor AF 50mm f/1.8D
Camera height:	1.5 m (above AOD)
Date and time:	17/01/2023 13:43

Data Sources:
Topography to inform AOD heights: 1m National LiDAR programme DTM (2020), Environment Agency
3D model informed by Site option layouts and development height parameters provided by Royal Haskoning DHV on 11/12/2024.

Dogger Bank South Offshore Wind Farms: Environmental Statement Report
Figure 23-15b2
Cultural Heritage Viewpoint 3: SM's and LB at Black Mill

The ZTV has been calculated using a roof level of 24mOD for the substation building. Finished floor levels have been accounted for. The ZTV indicates the theoretical visibility of the proposal from a viewing height of 2m above ground level. The terrain model is based on Ordnance Survey OS Terrain 5 digital terrain model (DTM) data (5m grid, obtained from Ordnance Survey in November 2022), edited to create an indicative Digital Surface Model (DSM), incorporating: (1) Existing buildings, based on OSVML building data with an assumed height of 8m for each building, and (2) Existing woodland, based on the woodland category of the Forestry Commission NFI 2022 dataset, with an assumed height of 15m for each type of woodland, irrespective of age, apart from shrub for which an assumed height of 3m and young trees/low density for which an assumed height of 5m was used. Hedgerows are not modelled. The ZTV does not account for views from upper floors of buildings or other structures. Earth curvature and atmospheric refraction have been taken into account. The ZTV was calculated using ArcPro 3.4.0 software.



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Legend:

- Onshore Development Area
- Indicative Onshore Converter Station Footprint
- 1km intervals from Indicative Onshore Converter Station Footprint
- 5km from Indicative Onshore Converter Station Footprint
- Viewpoint
- Existing woodland screening
- Existing building screening

Zone of theoretical visibility

- Proposed Converter Station theoretically visible
- 90° field of view

SUI	REV	DATE	DESCRIPTION	DRW	CHK	APR
S2	P08	10/02/2024	Suitable for Information	MS	SR	PM
S1	P07	27/02/2024	Suitable for Information	ZM	TH	PM

Title:

Viewpoint CH5: Risby Hall RPG

Figure: 23-15c | Drawing No: PC2340_LUC_ON_ZZ_DR_Z_23-15c

Co-ordinate system: British National Grid | Page Size: A3 | Scale: 1:15,000

Project: Dogger Bank South Offshore Wind Farms

Report: Dogger Bank South: Environmental Statement

Royal HaskoningDHV
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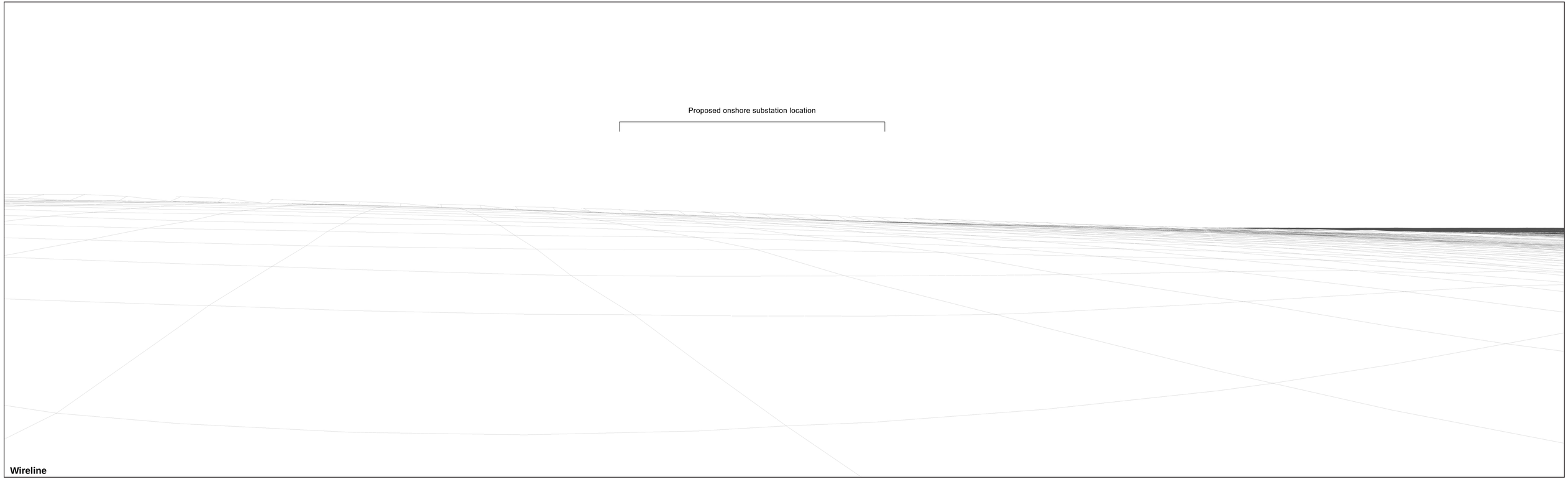


Wireline

OS reference:	501410 E 435656 N
AOD (Above Ordnance Datum):	37 m
Direction of view:	21°
Horizontal field of view:	90° (cylindrical projection)

Vertical field of view:	27°
Image Enlargement Factor:	96%
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 250 mm

Camera:	-
Lens:	-
Camera height:	1.5m (above bove AOD)
Date and time:	-

Data Sources:
Topography to inform AOD heights: 1m National LiDAR programme DTM (2020), Environment Agency
3D model informed by Site option layouts and development height parameters provided by Royal Haskoning DHV on 11/12/2024.

Dogger Bank South Offshore Wind Farms: Environmental Statement Report
Figure 23-15c1
Cultural Heritage Viewpoint 5: Risby Hall RPG

LUC

OS reference:	501410 E 435656 N
AOD (Above Ordnance Datum):	37 m
Direction of view:	21°
Horizontal field of view:	90° (cylindrical projection)

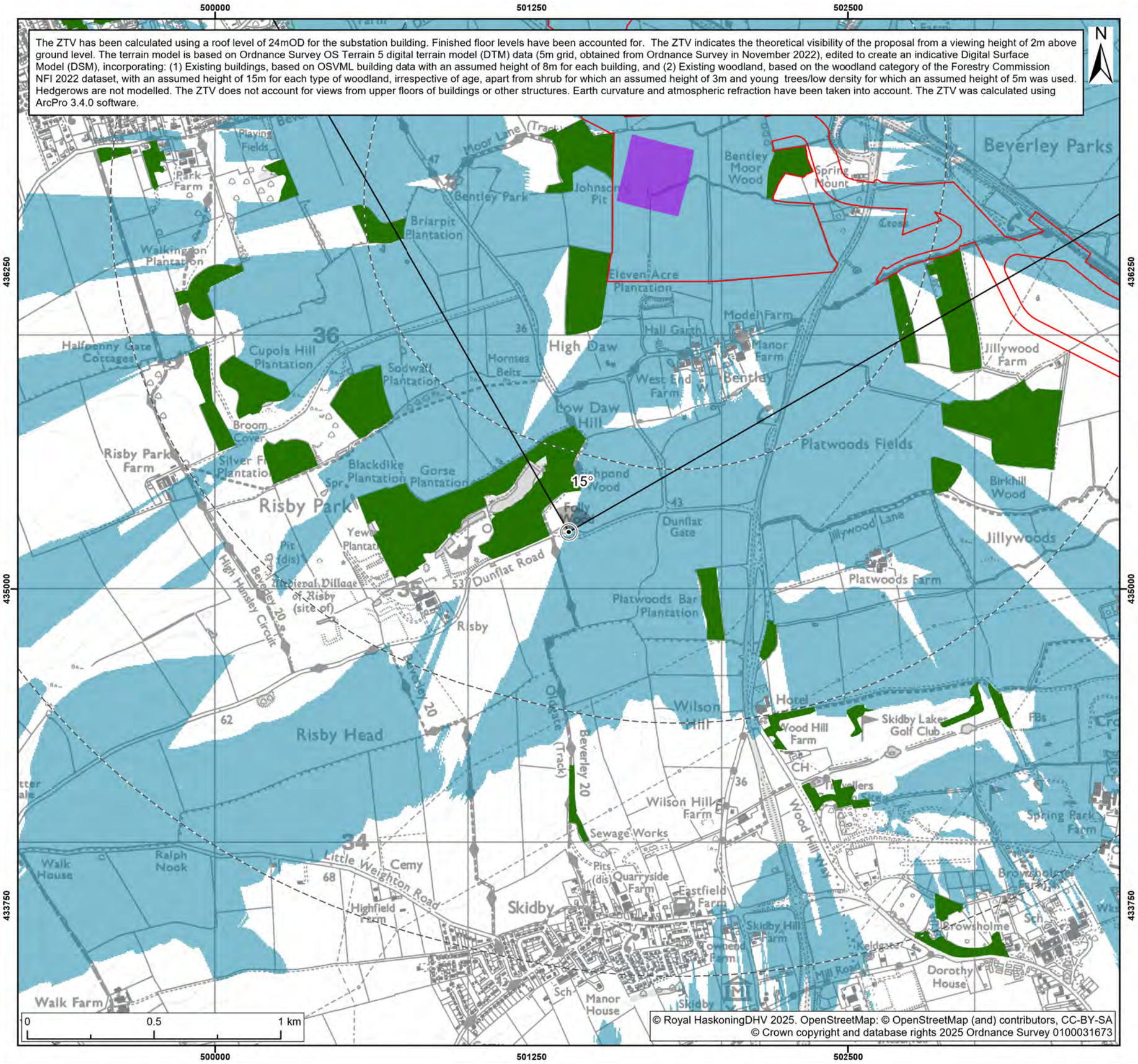
Vertical field of view:	27°
Image Enlargement Factor:	96%
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 250 mm

Camera:	NIKON D750
Lens:	Nikkor AF 50mm f/1.8D
Camera height:	1.5 m (above AOD)
Date and time:	17/01/2023 13:42

Data Sources:
Topography to inform AOD heights: 1m National LiDAR programme DTM (2020), Environment Agency
3D model informed by Site option layouts and development height parameters provided by Royal Haskoning DHV on 11/12/2024.

Dogger Bank South Offshore Wind Farms: Environmental Statement Report
Figure 23-15c2
Cultural Heritage Viewpoint 5: Risby Hall RPG

The ZTV has been calculated using a roof level of 24mOD for the substation building. Finished floor levels have been accounted for. The ZTV indicates the theoretical visibility of the proposal from a viewing height of 2m above ground level. The terrain model is based on Ordnance Survey OS Terrain 5 digital terrain model (DTM) data (5m grid, obtained from Ordnance Survey in November 2022), edited to create an indicative Digital Surface Model (DSM), incorporating: (1) Existing buildings, based on OSVML building data with an assumed height of 8m for each building, and (2) Existing woodland, based on the woodland category of the Forestry Commission NFI 2022 dataset, with an assumed height of 15m for each type of woodland, irrespective of age, apart from shrub for which an assumed height of 3m and young trees/low density for which an assumed height of 5m was used. Hedgerows are not modelled. The ZTV does not account for views from upper floors of buildings or other structures. Earth curvature and atmospheric refraction have been taken into account. The ZTV was calculated using ArcPro 3.4.0 software.



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Legend:

- Onshore Development Area
- Indicative Onshore Converter Station Footprint
- 1km intervals from Indicative Onshore Converter Station Footprint
- 5km from Indicative Onshore Converter Station Footprint
- Viewpoint
- Existing woodland screening
- Existing building screening

Zone of theoretical visibility

- Proposed Converter Station theoretically visible
- 90° field of view

S2	P08	10/02/2024	Suitable for Information	MS	SR	PM
S1	P07	27/02/2024	Suitable for Information	ZM	TH	PM
SUI	REV	DATE	DESCRIPTION	DRW	CHK	APR

Title:

Viewpoint 9: Dunflat Road

Figure: 23-16 | Drawing No: PC2340_LUC_ON_ZZ_DR_Z_23-16

Co-ordinate system:	Page Size:	Scale:
British National Grid	A3	1:15,000

Project: Dogger Bank South Offshore Wind Farms

Report: Dogger Bank South: Environmental Statement

Royal HaskoningDHV
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RWE

LUC

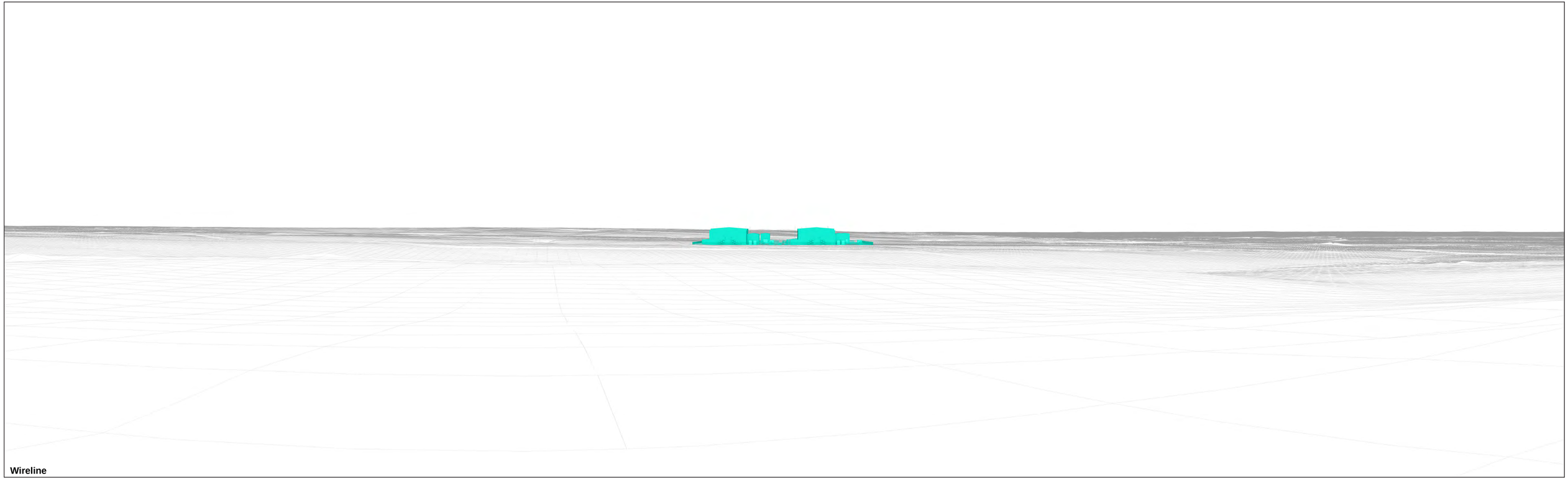
OS reference:	501397E 435224N
AOD (Above Ordnance Datum):	50.14 m
Direction of view:	15°
Horizontal field of view:	90° (cylindrical projection)

Vertical field of view:	27°
Image Enlargement Factor:	96%
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 250 mm

Camera:	NIKON D600
Lens:	Nikkor AF 50mm f/1.6D
Camera height:	1.5 m (above AOD)
Date and time:	21/11/2024 13:08

Data Sources:
Topography to inform AOD heights: 1m National LiDAR programme DTM (2020), Environment Agency
3D model informed by Site option layouts and development height parameters provided by Royal Haskoning DHV on 11/12/2024.

Dogger Bank South Offshore Wind Farms: Environmental Statement Report
Figure 23.16a
Viewpoint 9: Dunflat Road



LUC

OS reference:	501397E 435224N
AOD (Above Ordnance Datum):	50.14 m
Direction of view:	15°
Horizontal field of view:	90° (cylindrical projection)

Vertical field of view:	27°
Image Enlargement Factor:	96%
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 250 mm

Camera:	- n/a
Lens:	- n/a
Camera height:	- 1.5 m (above AOD)
Date and time:	- n/a

Data Sources:
Topography to inform AOD heights: 1m National LiDAR programme DTM (2020), Environment Agency
3D model informed by Site option layouts and development height parameters provided by Royal Haskoning DHV on 11/12/2024.

Dogger Bank South Offshore Wind Farms: Environmental Statement Report
Figure 23.16b
Viewpoint 9: Dunflat Road

LUC

OS reference:	501397E 435224N
AOD (Above Ordnance Datum):	50.14 m
Direction of view:	15°
Horizontal field of view:	90° (cylindrical projection)

Vertical field of view:	27°
Image Enlargement Factor:	96%
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 250 mm

Camera:	NIKON D600
Lens:	Nikkor AF 50mm f/1.6D
Camera height:	1.5 m (above AOD)
Date and time:	21/11/2024 13:08

Data Sources:
Topography to inform AOD heights: 1m National LiDAR programme DTM (2020), Environment Agency
3D model informed by Site option layouts and development height parameters provided by Royal Haskoning DHV on 11/12/2024.

Dogger Bank South Offshore Wind Farms: Environmental Statement Report
Figure 23.16c
Viewpoint 9: Dunflat Road

LUC

OS reference:	501397E 435224N
AOD (Above Ordnance Datum):	50.14 m
Direction of view:	15°
Horizontal field of view:	90° (cylindrical projection)

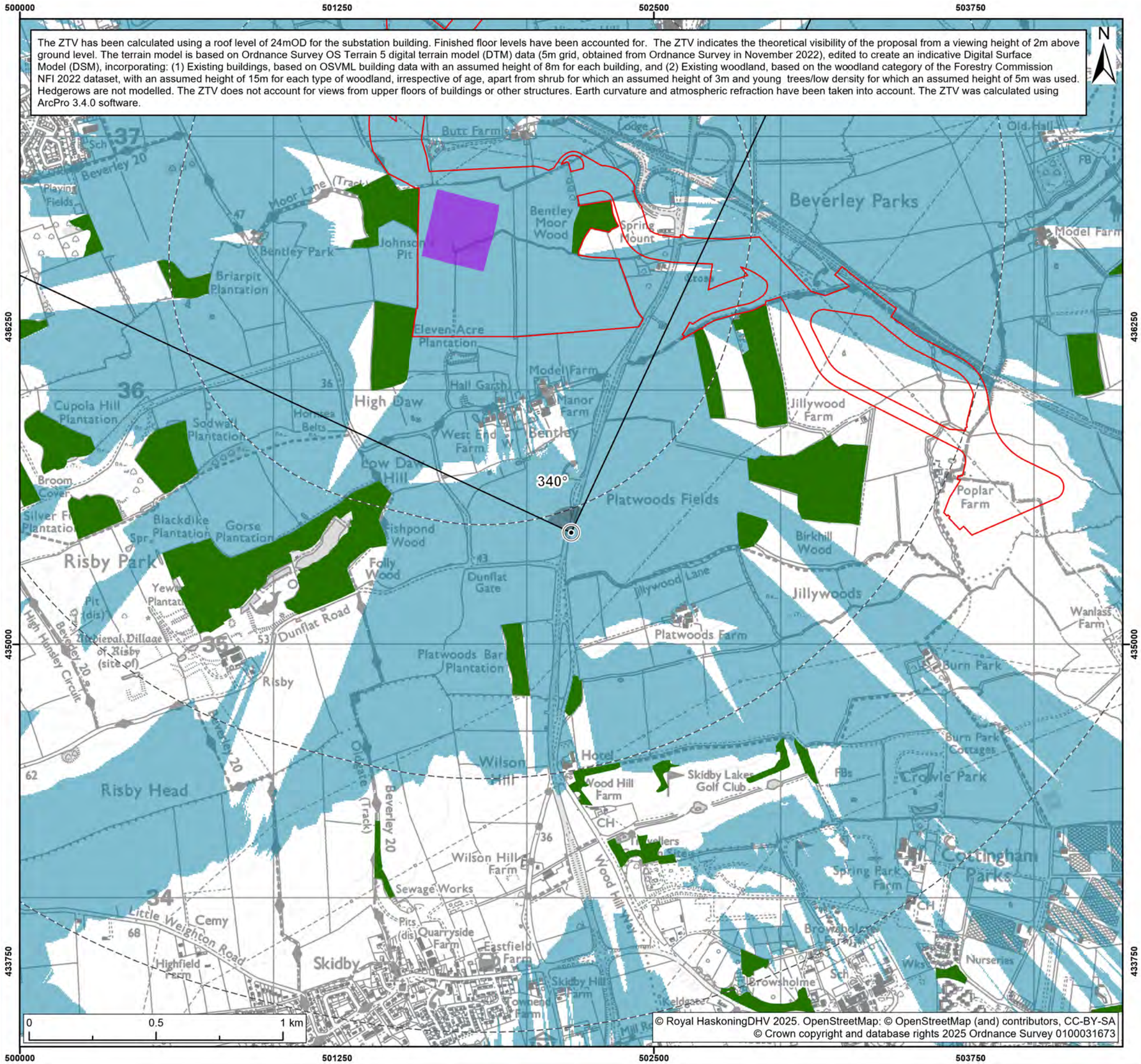
Vertical field of view:	27°
Image Enlargement Factor:	96%
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 250 mm

Camera:	NIKON D600
Lens:	Nikkor AF 50mm f/1.6D
Camera height:	1.5 m (above AOD)
Date and time:	21/11/2024 13:08

Data Sources:
Topography to inform AOD heights: 1m National LiDAR programme DTM (2020), Environment Agency
3D model informed by Site option layouts and development height parameters provided by Royal Haskoning DHV on 11/12/2024.

Dogger Bank South Offshore Wind Farms: Environmental Statement Report
Figure 23.16d
Viewpoint 9: Dunflat Road

The ZTV has been calculated using a roof level of 24mOD for the substation building. Finished floor levels have been accounted for. The ZTV indicates the theoretical visibility of the proposal from a viewing height of 2m above ground level. The terrain model is based on Ordnance Survey OS Terrain 5 digital terrain model (DTM) data (5m grid, obtained from Ordnance Survey in November 2022), edited to create an indicative Digital Surface Model (DSM), incorporating: (1) Existing buildings, based on OSVML building data with an assumed height of 8m for each building, and (2) Existing woodland, based on the woodland category of the Forestry Commission NFI 2022 dataset, with an assumed height of 15m for each type of woodland, irrespective of age, apart from shrub for which an assumed height of 3m and young trees/low density for which an assumed height of 5m was used. Hedgerows are not modelled. The ZTV does not account for views from upper floors of buildings or other structures. Earth curvature and atmospheric refraction have been taken into account. The ZTV was calculated using ArcPro 3.4.0 software.



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Legend:

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- Indicative Onshore Converter Station Footprint
- 1km intervals from Indicative Onshore Converter Station Footprint
- 5km from Indicative Onshore Converter Station Footprint
- Viewpoint
- Existing woodland screening
- Existing building screening

Zone of theoretical visibility

- Proposed Converter Station theoretically visible
- 90° field of view

SUI	REV	DATE	DESCRIPTION	DRW	CHK	APR
S2	P08	10/02/2024	Suitable for Information	MS	SR	PM
S1	P07	27/02/2024	Suitable for Information	ZM	TH	PM

Title:

Viewpoint 10: A164

Figure: 23-17 | Drawing No: PC2340_LUC_ON_ZZ_DR_Z_23-17

Co-ordinate system:	Page Size:	Scale:
British National Grid	A3	1:15,000

Project:

Dogger Bank South Offshore Wind Farms

Report:

Dogger Bank South: Environmental Statement

Royal HaskoningDHV
Enhancing Society Together

RWE

Baseline photograph

LUC

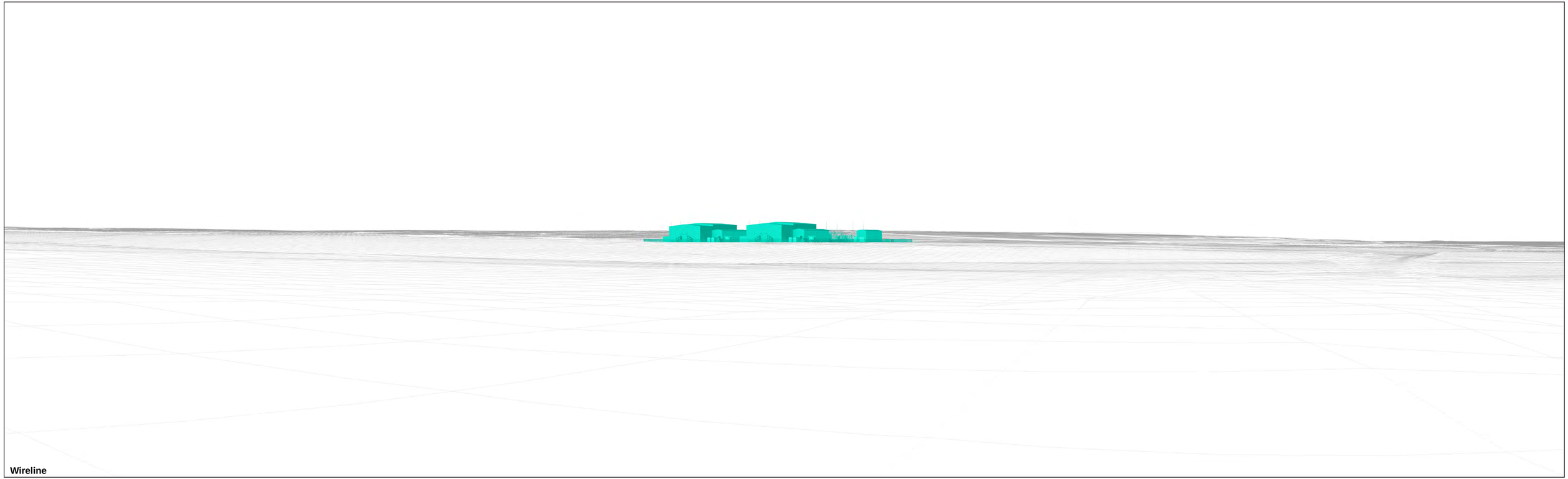
OS reference:	502174 E 435439 N
AOD (Above Ordnance Datum):	32.42 m
Direction of view:	340°
Horizontal field of view:	90° (cylindrical projection)

Vertical field of view:	27°
Image Enlargement Factor:	96%
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 250 mm

Camera:	NIKON D600
Lens:	Nikkor AF 50mm f/1.6D
Camera height:	1.5 m (above AOD)
Date and time:	21/11/2024 12:26

Data Sources:
Topography to inform AOD heights: 1m National LiDAR programme DTM (2020), Environment Agency
3D model informed by Site option layouts and development height parameters provided by Royal Haskoning DHV on 11/12/2024.

Dogger Bank South Offshore Wind Farms: Environmental Statement Report
Figure 23.17a
Viewpoint 10: A164



OS reference:	502174 E 435439 N
AOD (Above Ordnance Datum):	32.42 m
Direction of view:	340°
Horizontal field of view:	90° (cylindrical projection)

Vertical field of view:	27°
Image Enlargement Factor:	96%
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 250 mm

Camera:	- n/a
Lens:	- n/a
Camera height:	- 1.5m (above AOD)
Date and time:	- n/a

Data Sources:
Topography to inform AOD heights: 1m National LiDAR programme DTM (2020), Environment Agency
3D model informed by Site option layouts and development height parameters provided by Royal Haskoning DHV on 11/12/2024.

Dogger Bank South Offshore Wind Farms: Environmental Statement Report
Figure 23.17b
Viewpoint 10: A164

Visualisation showing Proposed Onshore Converter Stations

LUC

OS reference:	502174 E 435439 N
AOD (Above Ordnance Datum):	32.42 m
Direction of view:	340°
Horizontal field of view:	90° (cylindrical projection)

Vertical field of view:	27°
Image Enlargement Factor:	96%
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 250 mm

Camera:	NIKON D600
Lens:	Nikkor AF 50mm f/1.6D
Camera height:	1.5 m (above AOD)
Date and time:	21/11/2024 12:26

Data Sources:
Topography to inform AOD heights: 1m National LiDAR programme DTM (2020), Environment Agency
3D model informed by Site option layouts and development height parameters provided by Royal Haskoning DHV on 11/12/2024.

Dogger Bank South Offshore Wind Farms: Environmental Statement Report
Figure 23.17c
Viewpoint 10: A164

Visualisation showing Proposed Onshore Converter Stations - year 10 mitigation planting

LUC

OS reference:	502174 E 435439 N
AOD (Above Ordnance Datum):	32.42 m
Direction of view:	340°
Horizontal field of view:	90° (cylindrical projection)

Vertical field of view:	27°
Image Enlargement Factor:	96%
Paper size:	841 x 297 mm (half A1)
Correct printed image size:	820 x 250 mm

Camera:	NIKON D600
Lens:	Nikkor AF 50mm f/1.6D
Camera height:	1.5 m (above AOD)
Date and time:	21/11/2024 12:26

Data Sources:
Topography to inform AOD heights: 1m National LiDAR programme DTM (2020), Environment Agency
3D model informed by Site option layouts and development height parameters provided by Royal Haskoning DHV on 11/12/2024.

Dogger Bank South Offshore Wind Farms: Environmental Statement Report
Figure 23.17d
Viewpoint 10: A164