

**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 3)

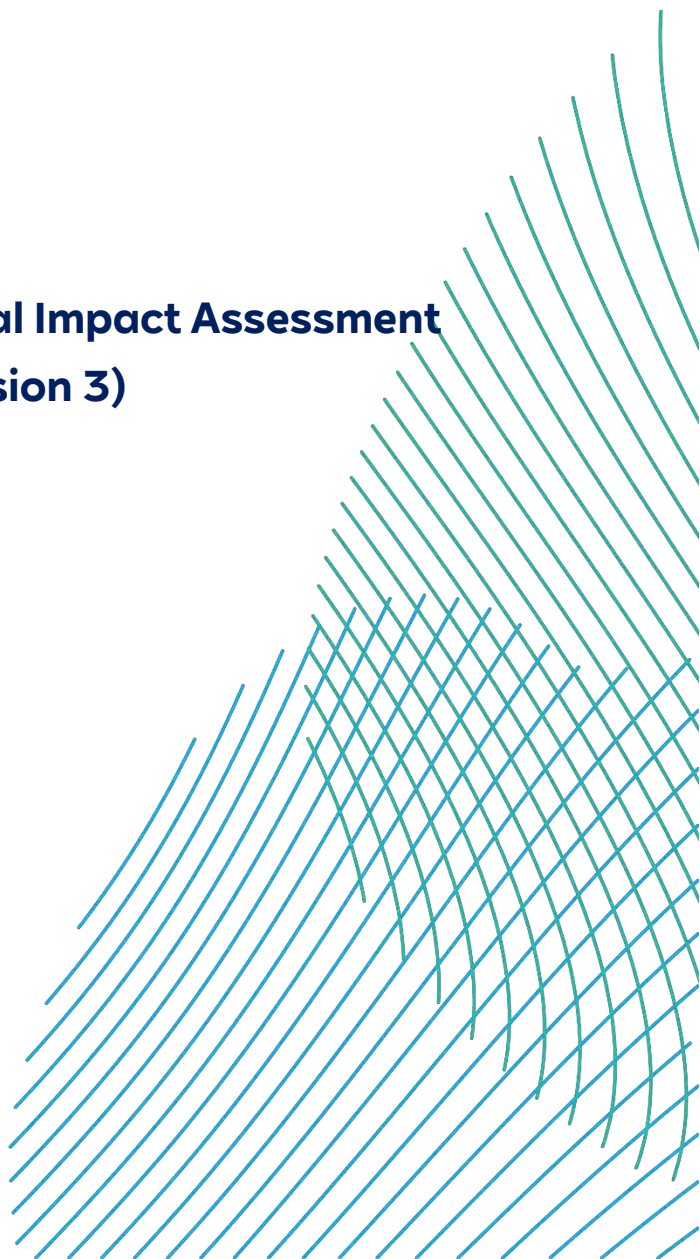
February 2025

Application Reference: 7.23.1

APFP Regulation: 5(2)(a)

Revision: 03

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 3)		
Document Number:	004300167-03	Contractor Reference Number:	PC2340-RHD-ON-ZZ-RP-Z-0106

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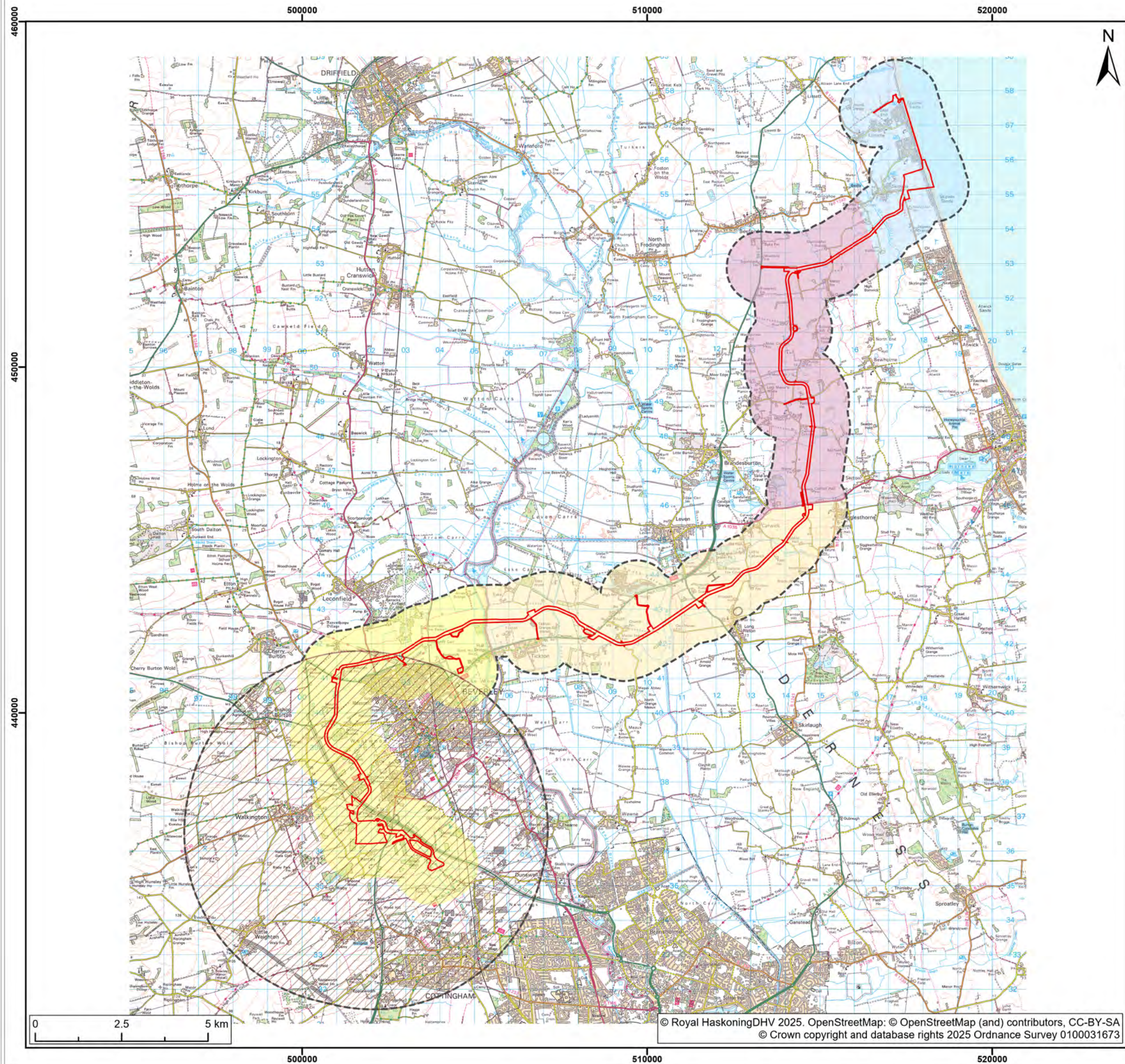
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Rev No.	Date	Status/Reason for Issue	Author	Checked by	Approved by
01	June 2024	Final for DCO Application	LUC	RWE	RWE
02	October 2024	Submission at Pre-Examination Procedural Deadline	LUC	RWE	RWE
03	February 2025	Submission for Deadline 2	LUC	RWE	RWE

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 <ul style="list-style-type: none"> 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.



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

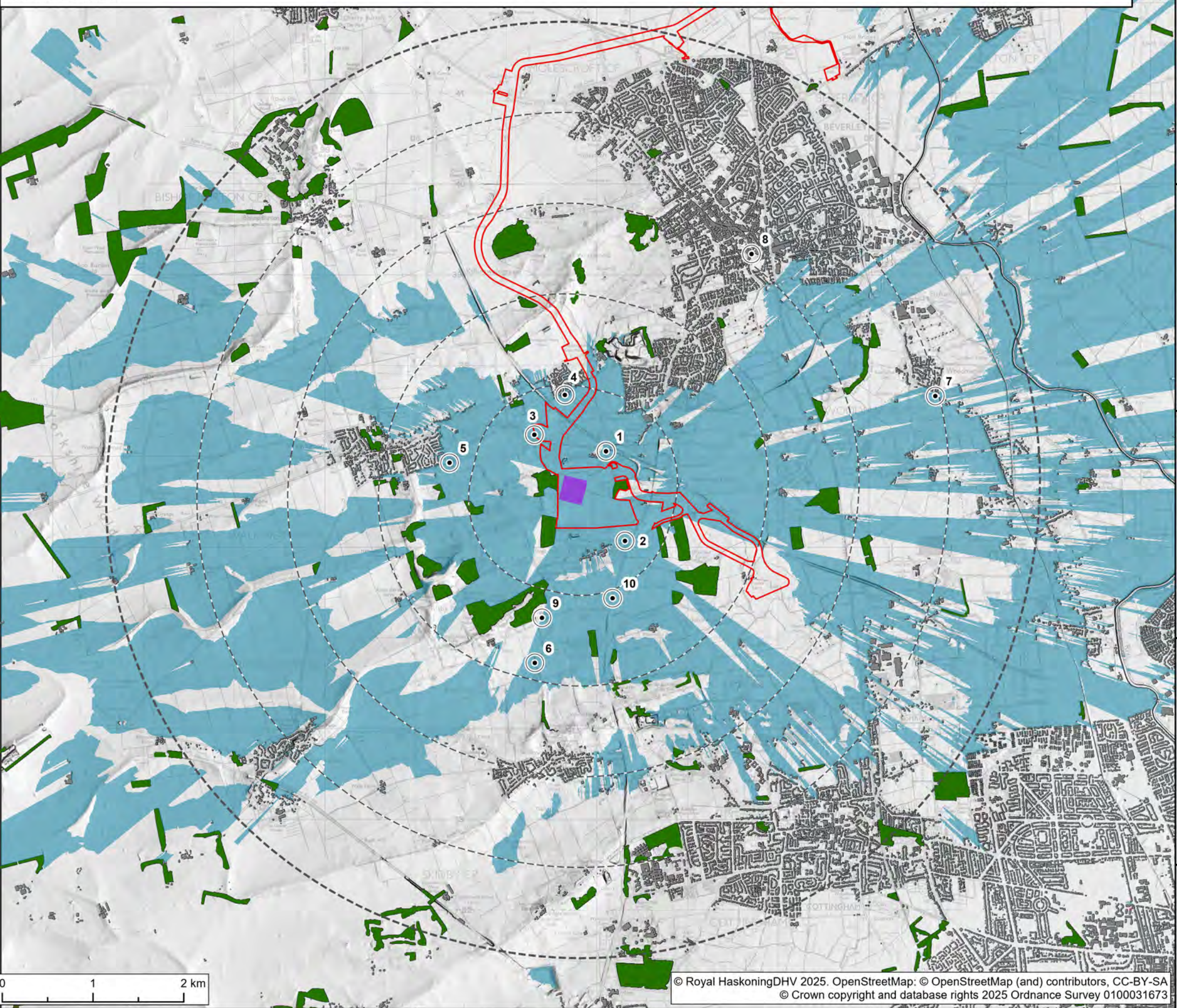
Title:

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	



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 location
 - 1: Butt Farm
 - 2: Copleflat 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

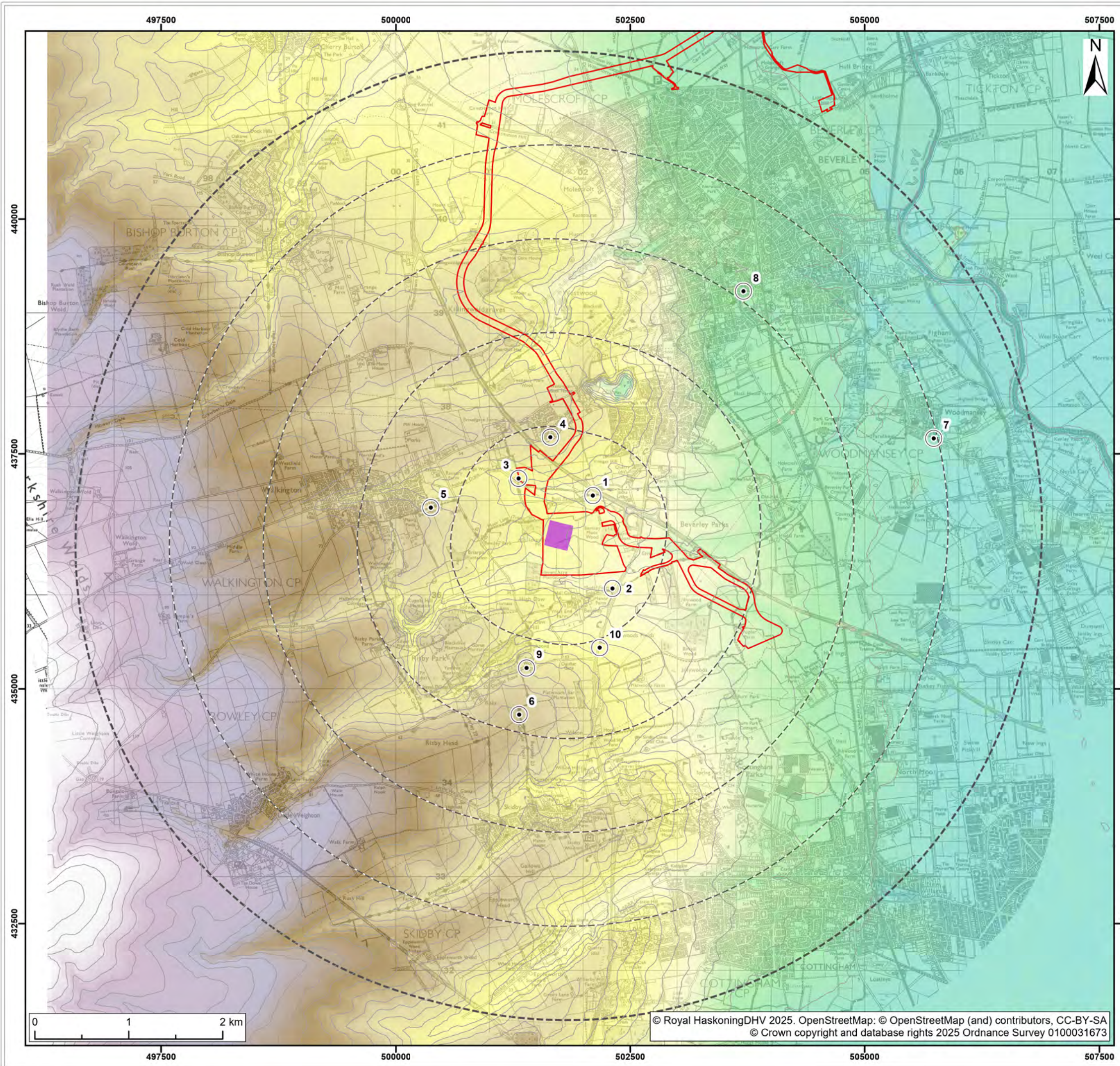
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S5	P07	27/02/2024	Suitable for Information	ZM	TH	PM
S4	P06	20/11/2023	Suitable for Information	TH	EH	PM
S3	P02	22/03/2023	Suitable for Information	HS	TH	PM
SUI	REV	DATE	DESCRIPTION	DRW	CHK	APR

Title:
Onshore Substation Zone of Theoretical Visibility

Figure: 23-2a Drawing No: PC2340_LUC_ON_ZZ_DR_Z_23_2

Co-ordinate system: British National Grid	Page Size: A3	Scale: 1:45,000
Project: Dogger Bank South Offshore Wind Farms	Report: Dogger Bank South: Environmental Statement	





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: Coppelflat 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

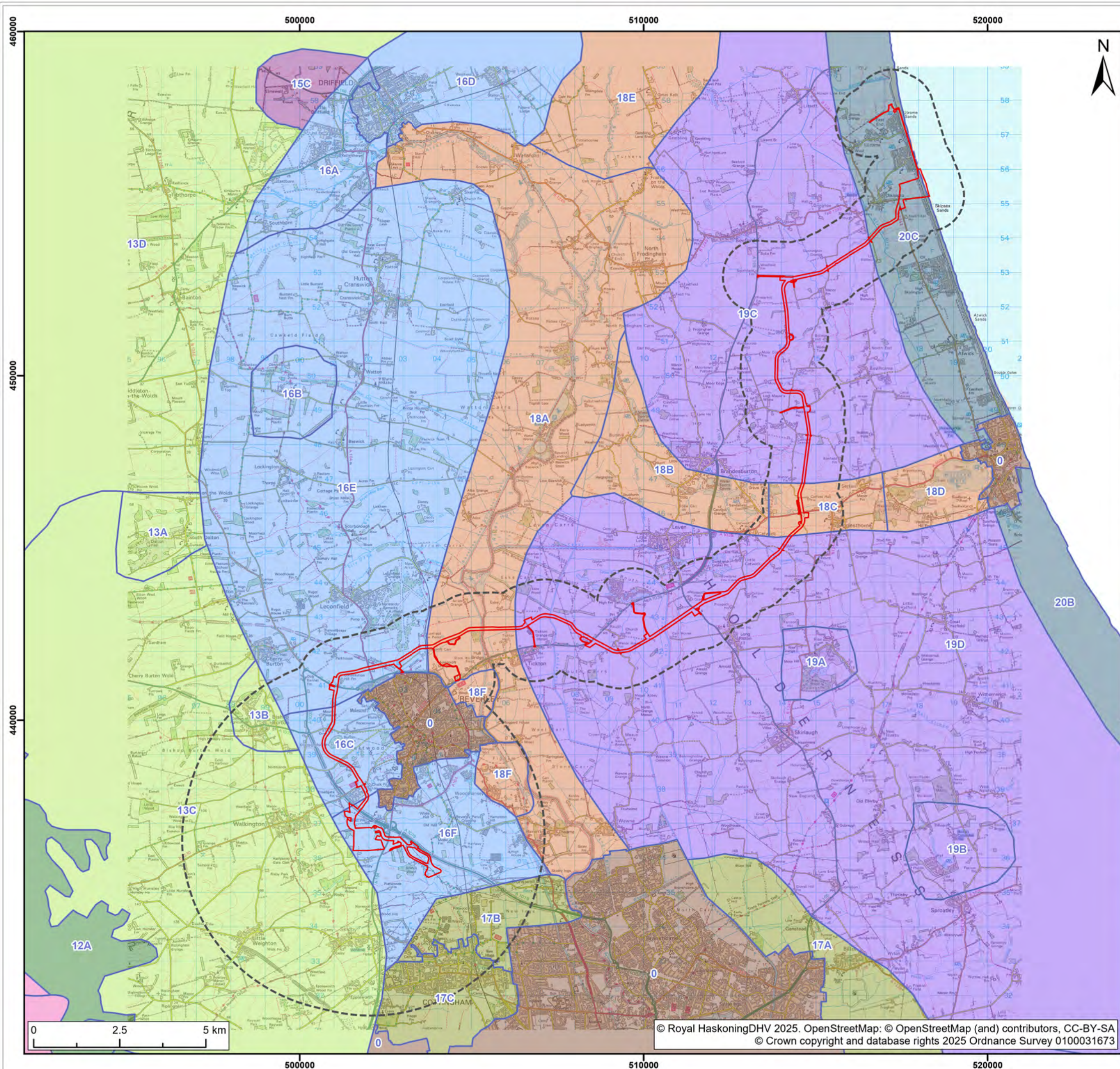
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S1	P01	08/10/2024	Suitable for Information	MS	TH	EH
SUI	REV	DATE	DESCRIPTION	DRW	CHK	APR

Title:

Topography of the Study Area

Figure: 23-2b		Drawing No: PC2340_LUC_ON_ZZ_DR_Z_23_2_1	
Co-ordinate system: British National Grid		Page Size: A3	Scale: 1:45,000
Project: Dogger Bank South Offshore Wind Farms		Report: Dogger Bank South: Environmental Statement	





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)

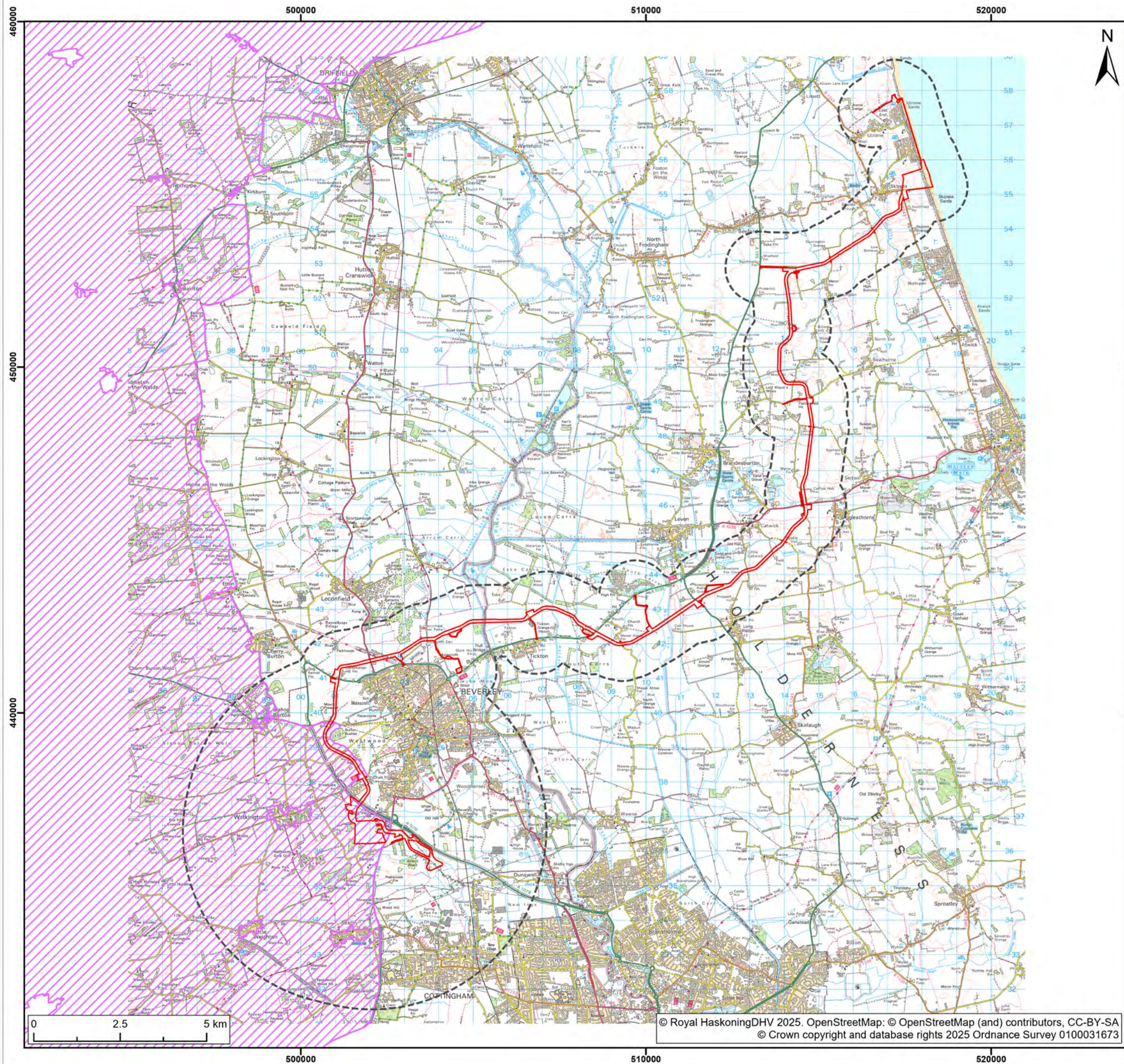
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S5	P07	27/02/2024	Suitable for Information	ZM	TH	PM
S4	P06	20/11/2023	Suitable for Information	TH	EH	PM
S3	P02	22/03/2023	Suitable for Information	HS	TH	PM
SUI	REV	DATE	DESCRIPTION	DRW	CHK	APR

Title:

Landscape Character

Figure: 23-3 Drawing No: PC2340_LUC_ON_ZZ_DR_Z_23_3

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	



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

Important Landscape Area source: East Riding of Yorkshire Council

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

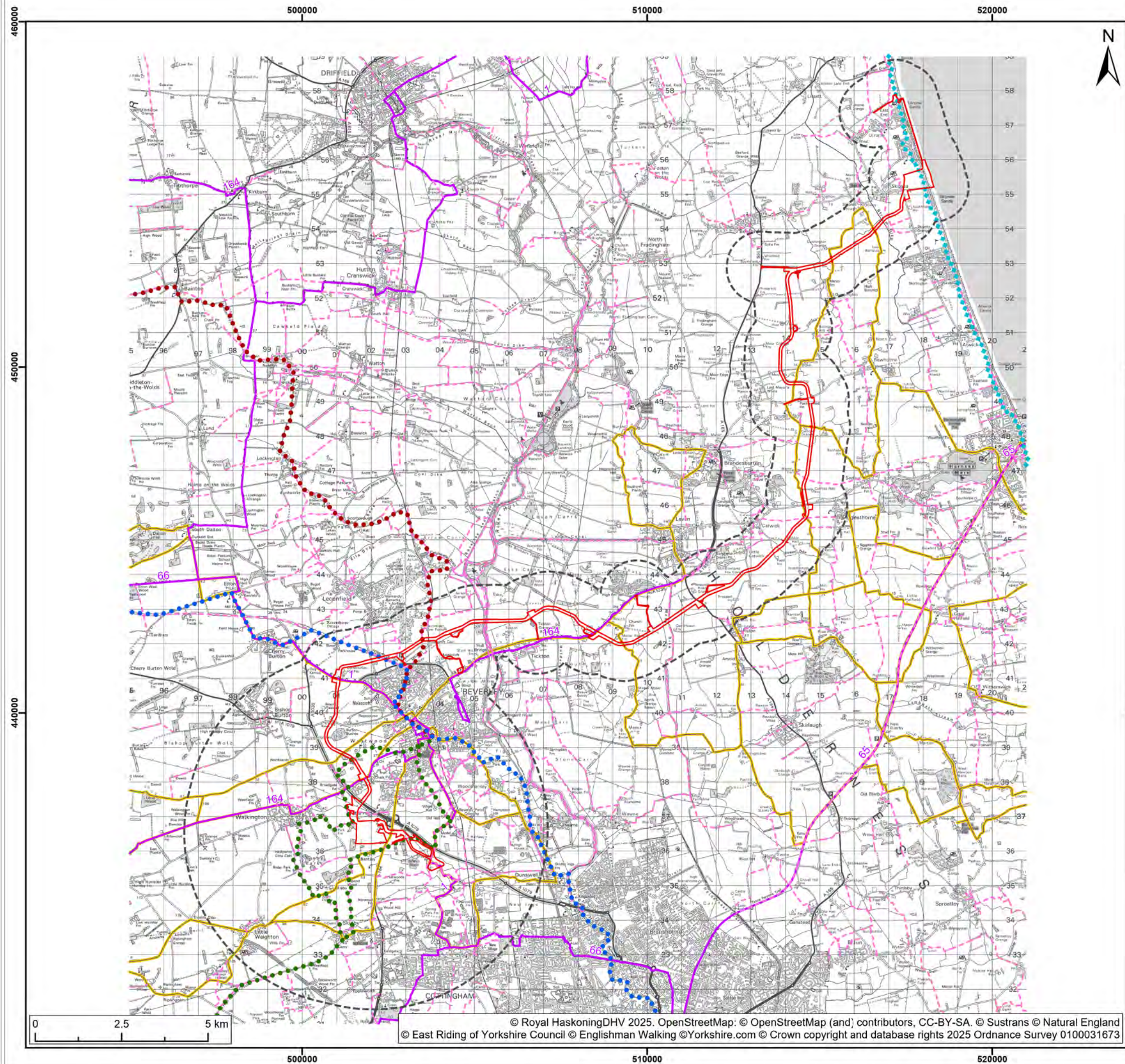
Title:

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





- 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

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:

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	





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

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
SUI	REV	DATE	DESCRIPTION	DRW	CHK	APR

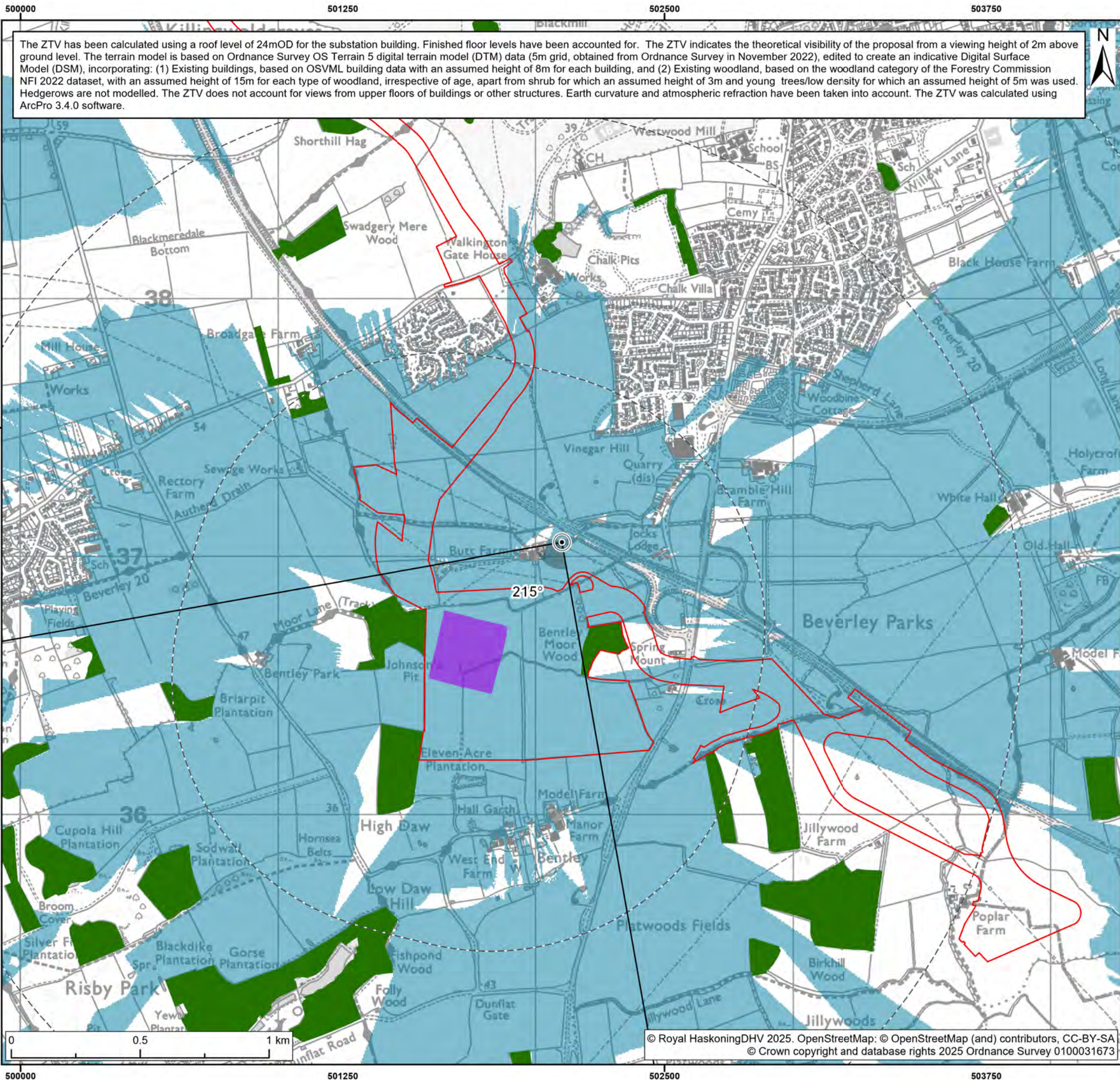
Title:

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

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: British National Grid		Page Size: A3	Scale: 1:15,000
Project: Dogger Bank South Offshore Wind Farms		Report: Dogger Bank South: Environmental Statement	





Baseline photograph - Summer



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

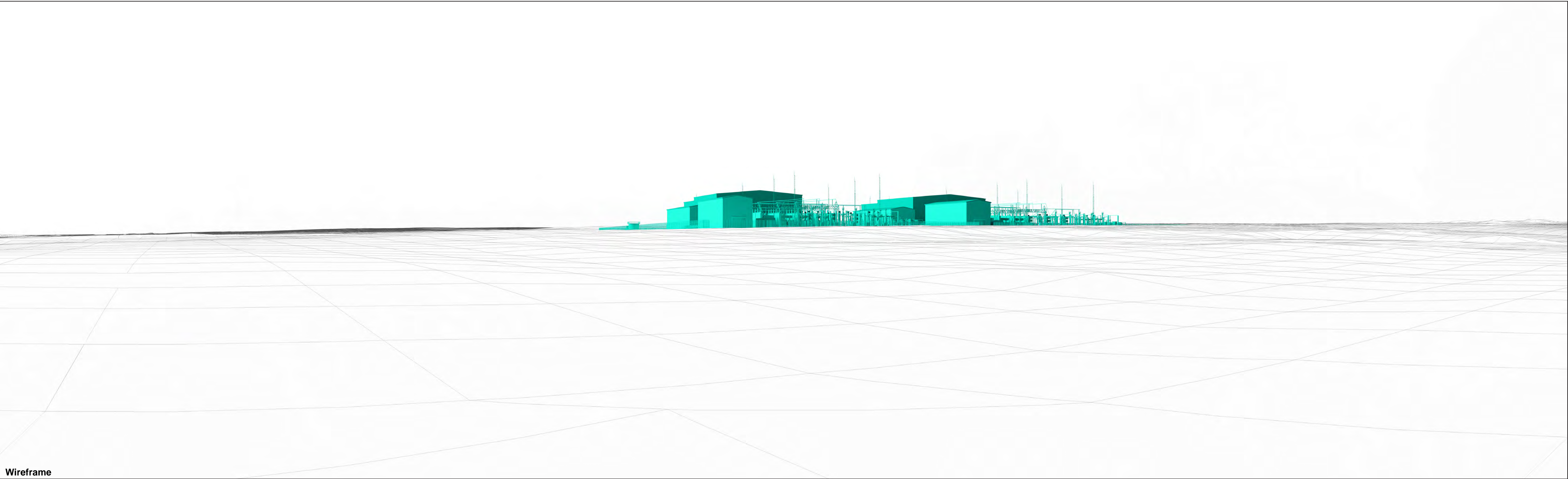
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Correct printed image size:	820 x 250 mm

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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.



Baseline photograph - Winter



Wireframe



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.



Visualisation showing Proposed Onshore Converter Stations



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

Vertical field of view:	27°
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Paper size:	841 x 297 mm (half A1)
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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.



Visualisation showing Proposed Onshore Converter Stations - year 10 mitigation planting

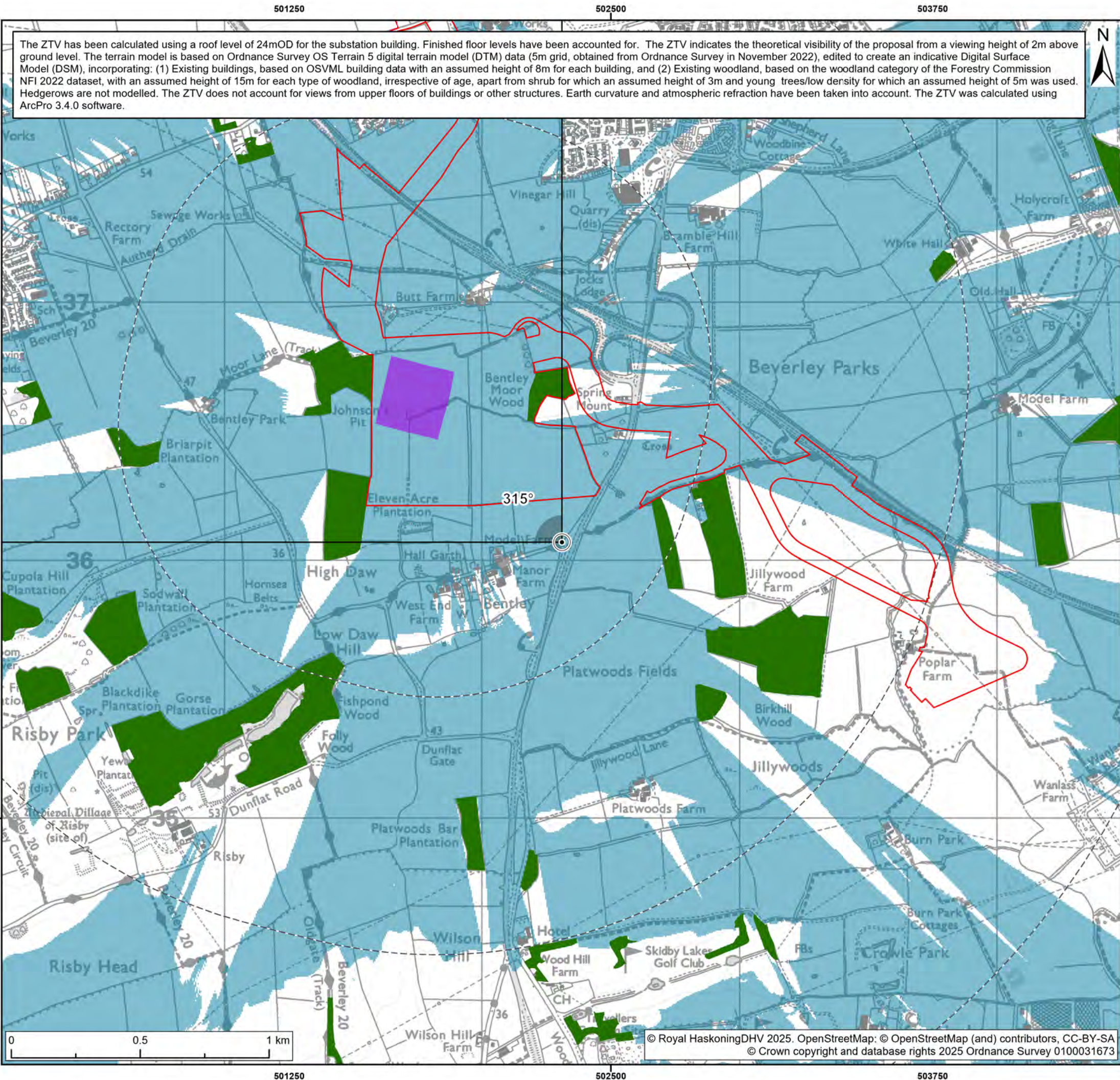


OS reference:	502102 E 437056N
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Vertical field of view:	27°
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Lens:	Nikkor AF 50mm f/1.6D
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Data Sources:
Topography to inform AOD heights: 1m National 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.



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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

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: British National Grid		Page Size: A3	Scale: 1:15,000
Project: Dogger Bank South Offshore Wind Farms		Report: Dogger Bank South: Environmental Statement	





Baseline photograph - Summer



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

Vertical field of view: 27°
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Correct printed image size: 820 x 250 mm

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AOD: 23.73m
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Data Sources:
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3D model informed by Site option layouts and development height parameters provided by Royal Haskoning
DHV on 11/12/2024.



Baseline photograph - Winter

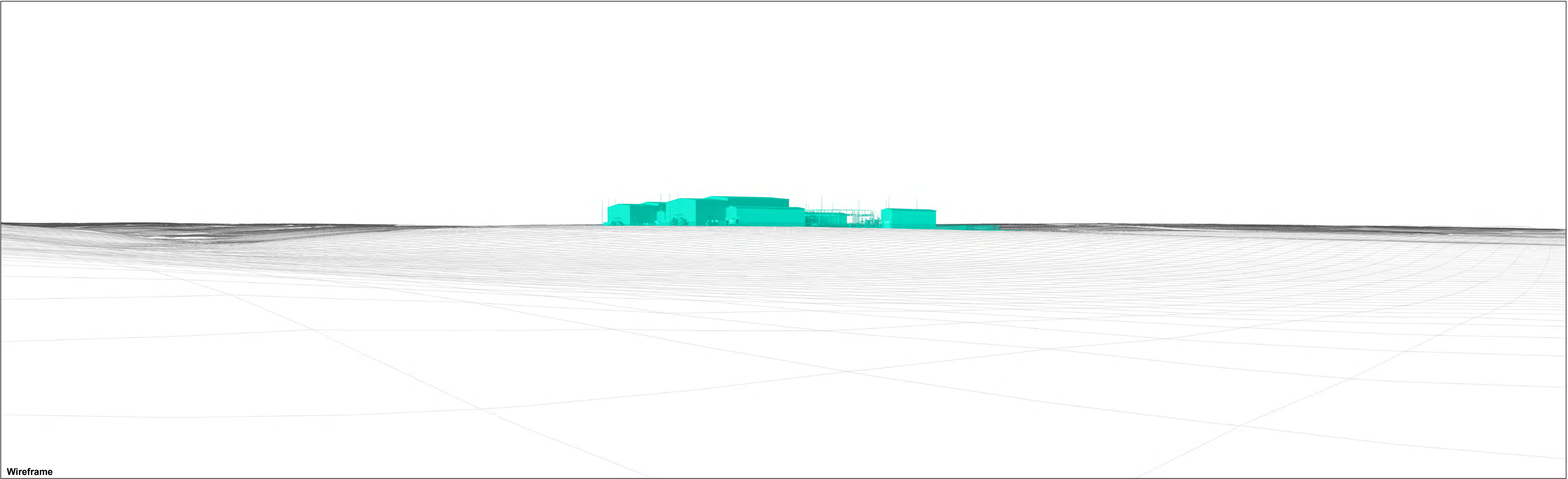


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Data Sources:
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DHV on 11/12/2024.



Wireframe



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°
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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.



Visualisation showing Proposed Onshore Converter Stations



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%
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Lens:	Nikkor AF 50mm f/1.6D
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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.



Visualisation showing Proposed Onshore Converter Stations - year 10 mitigation planting

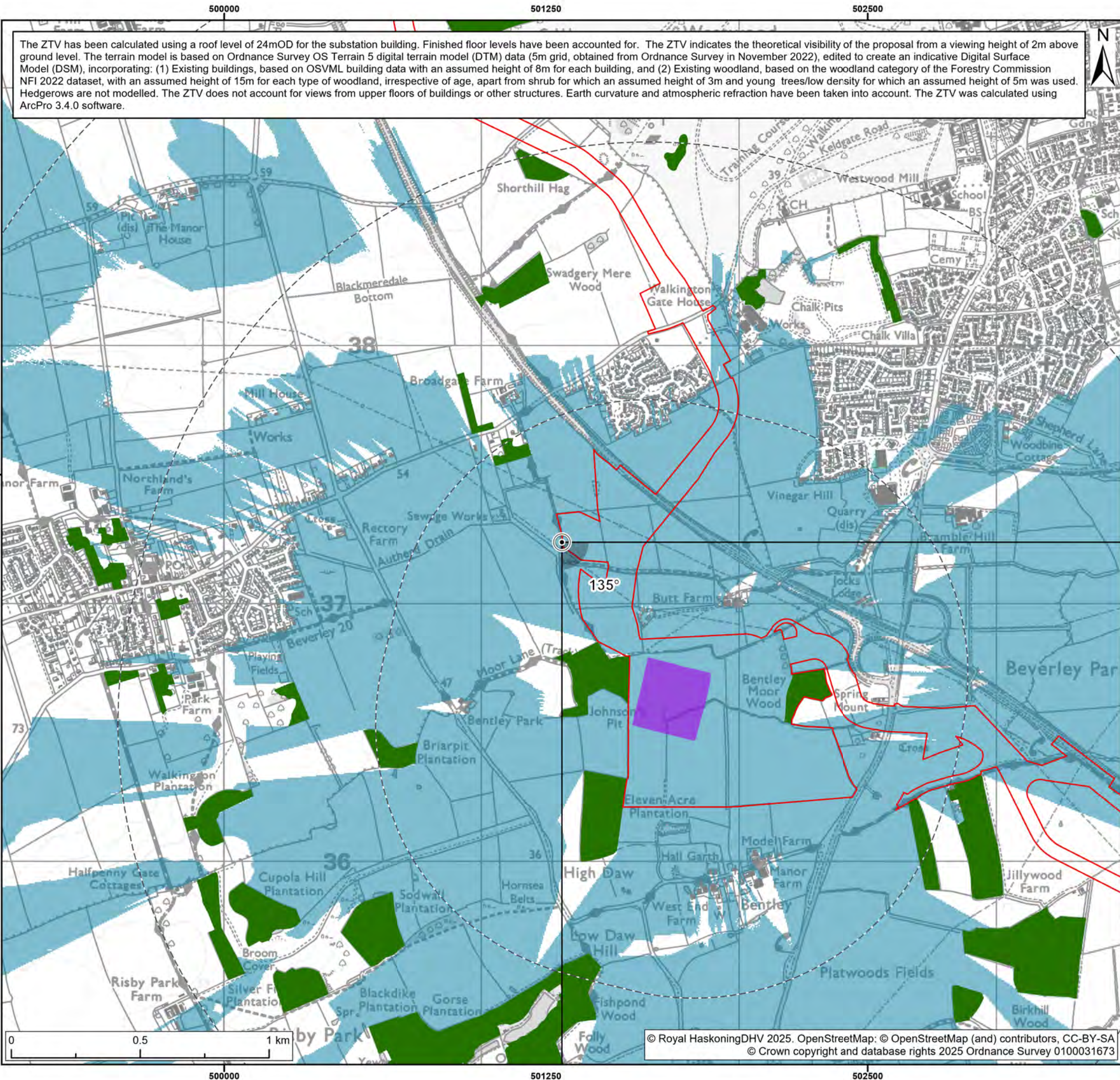


OS reference:	502310 E 436068N
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Correct printed image size:	820 x 250 mm

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.



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 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	

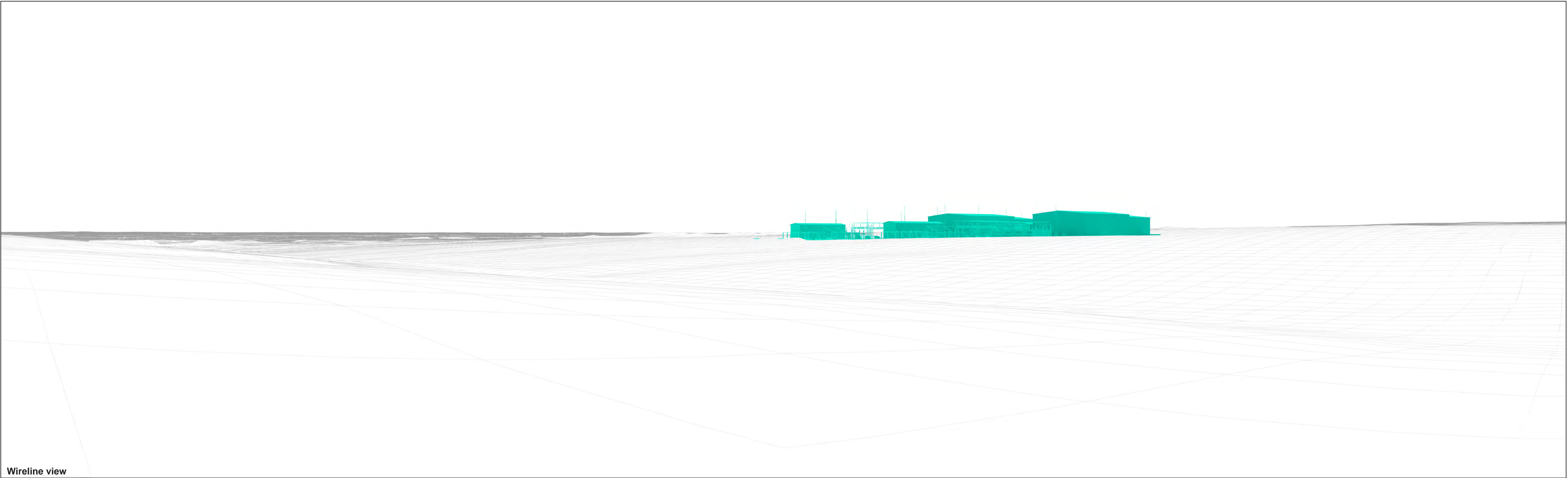


OS reference: 501312 E 437238 N
AOD (Above Ordnance Datum): 37.81 m
Direction of view: 135°
Horizontal field of view: 90° (cylindrical projection)

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.



Wireline view



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) Environment 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



Visualisation showing Proposed Onshore Converter Stations



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.



Visualisation showing Proposed Onshore Converter Stations - year 10 mitigation planting

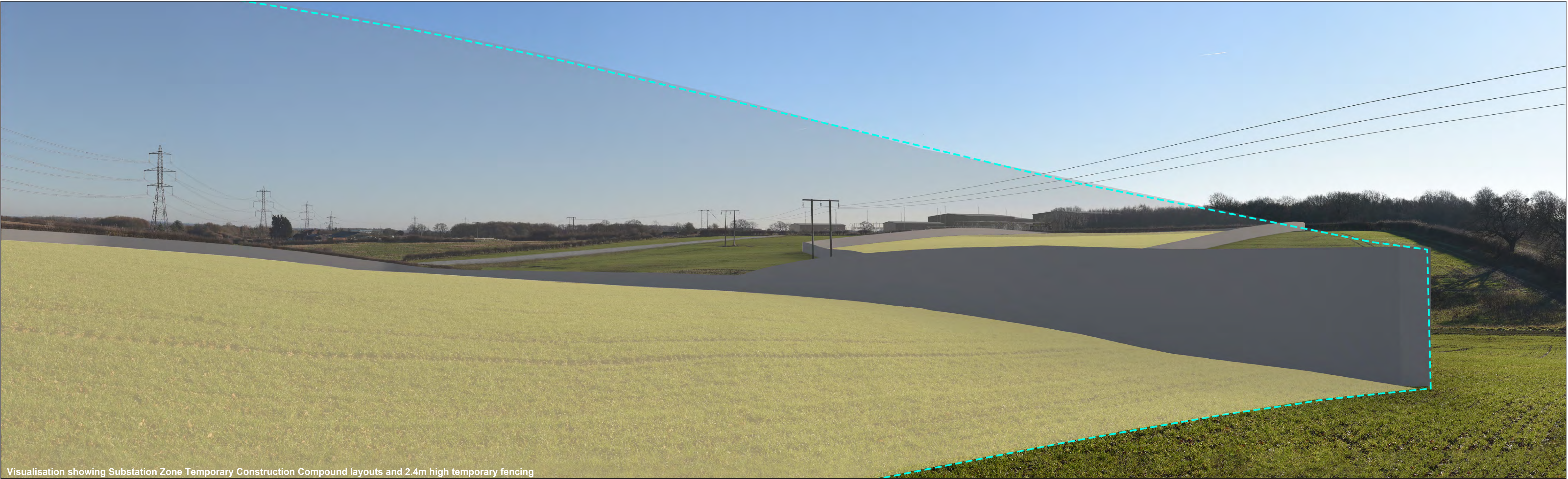


OS reference: 501312 E 437238 N
AOD (Above Ordnance Datum): 37.81 m
Direction of view: 135°
Horizontal field of view: 90° (cylindrical projection)

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.



Visualisation showing Substation Zone Temporary Construction Compound layouts and 2.4m high temporary fencing

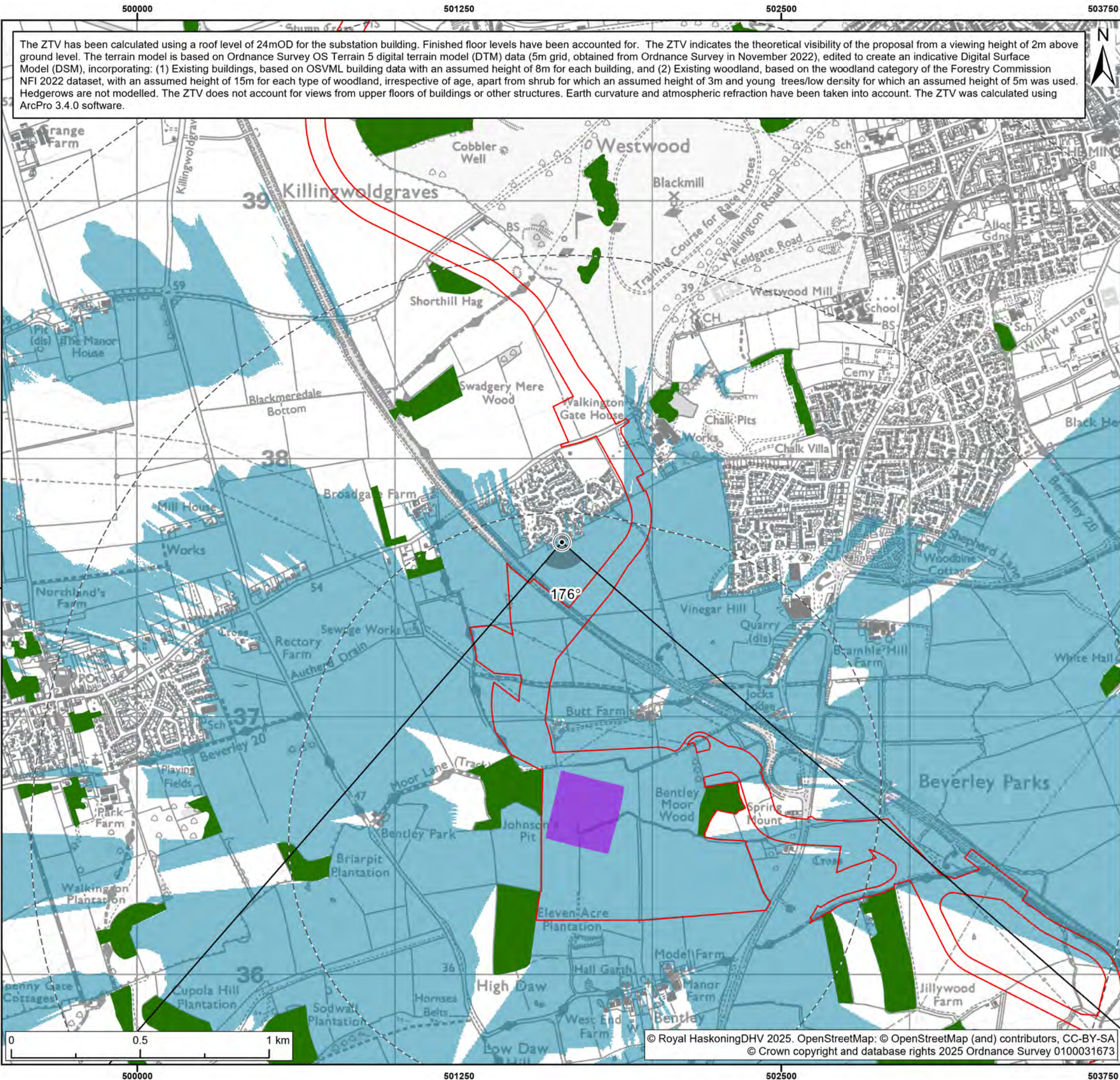


OS reference: 501312 E 437238 N
AOD (Above Ordnance Datum): 37.81 m
Direction of view: 135°
Horizontal field of view: 90° (cylindrical projection)

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.



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 4: Oriel Close, off Broadgate

Figure: 23-10	Drawing No: PC2340_LUC_ON_ZZ_DR_Z_23-10		
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	





Baseline photograph - Summer



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.



Baseline photograph - Winter

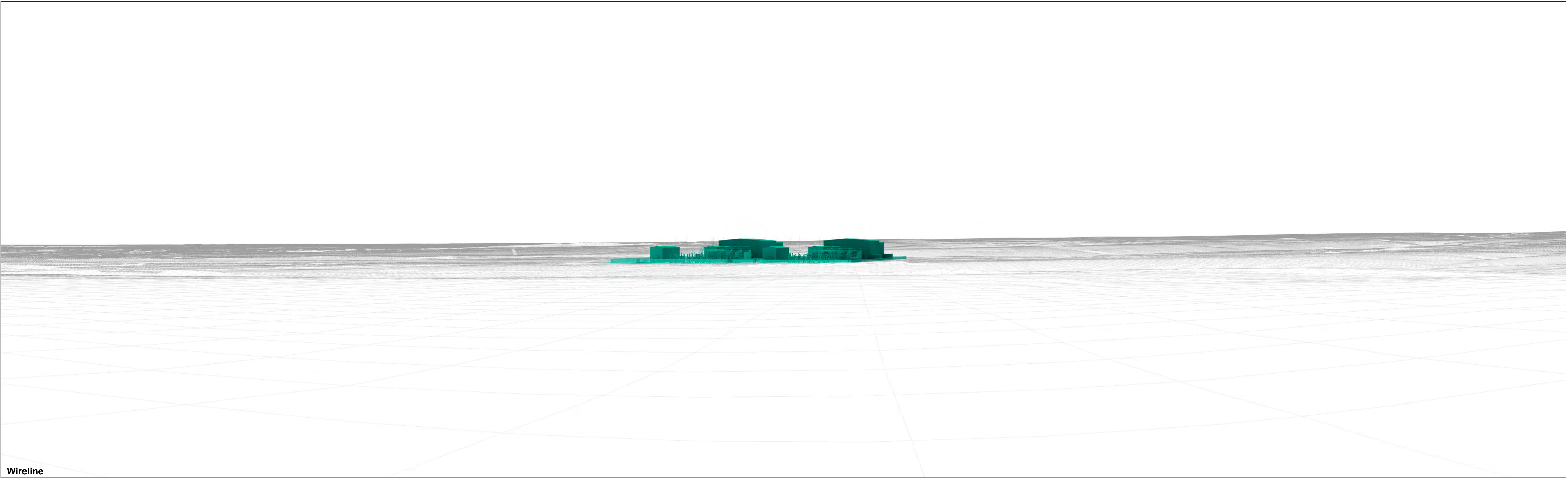


OS reference:	501649 E 437677N
AOD (Above Ordnance Datum):	51.60 m
Direction of view:	176°
Horizontal field of view:	90° (cylindrical projection)

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.



Wireline



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.



Visualisation showing Proposed Onshore Converter Stations



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.



Visualisation showing Proposed Onshore Converter Stations - year 10 mitigation planting

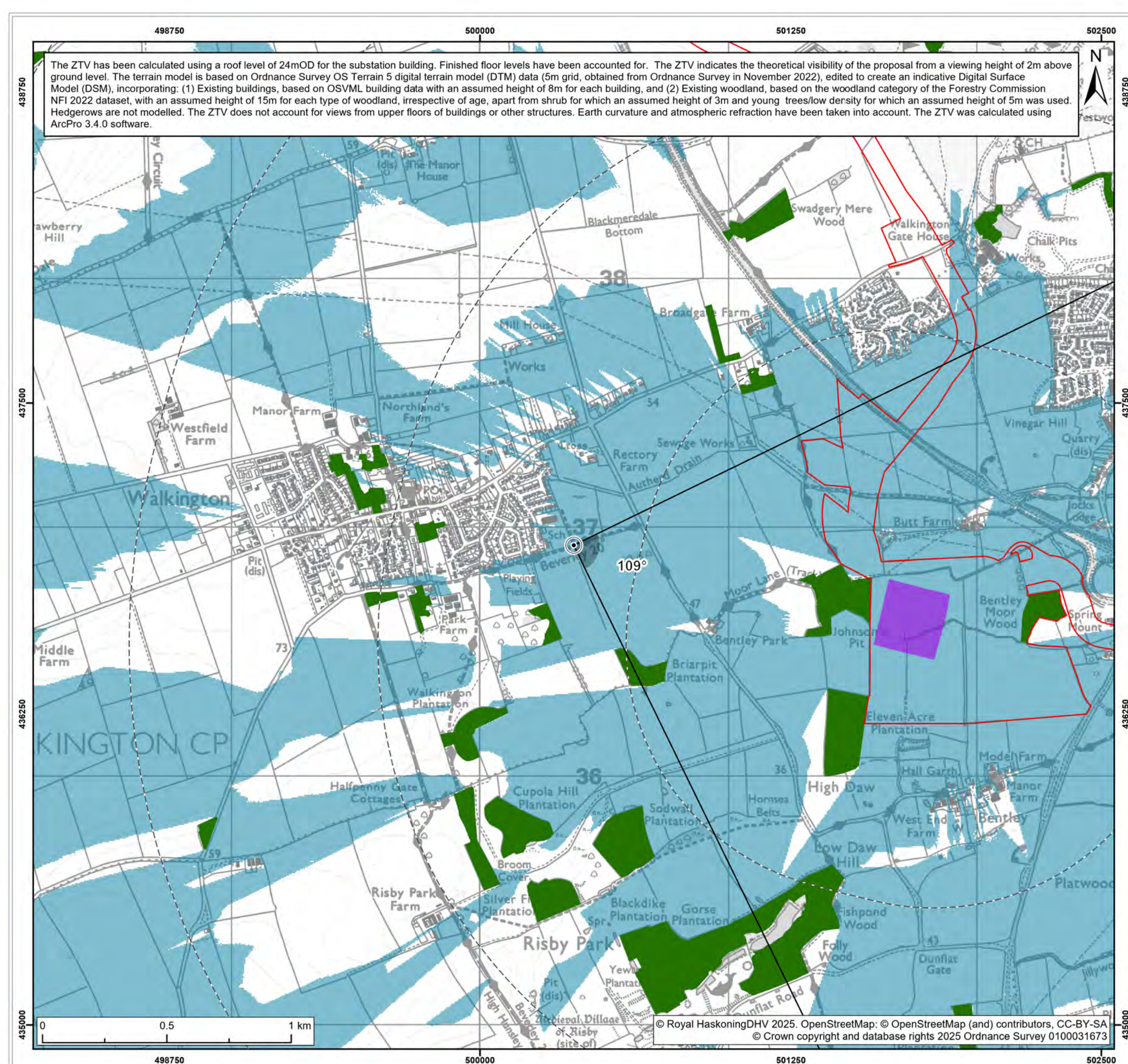


OS reference:	501649 E 437677N
AOD (Above Ordnance Datum):	51.60 m
Direction of view:	176°
Horizontal field of view:	90° (cylindrical projection)

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.



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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 5: Walkington

Figure: 23-11

Co-ordinate system: British National Grid

Project: Dogger Bank South Offshore Wind Farms

Drawing No: PC2340_LUC_ON_ZZ_DR_Z_23-11

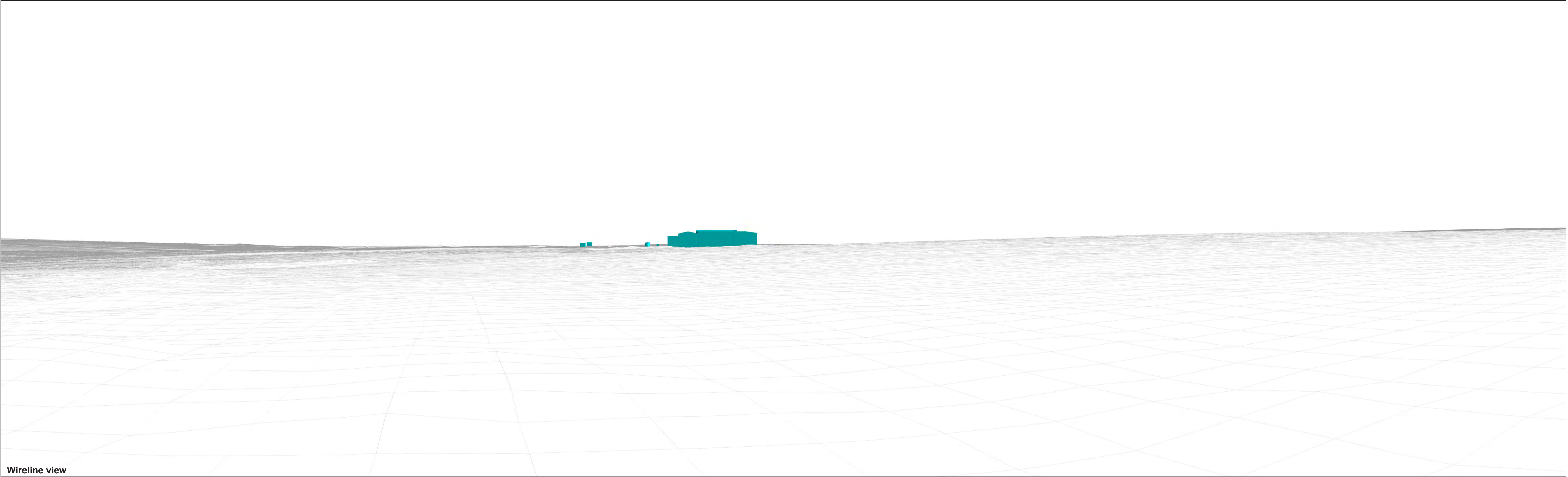
Page Size: A3

Report: Dogger Bank South: Environmental Statement

Scale: 1:15,000

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© Crown copyright and database rights 2025 Ordnance Survey 0100031673





Wireline view



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) Environment 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



Visualisation showing Proposed Onshore Converter Stations



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.

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 OSVLM 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 6: Beverley 20 footpath, Risby

Figure: 23-12		Drawing No: PC2340_LUC_ON_ZZ_DR_Z_23-12	
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	

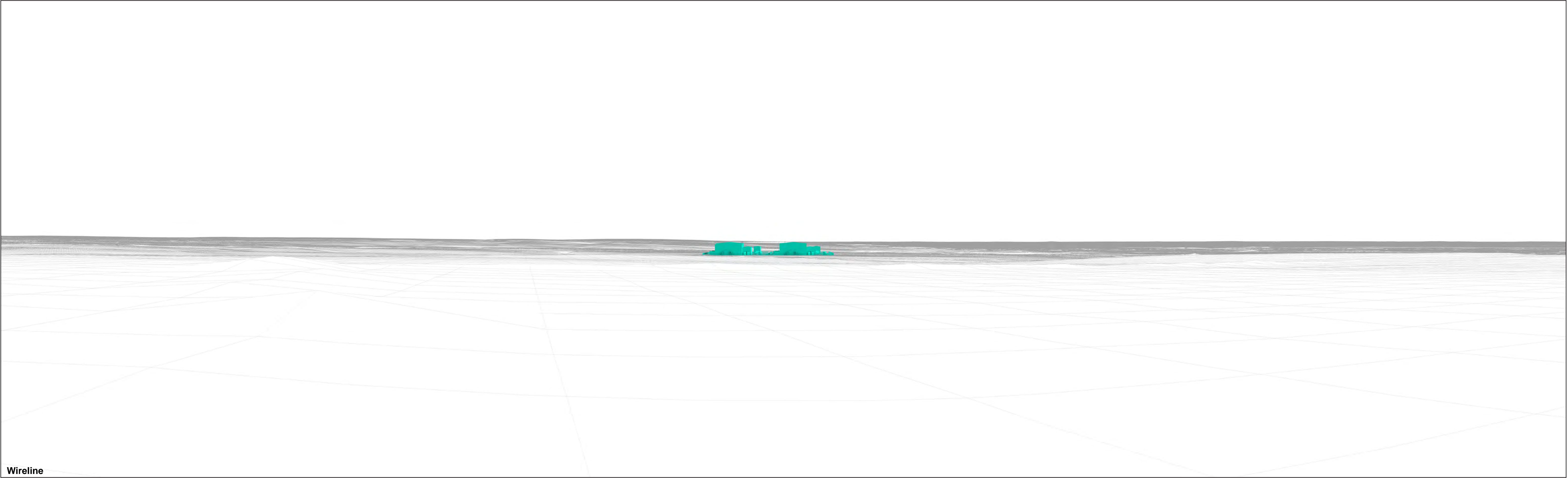




Baseline photograph - Summer



Baseline photograph - Winter



Wireline



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.



Visualisation showing Proposed Onshore Converter Stations

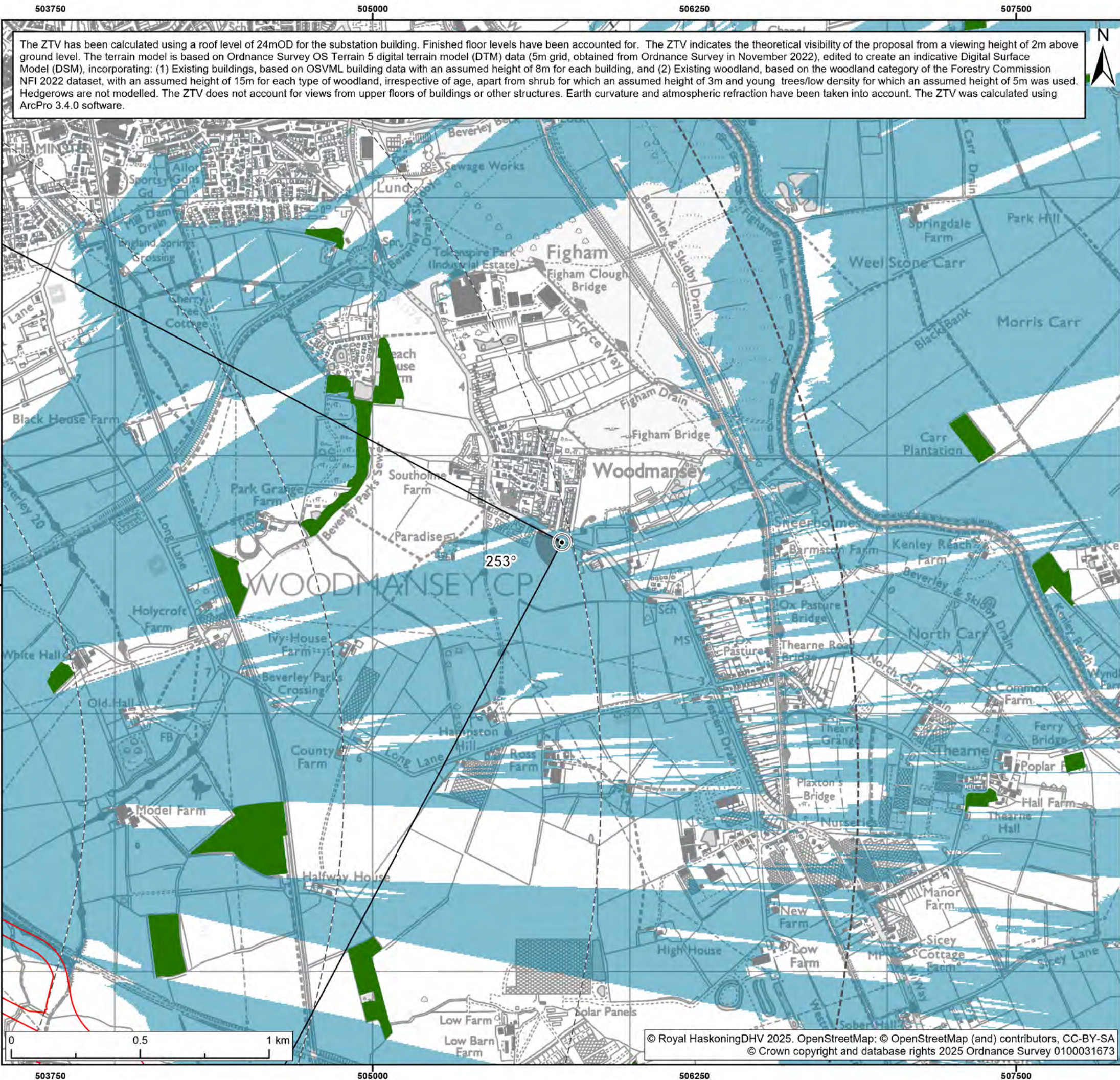


OS reference:	501317E 434726N
AOD (Above Ordnance Datum):	60.41 m
Direction of view:	15°
Horizontal field of view:	90° (cylindrical projection)

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.



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:

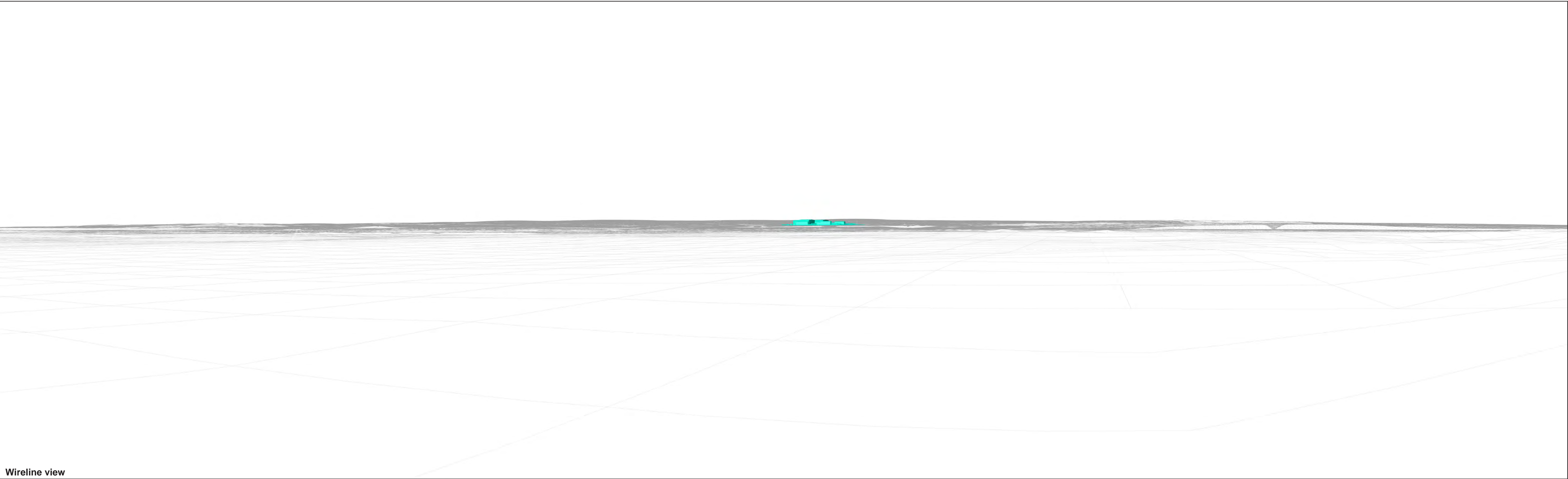
Viewpoint 7: Woodmansey

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	





Baseline photograph



Wireline view



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) Environment 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



Visualisation showing Proposed Onshore Converter Stations

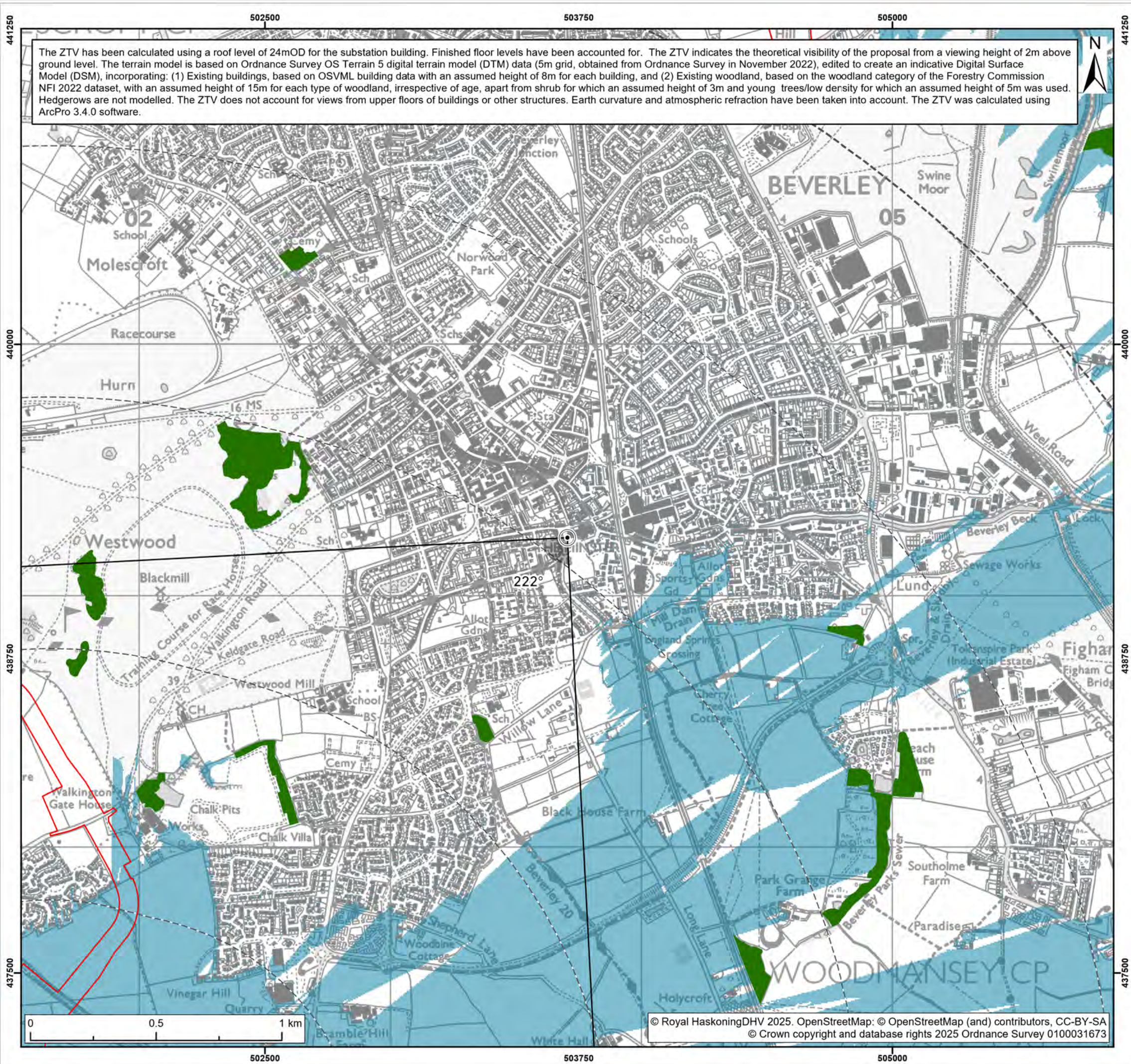


OS reference: 505736 E 437665 N
AOD (Above Ordnance Datum): 3.22 m
Direction of view: 253°
Horizontal field of view: 90° (cylindrical projection)

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.



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 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
Enhancing Society Together

RWE



Baseline photograph

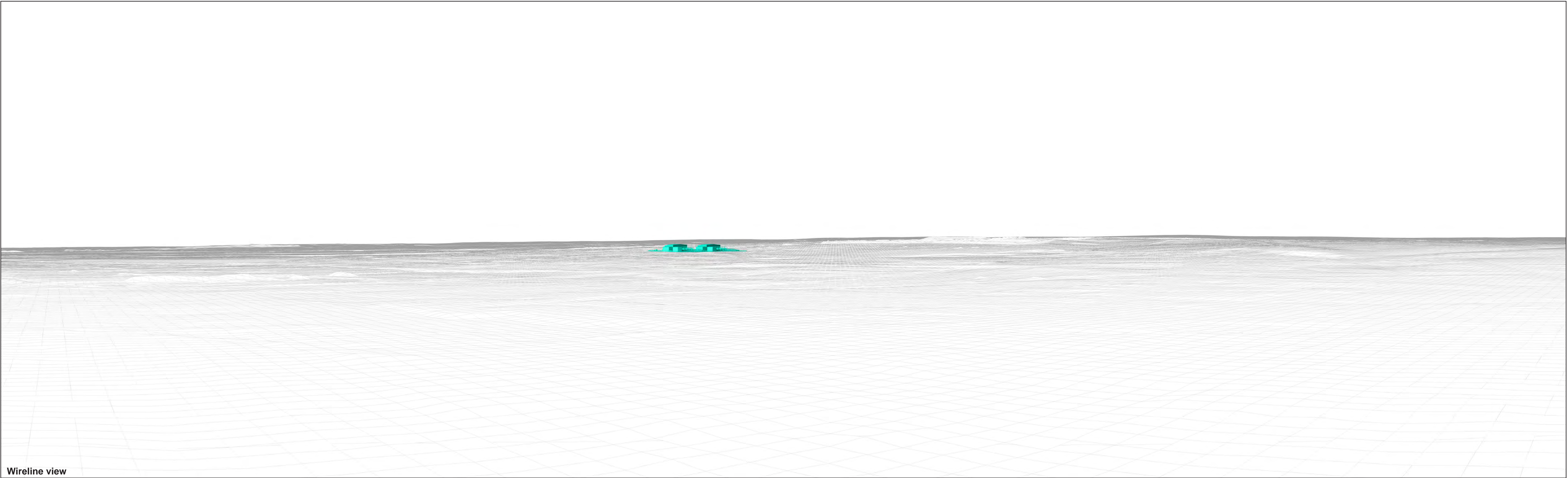


OS reference: 503705 E 439231 N
AOD (Above Ordnance Datum): 27.51 m
Direction of view: 222°
Horizontal field of view: 90° (cylindrical projection)

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.



Wireline view



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) Environment 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



Visualisation showing Proposed Onshore Converter Stations



Visualisation showing Proposed Onshore Converter Stations - year 10 mitigation planting

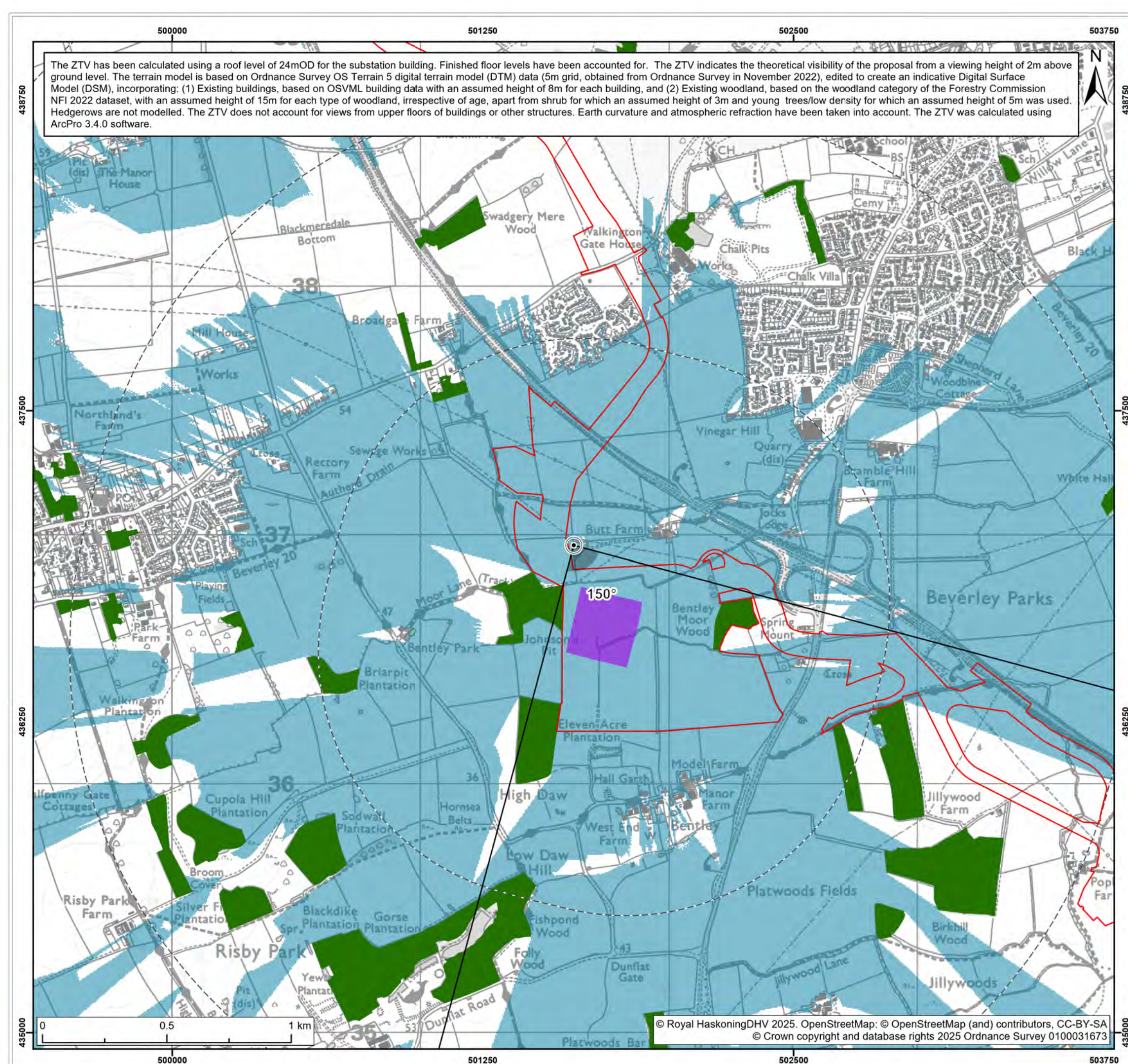


OS reference: 503705 E 439231 N
AOD (Above Ordnance Datum): 27.51 m
Direction of view: 222°
Horizontal field of view: 90° (cylindrical projection)

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.



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	





Baseline photograph

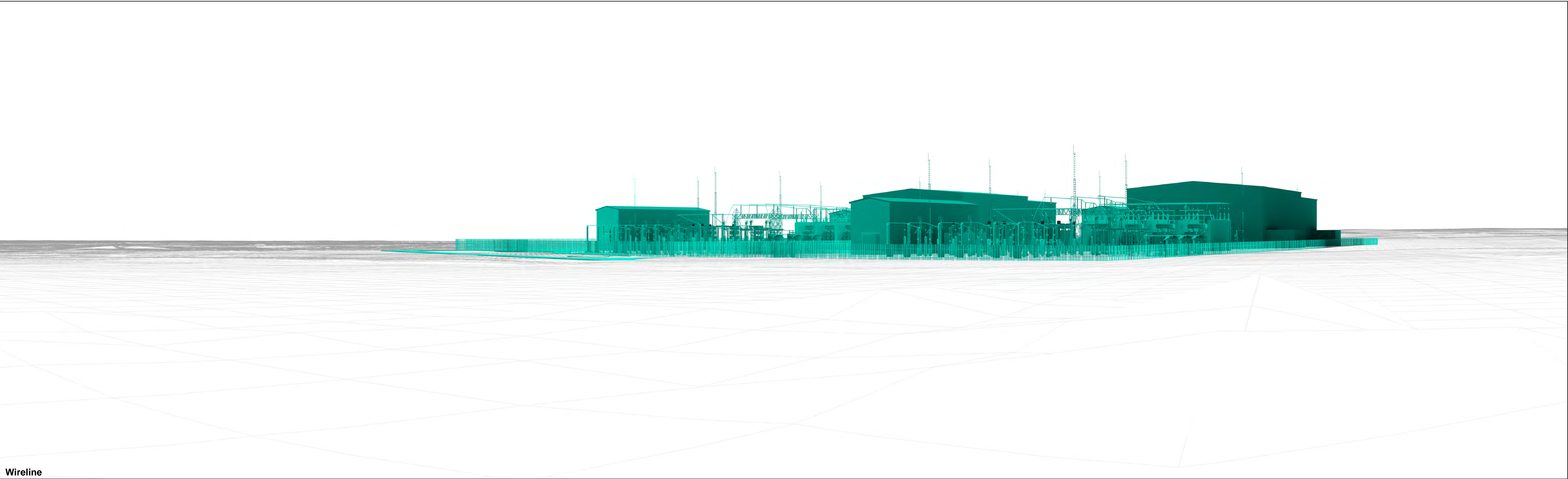


OS reference: 501616 E 436959 N
AOD (Above Ordnance Datum): 38.38 m
Direction of view: 150°
Horizontal field of view: 90° (cylindrical projection)

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.



Wireline

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.



Visualisation showing proposed onshore substation



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.



Visualisation showing proposed onshore substation - year 10 mitigation planting

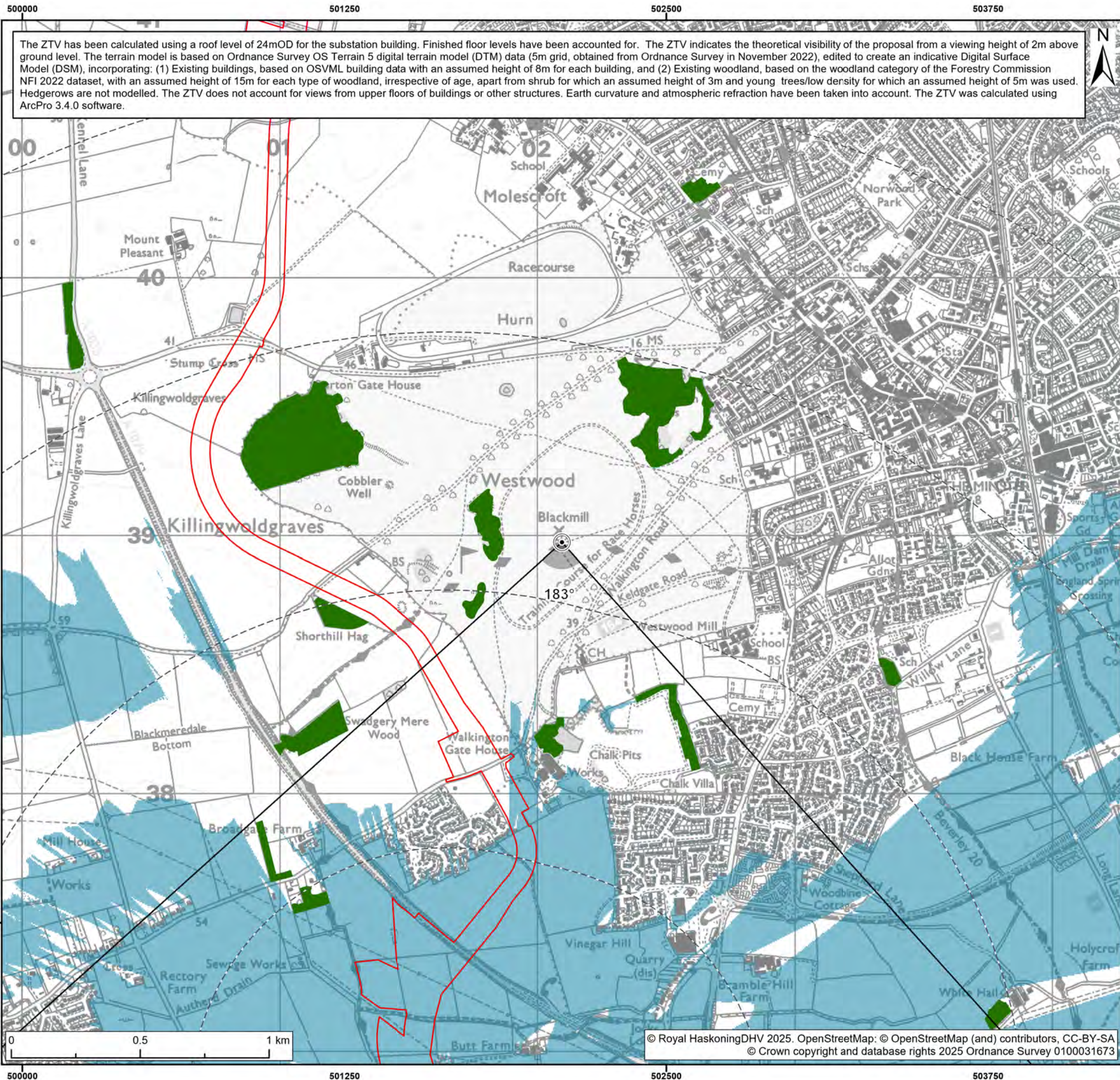


OS reference: 501616 E 436959 N
AOD (Above Ordnance Datum): 38.38 m
Direction of view: 150°
Horizontal field of view: 90° (cylindrical projection)

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.



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

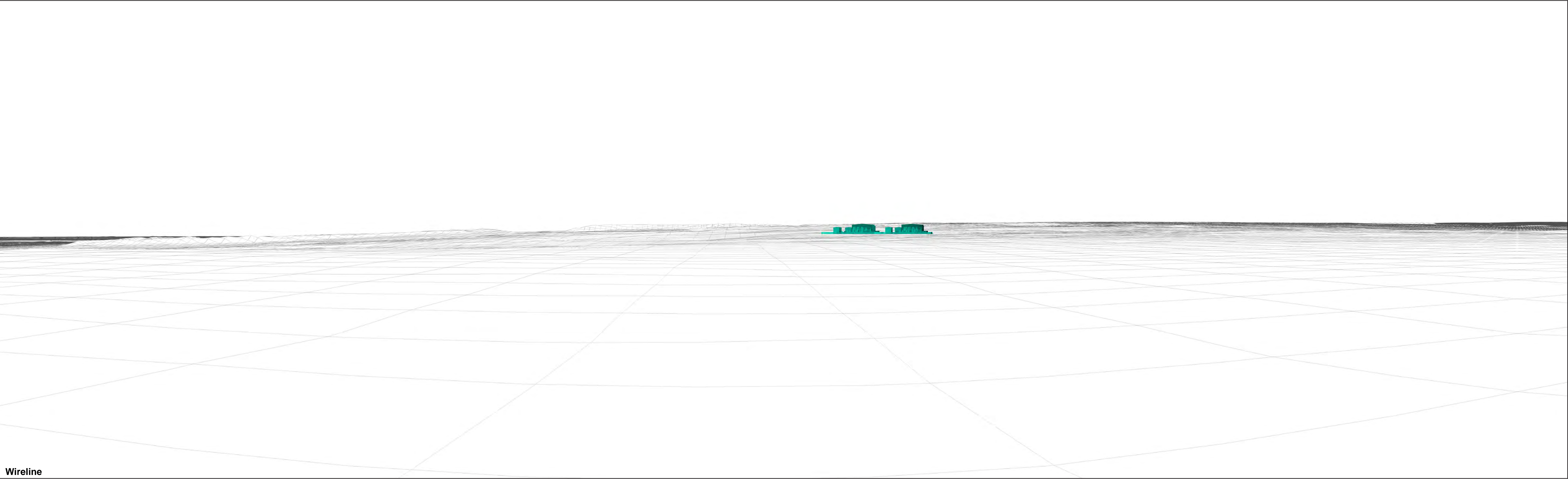
Title:

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: British National Grid	Page Size: A3	Scale: 1:15,000
Project: Dogger Bank South Offshore Wind Farms	Report: Dogger Bank South: Environmental Statement	



Wireline



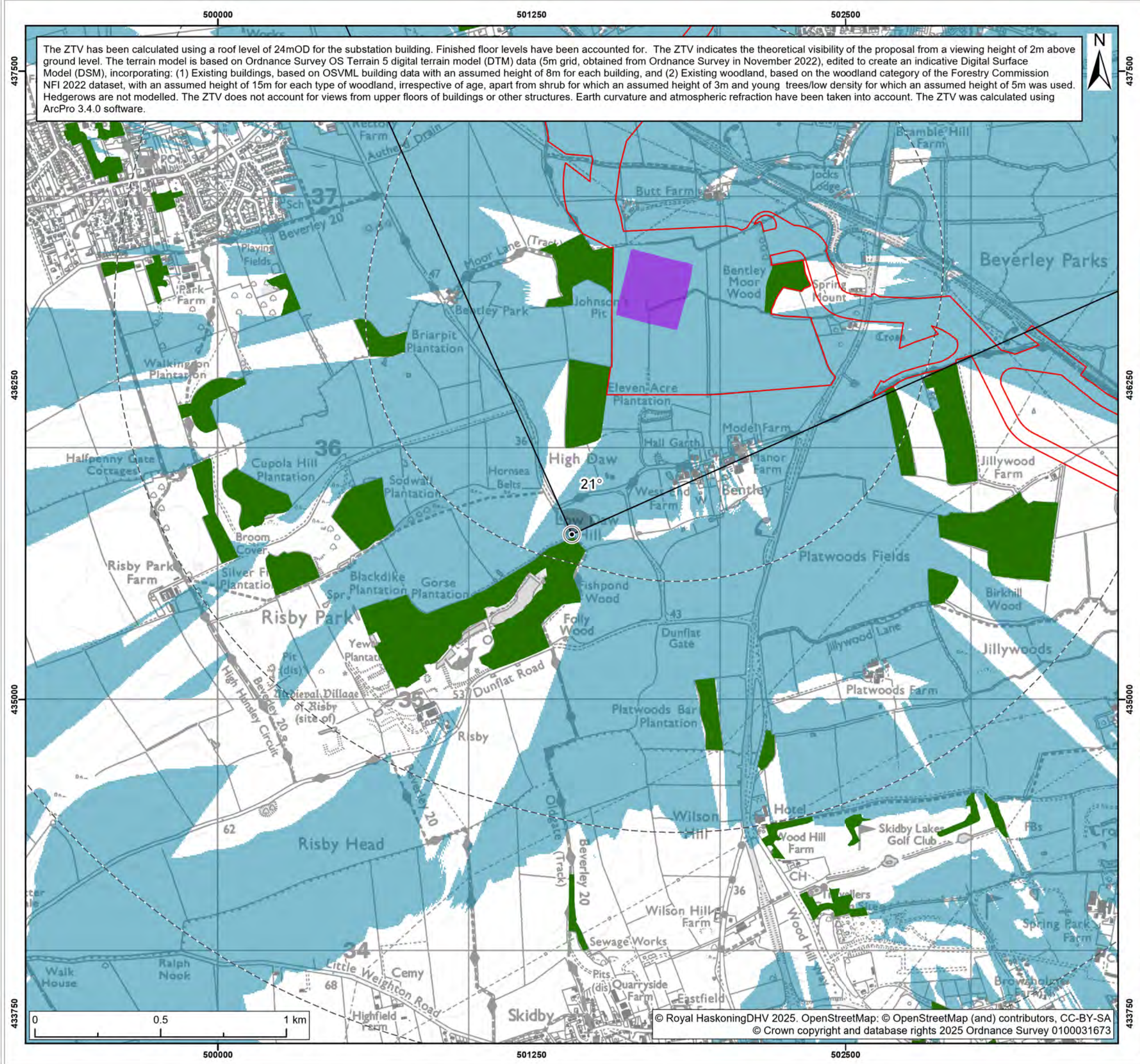
OS reference: 502095 E 438975 N
AOD (Above Ordnance Datum): 39.57 m
Direction of view: 183°
Horizontal field of view: 90° (cylindrical projection)

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.





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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 - 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

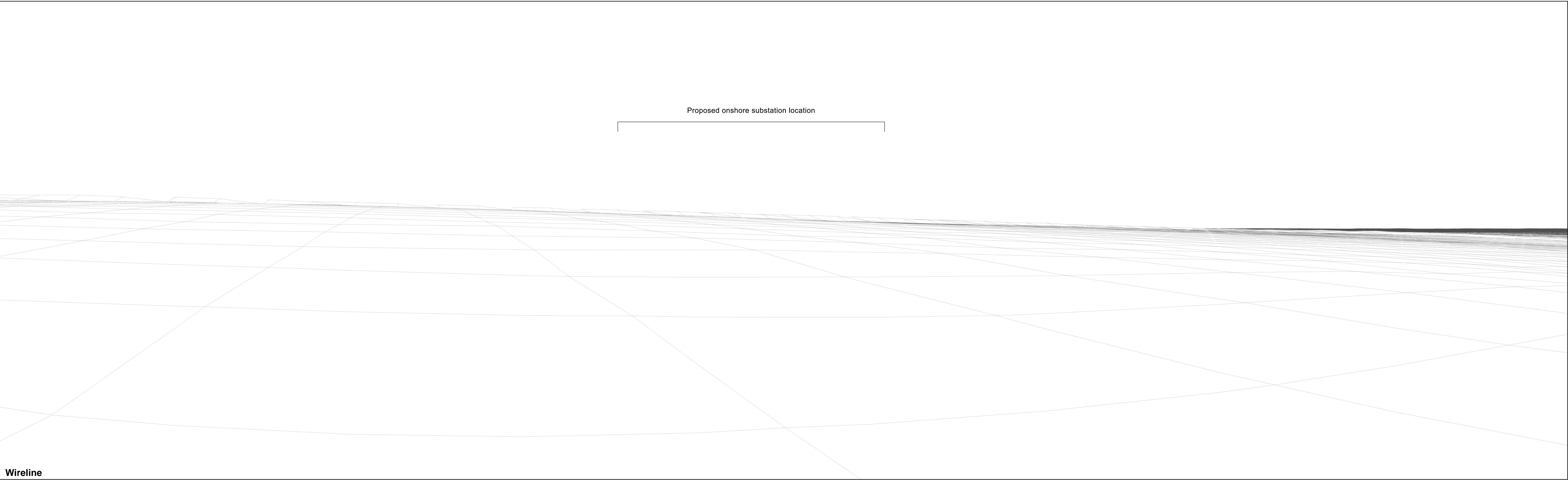
S2	P08	10/02/2024	Suitable for Information	MS	SR	PM
S1	P07	27/02/2024	Suitable for Information	ZM	TH	PM
SUI	REV	DATE	DESCRIPTION	DRW	CHK	APR

Title:
Viewpoint 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	





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.



Baseline photograph - annotated extent

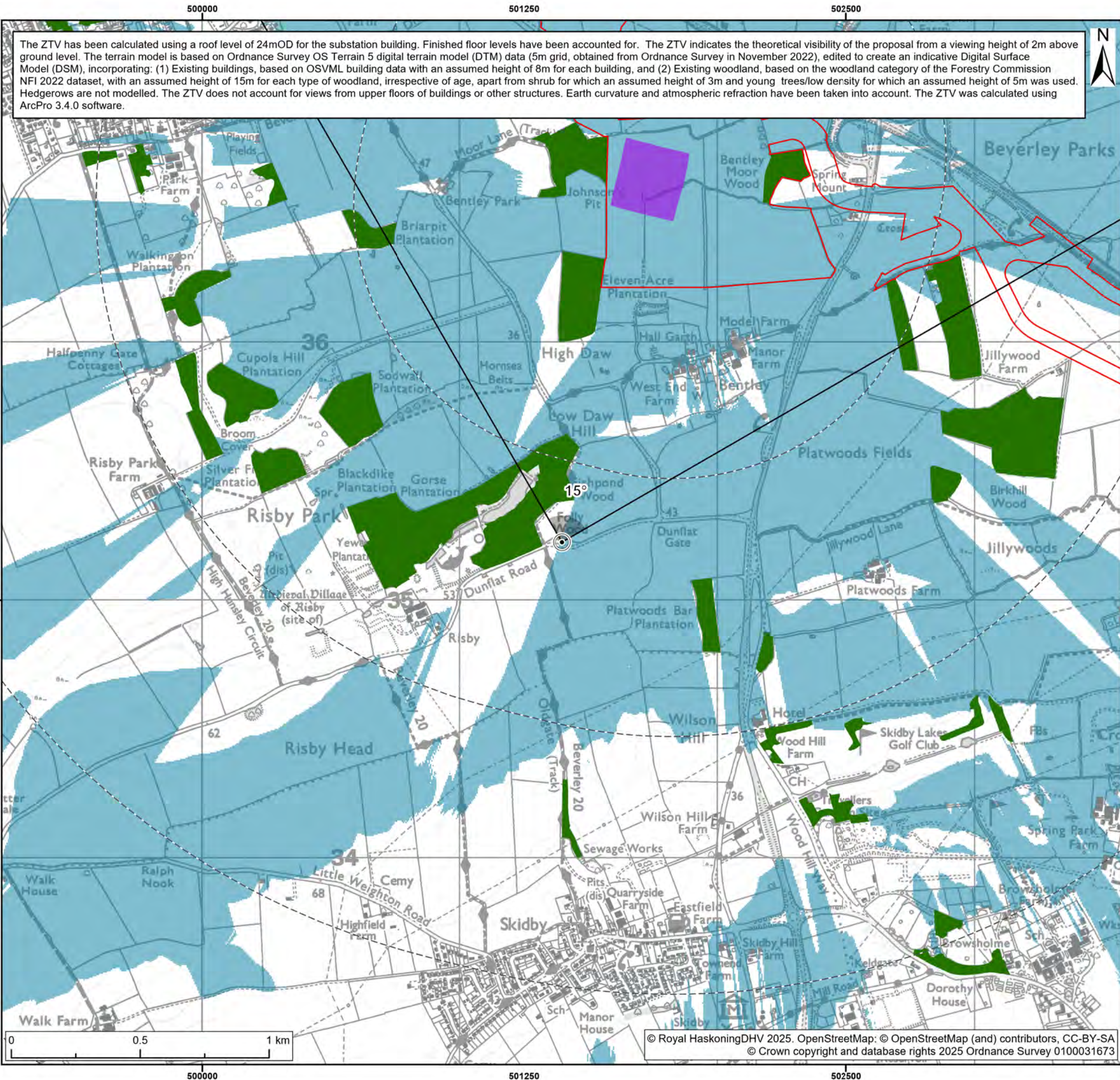


OS reference: 501410 E 435656 N
AOD (Above Ordnance Datum): 37 m
Direction of view: 21°
Horizontal field of view: 90° (cylindrical projection)

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.



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 9: Dunflat Road

Figure: 23-16		Drawing No: PC2340_LUC_ON_ZZ_DR_Z_23-16	
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	





Baseline photograph

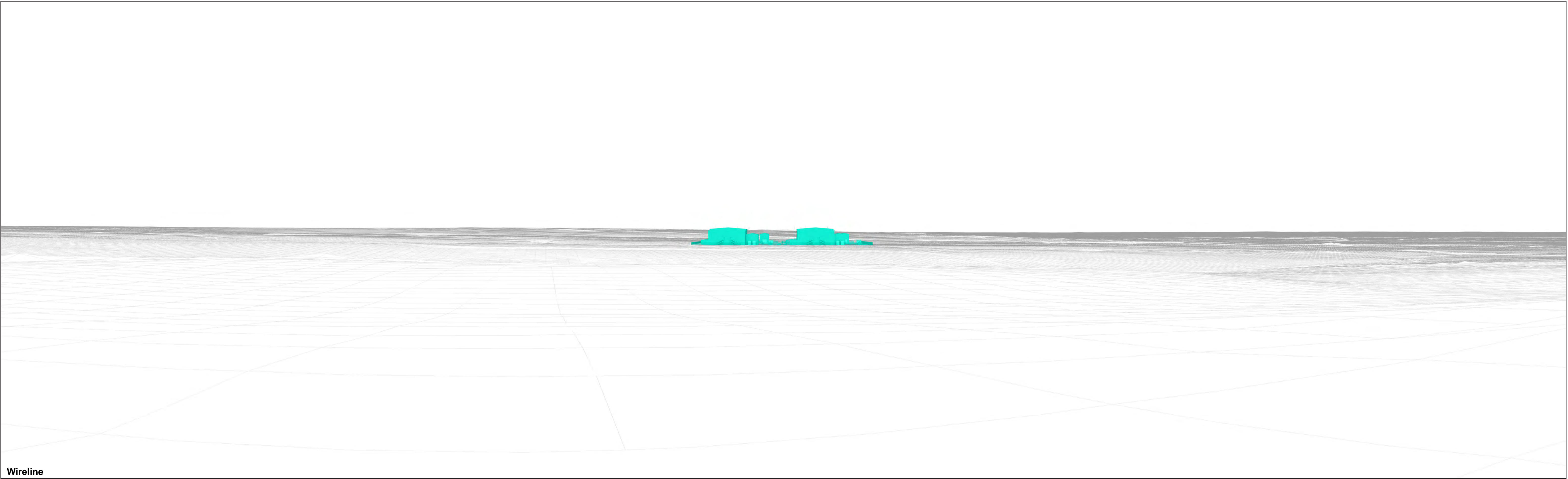


OS reference: 501397E 435224N
AOD (Above Ordnance Datum): 50.14 m
Direction of view: 15°
Horizontal field of view: 90° (cylindrical projection)

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.



Wireline



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.



Visualisation showing Proposed Onshore Converter Stations



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.



Visualisation showing Proposed Onshore Converter Stations - year 10 mitigation planting



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.



Baseline photograph

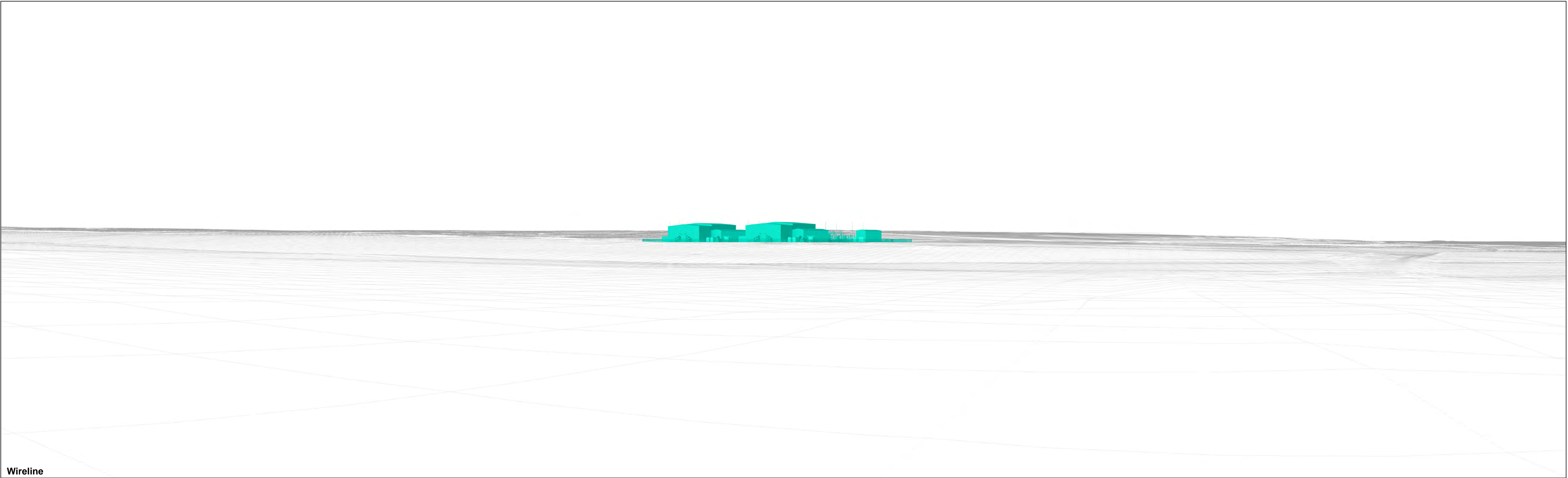
LUC

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.



Wireline



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.



Visualisation showing Proposed Onshore Converter Stations



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.



Visualisation showing Proposed Onshore Converter Stations - year 10 mitigation planting



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.