Appendix E – Photographs of the Site and Surroundings

Aerial photograph of the farm showing location of the proposed turbine as (x) and references to photographs 1 to 7.



KEY

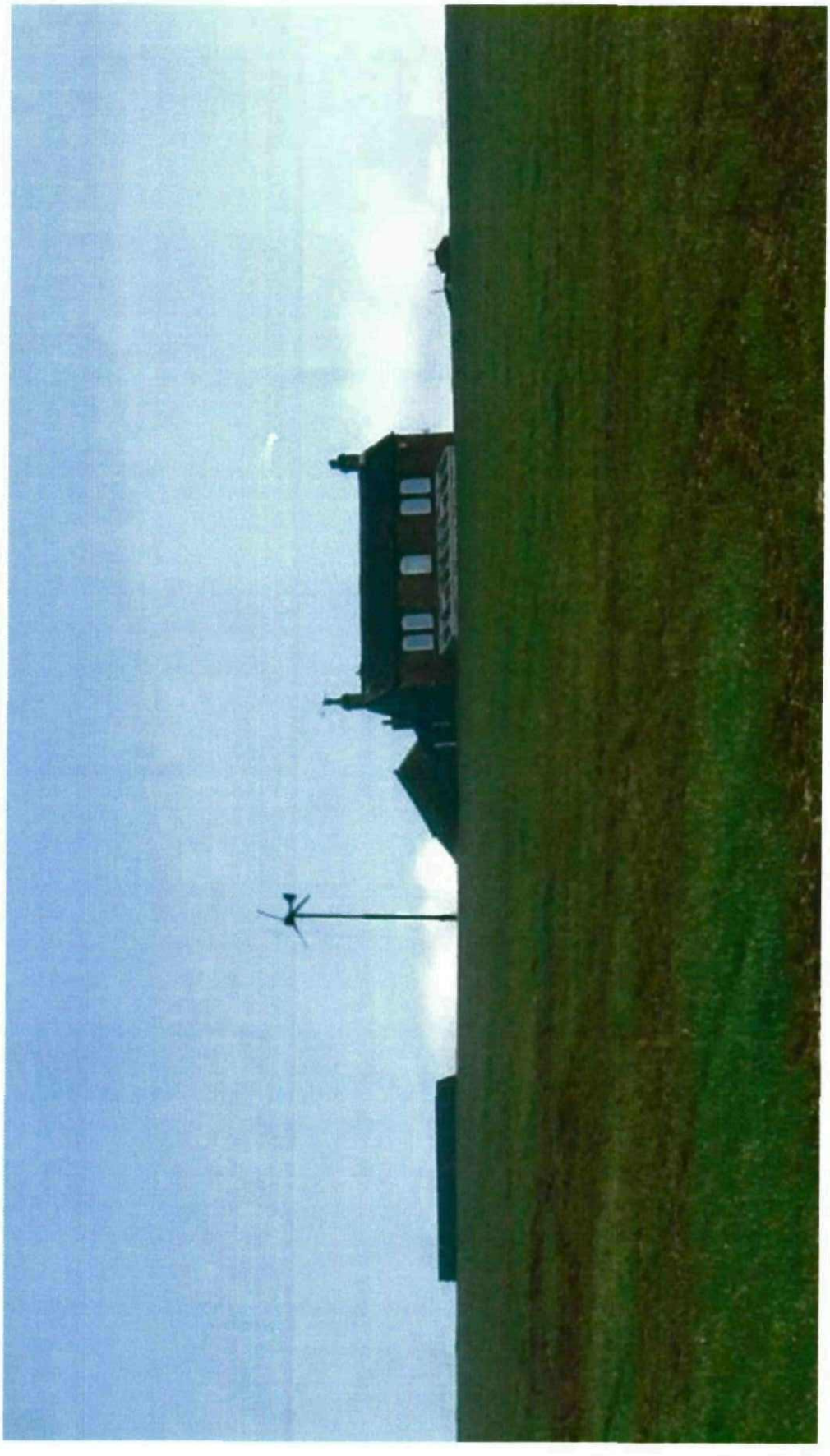
To turbine site marked 'x':

1: 560m
2: 200m
3: 200m
4: 340m
5: 460m
6: 580m
7: 430m

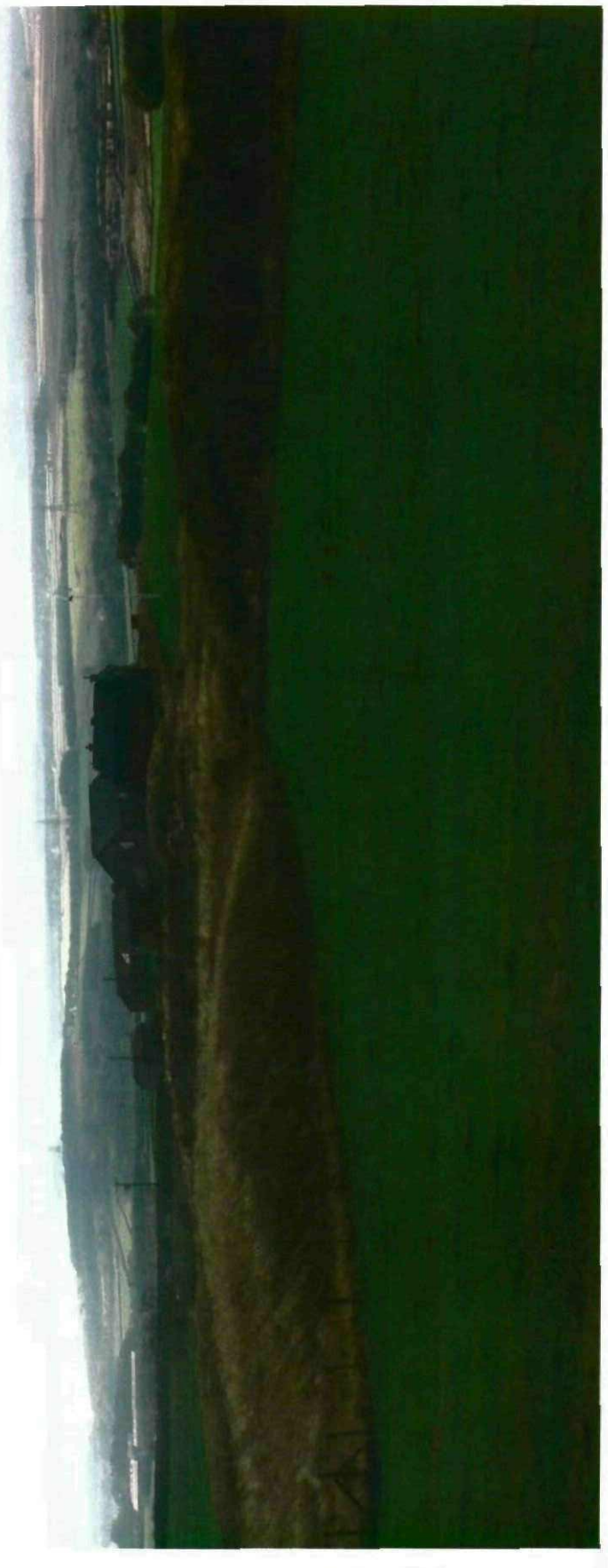
Viewpoint 1



Viewpoint 2



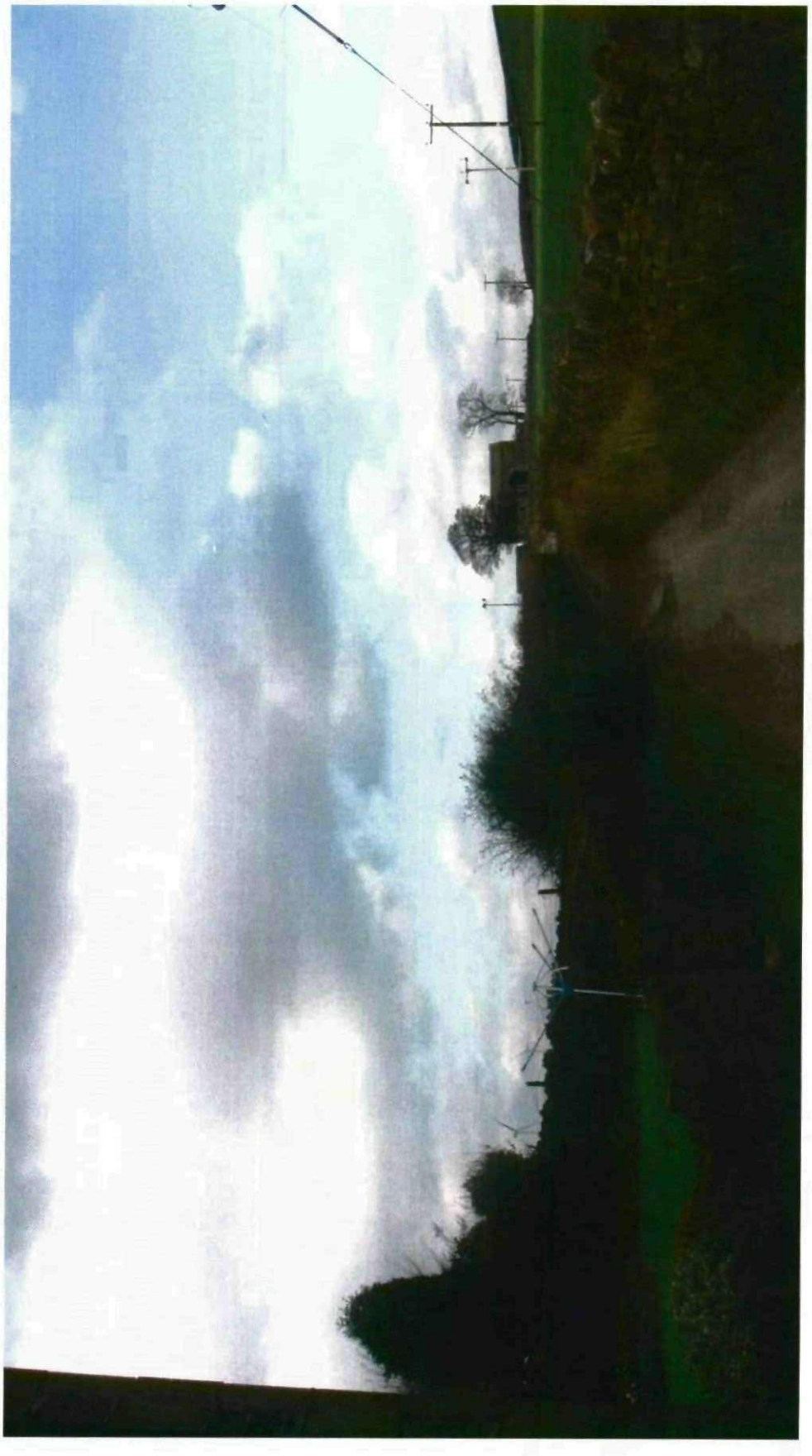
Viewpoint 3



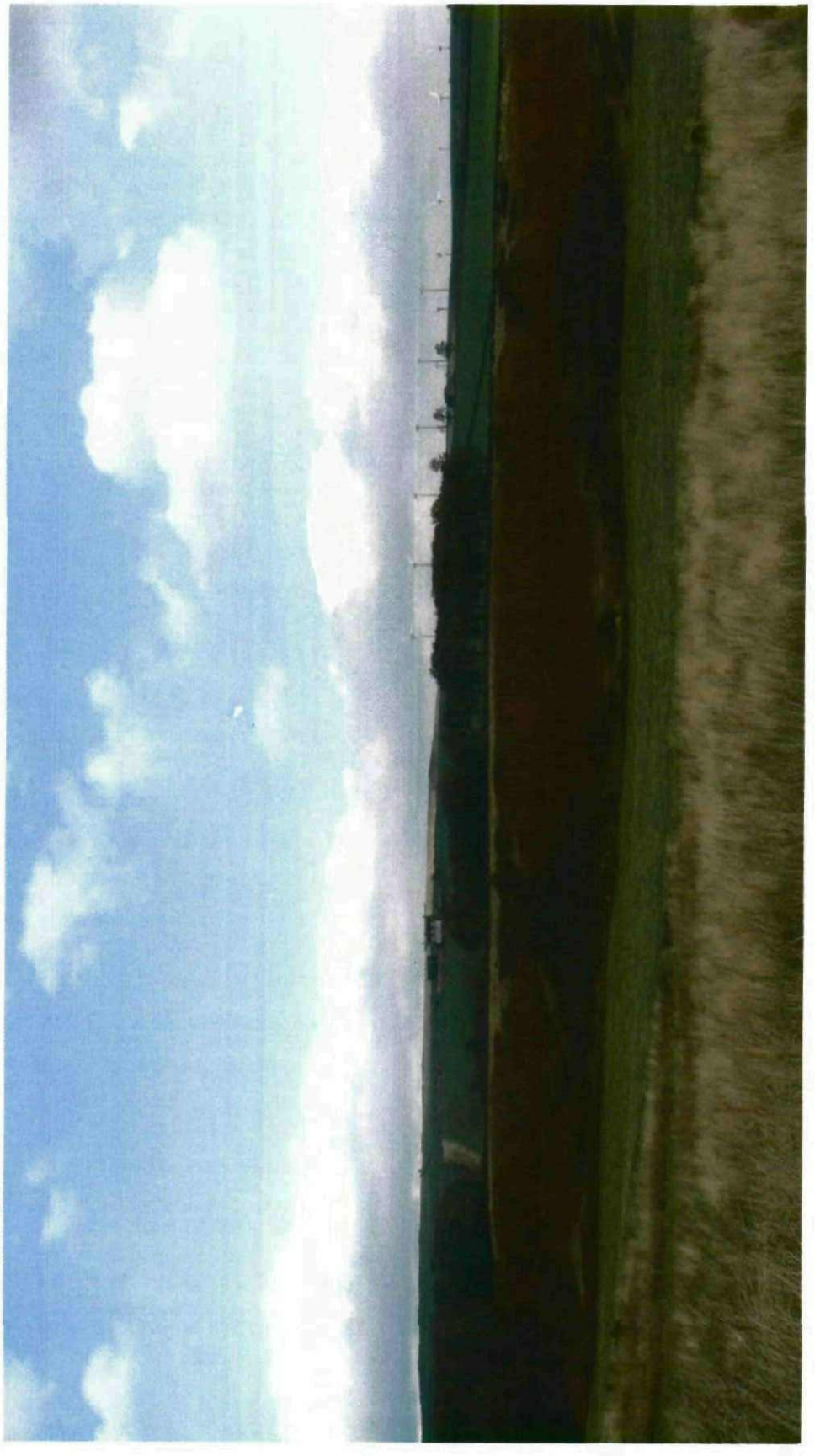
Viewpoint 4



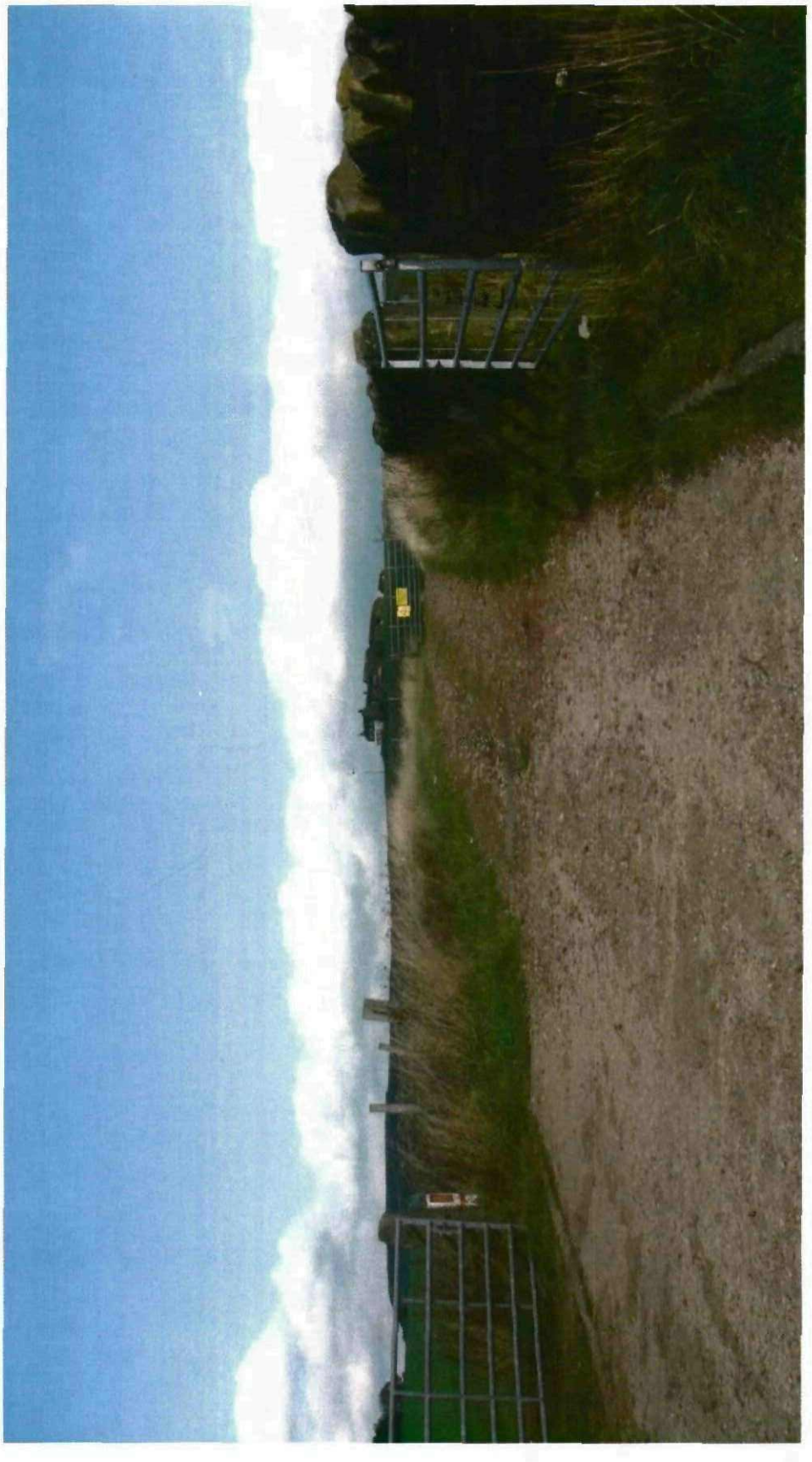
Viewpoint 5



Viewpoint 6



Viewpoint 7



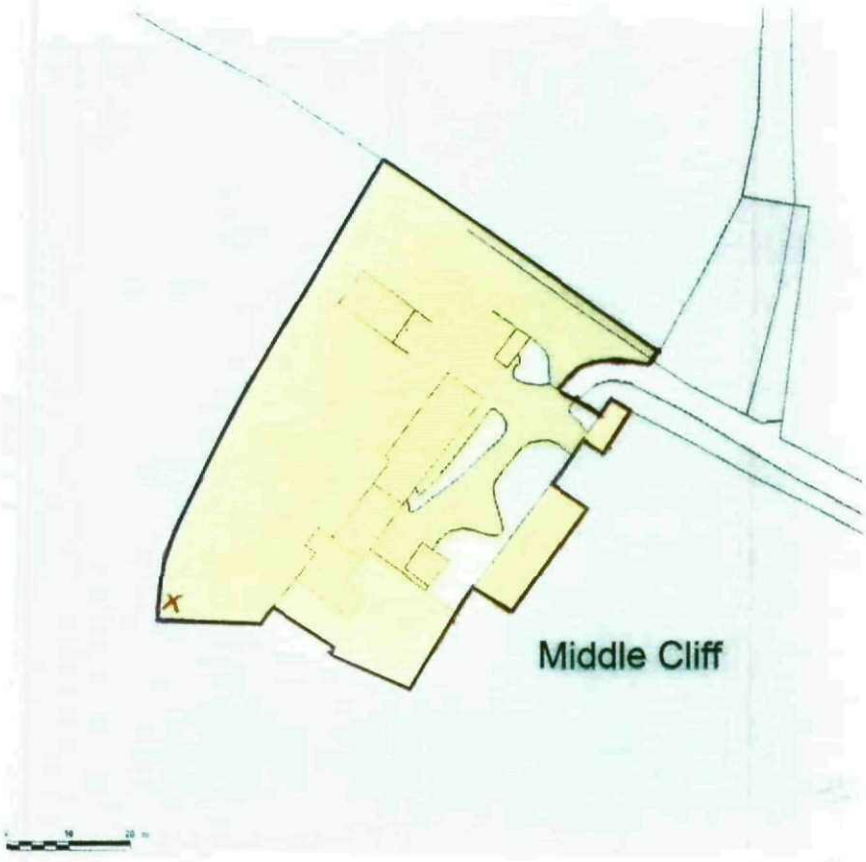
Appendix A

Streetwise

Enabled by Ordnance Survey

SITE LOCATION PLAN
AREA 2 HA
SCALE 1:1250

CENTRE COORDINATES: 419725, 404146



Supplied by Streetwise Maps Ltd
www.streetwise.net
Licence No: 100047474
19/09/2011 13:52

evancewind

Evance R9000

Advanced Small Wind Turbine

Certified for Feed-in Tariff

Renewable energy is key to our low-carbon energy future, as well as diversifying energy sources.

Today wind power continues to gain ground as a profitable and effective energy source.

Evance Wind is at the heart of this energy revolution, supporting homeowners, farmers, businesses and organisations around the World, to become independent green energy producers and reduce their bills and CO_2 emissions.

The Evance R9000 already has several European accreditations, including the UK MCS certification so eligible for Feed-in Tariffs.





Generating power to support farm (1)

The Evance R9000 small wind turbine is the result of years of dedicated research and development, based on engineering experience of designing big wind turbines.

Specifically designed to capture more energy at lower wind speeds makes the R9000 one of the most efficient 5kW turbines available.

The R9000 includes state-of-the-art technologies, such as the patented blade pitch system and a highly efficient generator, which converts up to 96% of the energy captured into electricity in on and off grid applications.

The R9000 belongs to the 'next generation' of small wind turbines, offering class leading quality, performance and reliability.

- Delivers maximum energy yield.
- Generates power at low wind speeds & continues running at high wind speeds.
- Outstanding durability - minimal maintenance.
- Reliability backed by millions of operating hours in the field.
- Low noise and visual impact.
- Conforms to IEC 61400-2 international standard.

The efficient and reliable Evance R9000 is already enabling homeowners, farmers and businesses around the World reduce energy bills and carbon footprint.



R9000 powers property in Denmark (2)



Generating power for property in France (3)



R9000 on Isle of Lewis (4)

Specification

Architecture	Upwind, 3 bladed rotor, self regulating
Rated Power	5kW @12m/s (26.9mph), continuous to 60m/s (134mph)
BWEA Reference Power	4628W (power output at 11m/s (24.6 mph))
Annual Energy Yield	8780kWh with Annual Mean Wind Speed (AMWS) of 5m/s (11.2mph) (to IEC & BWEA Standards)
Cut-In Wind Speed	3m/s (6.7mph)
Cut-Out Wind Speed	None. Continuous generation to survival wind speed
Survival Wind Speed	60m/s (134mph)
IEC Turbine Class	Conforms to IEC 61400 to Class II - AMWS up to 8.5m/s (19mph)
Control System	Patented Reactive Pitch™ control
Rotor Diameter	5.5m (18')
Rotor Speed	200rpm nominal
Blade Type	Fully optimised aerofoil ensuring maximum yield & minimum noise
Blade Material	Glass fibre reinforced composite, low reflection, UV & anti-erosion coatings
Generator	Patented brushless direct drive, air-cored high efficiency Permanent Magnet Alternator
Gearbox	None required (see generator)
Emergency Braking	Patented automatic ElectroBrake™ (with manual control for servicing). No moving parts.
Yaw Control	Passive tail vane and rotor
Tower Height	10m, 12m, 15m & 18m (33', 40', 50' & 60')
Tower Types	Free-standing (monopole), hydraulic RAM & Gin pole tilt
Tower Foundation	Root & pad options
Tower Top Mass	325kg (715lbs) complete (excl tower)
Design Longevity	20 years minimum. Regular service inspections.
Noise	Lp, 25m = 53dB(A). BWEA Reference Sound Level at 8m/s (17.9mph) & 25m (82') distance Lp,60m = 45.5dB(A). BWEA Reference Sound Level at 8m/s (17.9mph) & 60m (197') distance
Operating Temperature Range	-20°C - +50°C
Warranty	5 years (see Evance Terms & Conditions for details)

Evance Wind Turbines Ltd
Unit 6, Weldon Road, Loughborough, Leicestershire LE11 5RN United Kingdom

T: +44 (0)1509 215669
F: +44 (0)1509 267722
E: enquiries@evancewind.com
www.evancewind.com

APPROVED PRODUCT

Certificate Number MCS WT0039
Small Wind Turbine

We are continually improving our products and reserve the right to alter the above specifications at any time without notice.
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Images above courtesy of (1) Aegis Energy, (2) Cirkel Energi, (3) Windeo and (4) West Electric Services.

© Evance Wind Turbines Ltd

Evance R9000

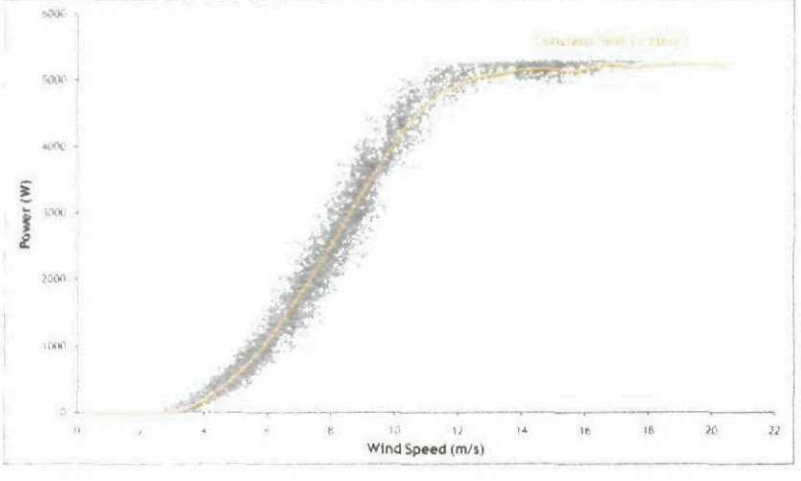
Advanced Small Wind Turbine

Performance data you can rely on

Evance leads the UK industry in ensuring all of its claims are transparent and honest. The Evance R9000 turbine is Microgeneration Certification Scheme (MCS) accredited, a formal recognition of the durability, reliability, safety and overall performance of the turbine.

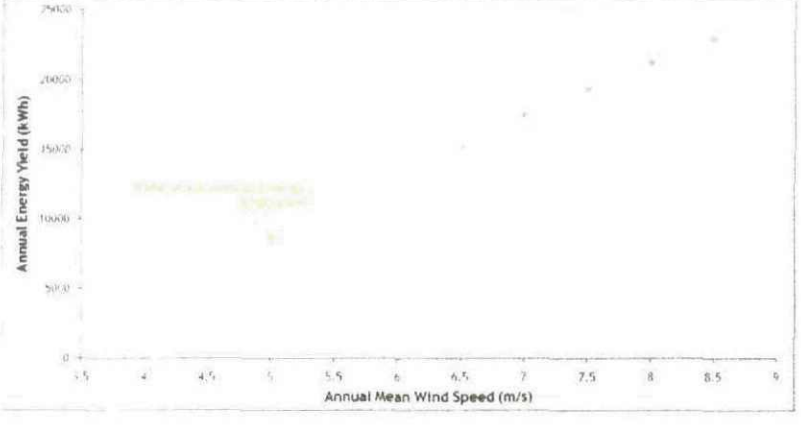
Average Power vs. Wind Speed

Wind Speed (m/s)	Power (W)
2	0
3	14
4	210
5	576
6	1104
7	1783
8	2542
9	3349
10	4077
11	4628
12	4911
13	5066
14	5141
15	5142
16	5159
17	5217
18	5212
19	5242
20	5235



Annual Energy Yield vs. Annual Mean Wind Speed

Annual Mean Wind Speed (m/s)	Annual Energy Yield (kWh)
4	4739
4.5	6671
5	8780
5.5	10977
6	13186
6.5	15349
7	17423
7.5	19383
8	21208
8.5	22888



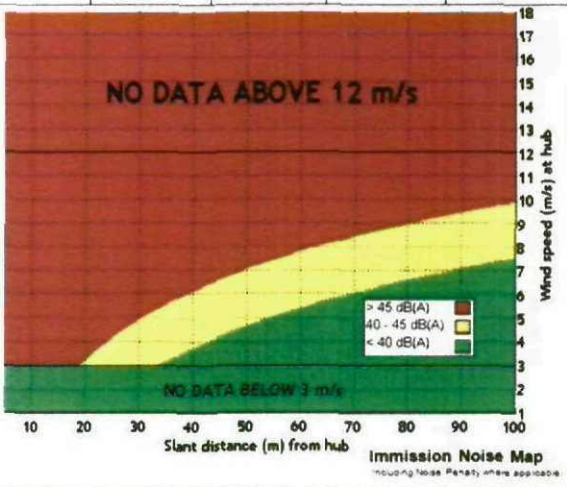
Noise Levels

BWEA Reference Sound Level at 8m/s:

Lp, 25m = 53dB(A)
Lp, 60m = 45.5dB(A)

ACOUSTIC NOISE LEVELS

Turbine Manufacturer:	Evance Wind Turbines Ltd		Model:	Evance R9000
NOISE EMMISSION LEVEL				NOISE PENALTY
Sound Power $L_{Wd,8m/s}$	89.0	Noise Slope, S_{dB} (dB/m/s)	2.095	NO



Evance Wind Turbines Ltd
Unit 6, Weldon Road, Loughborough, Leicestershire LE11 5RN United Kingdom

T: +44 (0)1509 215669
F: +44 (0)1509 267722
E: enquiries@evancewind.com
www.evancewind.com

APPROVED PRODUCT
MCS
BRE GLOBAL LISTED

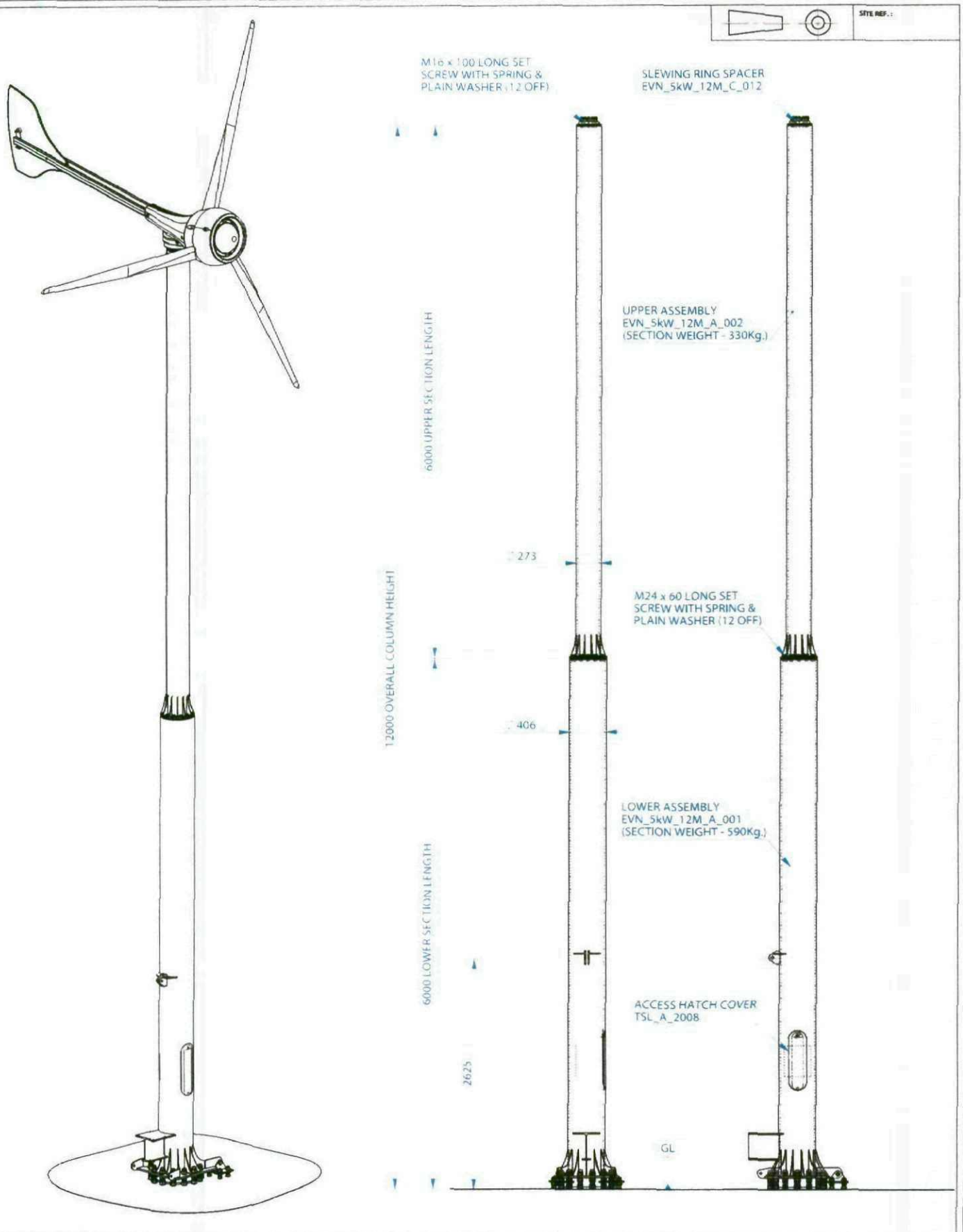
Certificate Number MCS WT0039
Small Wind Turbine

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SM0175-01

Appendix C



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REV.	DESCRIPTION	DRAWN	APP'D	DATE
C	FASTENERS AMENDED	A.P.H	L.J.B	26/01/2010
B	BASE ARRANGEMENT NOW COMMON WITH 15M	A.P.H	L.J.B.	06/10/2009
A	FOR MANUFACTURE	N.G.	L.J.B.	10/09/2009

NOTES :
1. ALL DIMENSIONS ARE IN MILLIMETRES WITH LEVELS SHOWN IN METRES
2. ALL DIMENSIONS NOT TOLERANCES TO BE WITHIN ±0.50mm
3. STEELWORK TO BE TO BS 7668 OR BS EN 10113-1, GRADE S355, AND FABRICATED IN ACCORDANCE WITH BS 5950.
4. ALL BOLTS TO BE GRADE 8.8 SPUN GALVANISED TO BS 3692
5. ALL STEELWORK TO BE PICKLED AND HOT DIP GALVANISED IN ACCORDANCE WITH BS EN ISO 1461
6. REMOVE ALL BURRS AND SHARP EDGES

MATERIAL : SEE DETAILS

FINISH : GALVANISED

MASS (Kg.) :

Hutchinson Engineering
TEL. +44 (0)151 422 9990
FAX. +44 (0)151 420 5100
www.hutchinsonengineering.co.uk
EVERITE ROAD, WIDNES, CHESHIRE, WA8 8PT
ISO 9001 Registered

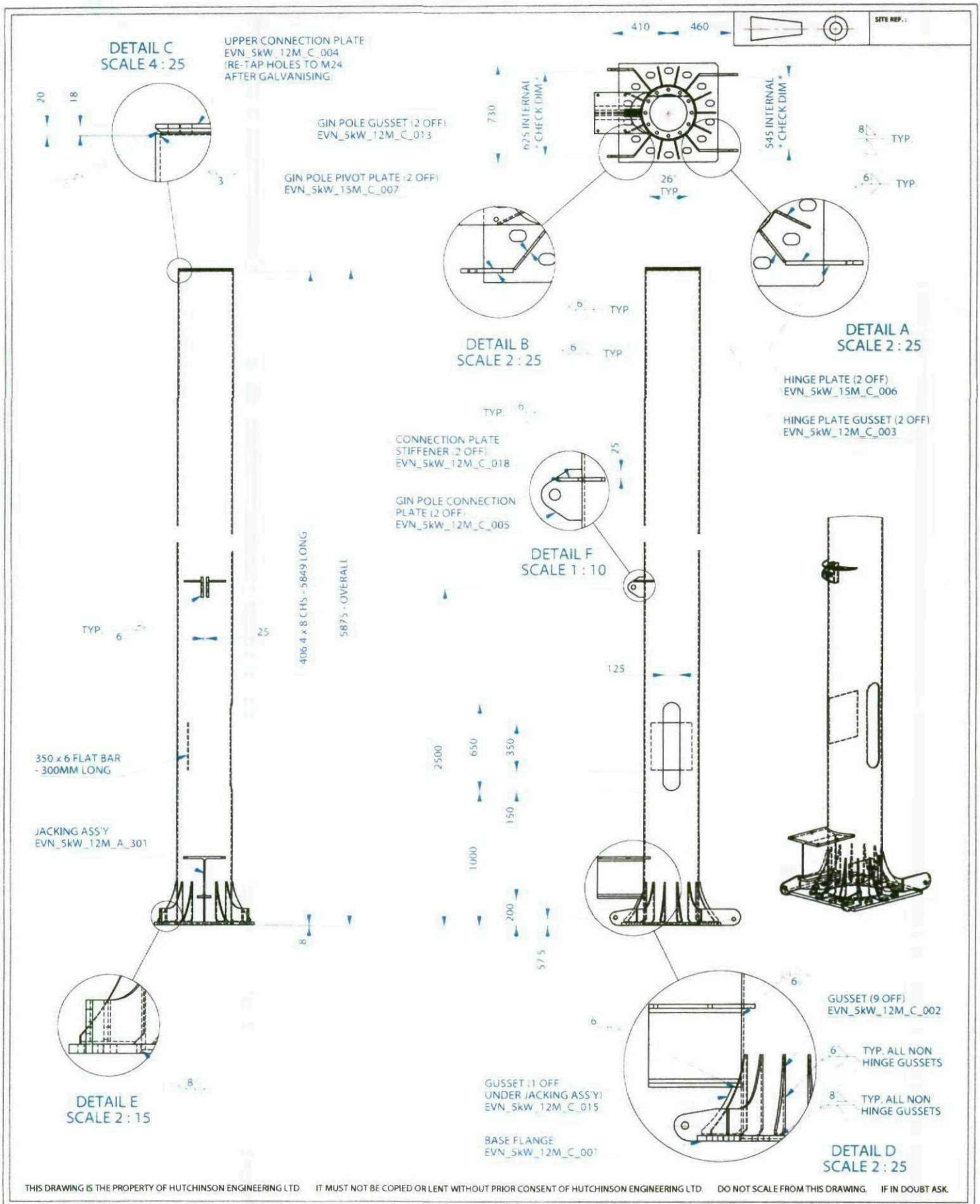
CLIENT : EVANCE
PROJECT : EVANCE 5kW / 12M WIND TURBINE STRUCTURE
TITLE : GENERAL ARRANGEMENT DETAILS FOR 12M STRUCTURE TO SUIT AN EVANCE CLASS 2 WIND TURBINE

A3

DRAWN	APP'D	CHK'D	SCALE	DATE
N.G.	L.J.B	L.J.B	1:40	10/09/2009

DWG No. **EVN_5kW_12M_G_001**

REVISION **C**



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REV.	DESCRIPTION	DRAWN	APP'D	DATE
B	WELD PREPS MOFIED ON BASE GUSSETS	A.P.H	L.J.B	24/06/2010
A	FOR MANUFACTURE	A.P.H	L.J.B.	08/10/2009

NOTES :
1. ALL DIMENSIONS ARE IN MILLIMETRES WITH LEVELS SHOWN IN METRES.
2. ALL DIMENSIONS NOT TOLERANCES TO BE WITHIN ±0.50mm
3. STEELWORK TO BE TO BS 7668 OR BS EN 10113-1, GRADE S355, AND FABRICATED IN ACCORDANCE WITH BS 5950
4. ALL BOLTS TO BE GRADE 8.8 SPUN *GALVANISED TO BS 3692*
5. ALL STEELWORK TO BE PICKLED AND HOT DIP GALVANISED IN ACCORDANCE WITH BS EN ISO 1461
6. REMOVE ALL BURRS AND SHARP EDGES

MATERIAL : SEE DETAILS

FINISH : GALVANISED

MASS (Kg.) : 582.02

Hutchinson Engineering
TEL +44 (0)151 422 9990
FAX. +44 (0)151 420 5100
www.hutchinsonengineering.co.uk
EVERITE ROAD,
WIDNES,
CHESHIRE,
WA8 8PT
ISO 9001 Registered

CLIENT : EVANCE
PROJECT : EVANCE 5kW / 12M WIND TURBINE STRUCTURE
TITLE : LOWER COLUMN ASSEMBLY DETAILS

A3

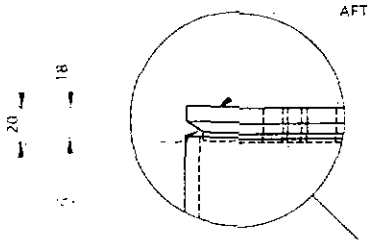
DRAWN :	APP'D :	CHK'D :	SCALE :	DATE :
A.P.H	L.J.B	L.J.B	1:25	08/10/2009

DWG No. **EVN_5kW_12M_A_001**

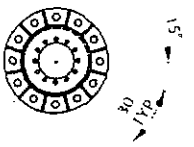
REVISION **B**

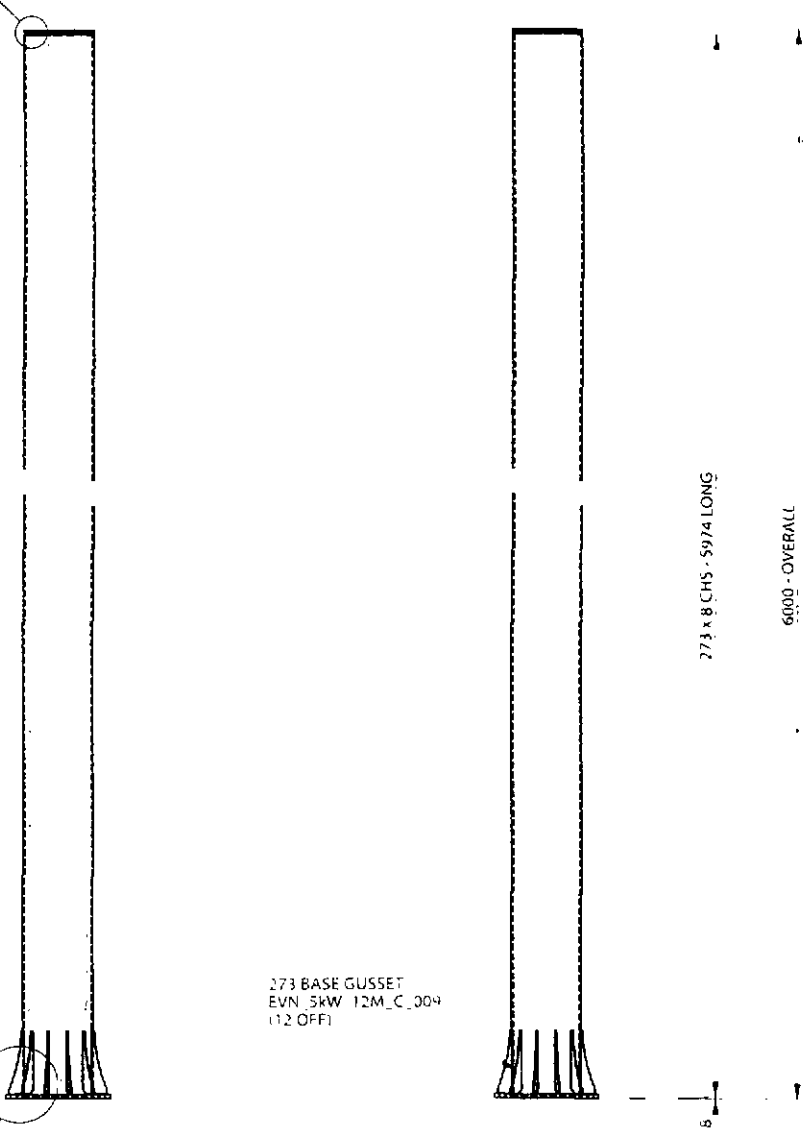
SITE REF. :

UPPER CONNECTION PLATE
EVN_5kW_12M_C_011
(RE-TAP HOLES TO M16
AFTER GALVANISING)



DETAIL D
SCALE 1 : 3



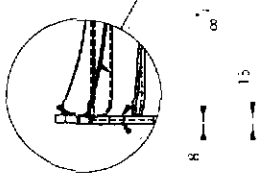


273 BASE GUSSET
EVN_5kW_12M_C_009
(12 OFF)

TYP. ALL GUSSETS 6

TYP. ALL GUSSETS 6

273 CHS BASE FLANGE
EVN_5kW_12M_C_008



DETAIL B
SCALE 1 : 10

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REV	DESCRIPTION	DRAWN	APP'D	DATE
B	WELD PREP ON BASE GUSSETS MODIFIED	A.P.H	I.J.B	24/08/2010
A	FOR MANUFACTURE	A.P.H	I.J.B	08/10/2009

NOTES :
1. ALL DIMENSIONS ARE IN MILLIMETRES WITH LEVELS SHOWN IN METRES
2. ALL DIMENSIONS NOT TOLERANCED TO BE WITHIN ±0.50mm
3. STEELWORK TO BE TO BS 7668 OR BS EN 10113-1, GRADE S275 (UNLESS OTHERWISE SPECIFIED) & FABRICATED IN ACCORDANCE WITH BS 5950
4. ALL BOLTS TO BE GRADE 8.8 SPUN GALVANISED TO BS 1692
5. ALL STEELWORK TO BE PICKLED AND HOT DIP GALVANISED IN ACCORDANCE WITH BS EN ISO 1461 (UNLESS OTHERWISE SPECIFIED)
6. REMOVE ALL BURRS AND SHARP EDGES

MATERIAL : SEE DETAILS

FINISH : GALVANISED

MASS (Kg.) : 327.72

HUTCHINSON ENGINEERING LTD
TEL. +44 (0)151 422 9990
FAX. +44 (0)151 420 5100
www.hutchinsonengineering.co.uk
EVERITE ROAD, WIDNES, CHESHIRE, WA8 8PT

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CLIENT : EVANCE
PROJECT : EVANCE 5kW / 12M WIND TURBINE STRUCTURE
TITLE : 273 CHS SECTION ASSEMBLY DETAILS

A3

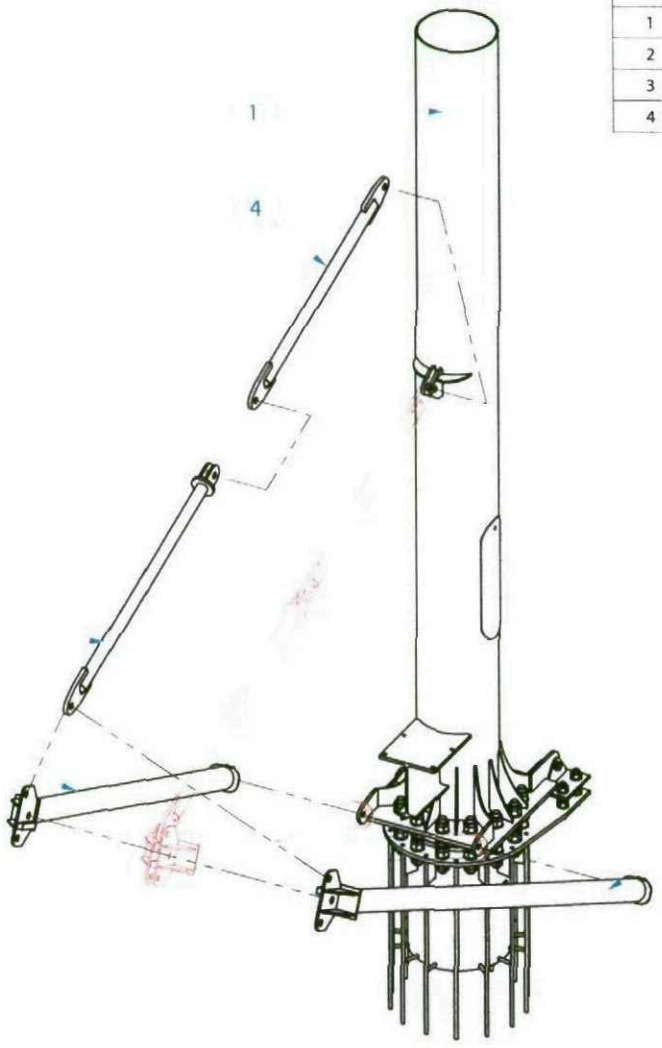
DRAWN :	APP'D :	CHK'D	SCALE :	DATE :
A.P.H	I.J.B	I.J.B	1:20	08/10/2009

DWG No **EVN_5kW_12M_A_002**

REVISION **B**

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.	WEIGHT (EACH)
1	EVN_5kW_12M_G_001	12m STRUCTURE	1	-
2	EVN_5kW_15M_A_801	COMPRESSION MEMBER	2	37.88
3	EVN_5kW_15M_A_802	TENSION MEMBER - LONG	1	12.65
4	EVN_5kW_15M_A_803	TENSION MEMBER - SHORT	1	13.13

SITE REF. :

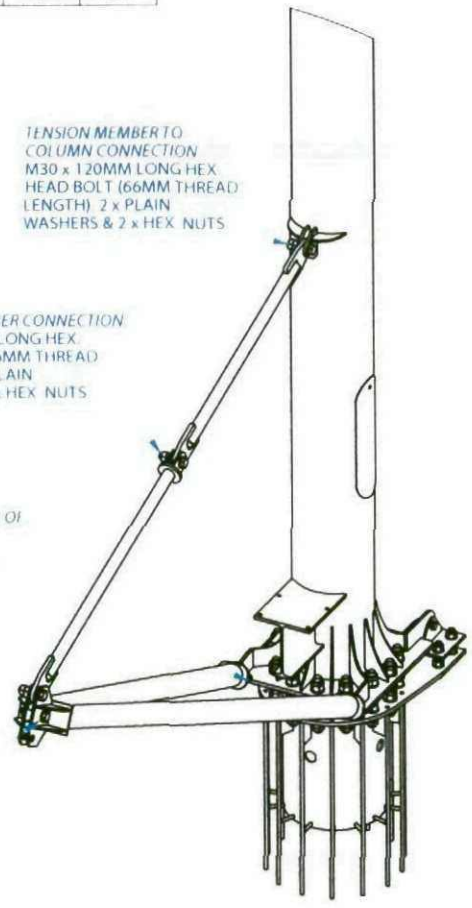


TENSION MEMBER TO COLUMN CONNECTION
M30 x 120MM LONG HEX. HEAD BOLT (66MM THREAD LENGTH), 2 x PLAIN WASHERS & 2 x HEX. NUTS

TENSION MEMBER CONNECTION
M30 x 120MM LONG HEX. HEAD BOLT (66MM THREAD LENGTH), 2 x PLAIN WASHERS & 2 x HEX. NUTS

COMPRESSION MEMBER TO COLUMN CONNECTION. 2 SETS OF
M24 x 100MM LONG HEX. HEAD BOLT (54MM THREAD LENGTH), 3 x PLAIN WASHERS & 2 x HEX. NUTS

TENSION MEMBER TO COMPRESSION MEMBER CONNECTION. 2 SETS OF:
M30 x 120MM LONG HEX. HEAD BOLT (66MM THREAD LENGTH), 2 x PLAIN WASHERS & 2 x HEX. NUTS



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REV.	DESCRIPTION	DRAWN	APP'D	DATE
A	FOR MANUFACTURE	A.P.H	I.J.B.	08/10/2009

NOTES :
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4. ALL BOLTS TO BE GRADE 8.8 SPUN GALVANISED TO BS 3692
5. ALL STEELWORK TO *BE PICKLED AND* HOT DIP GALVANISED IN ACCORDANCE WITH BS EN ISO 1461.
6. REMOVE ALL BURRS AND SHARP EDGES.

MATERIAL :

FINISH :

MASS (Kg.) :

TEL. +44 (0)151 422 9990
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EVERITE ROAD, WIDNES, CHESHIRE, WA8 8PT

CLIENT : EVANCE
PROJECT : EVANCE 5kW / 12M WIND TURBINE STRUCTURE
TITLE : GIN POLE ARRANGEMENT

A3

DRAWN :	APP'D :	CHK'D :	SCALE :	DATE :
A.P.H	I.J.B.	I.J.B.	1:25	08/10/2009

DWG No : **EVN_5kW_12M_G_002**

REVISION **A**

P9 4 of 4