

**To:**



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**Our Ref:**

Carn Fearn | 120m SLX4W-450 temporary met mast | planning support docs.

**Legend:**

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## 1: Description:

120m temporary met mast of guyed lattice construction, equipped with met sensors, designed and installed for the purpose of measuring site specific meteorological conditions for a period of one to three years at Carn Fearn Wind Farm, The Highlands, Scotland (*see Doc5*).

## 2: Dimensions & Specifications:

- 0.5m is maximum height of raft foundation above ground level (*see Doc10*).
- 117m is installed height of lattice sections (*see Doc3*).
- 2m is installed height of top sensor support pole (*see Doc3*).
- 120m is maximum overall height to top measurement sensor (*see Doc3*).
- Mast is finished with 20mm diameter lightning finial fitted to top sensor support pole which is connected to the earth kit at the base of the mast using copper conductor cable (*see Doc15*).
- 450mm is maximum face width of lattice section (center of mast leg to center of mast leg).
- 48mm is maximum diameter of each mast leg.
- 20mm is maximum diameter of lattice bracings.
- 2400x2400x500 is maximum dimension of removable mast raft foundation (*see Doc10*).
- 3 no. guy lanes, each with 5 no. removable buried guy anchors will be required to support the met mast for up to three years on-site robust service (*see Doc4*).
- 100m is maximum radius to outer guy anchor point (*see Doc4*).
- 2400x2400x200 is maximum dimension of each removable buried guy anchor (*see Doc12*).
- 3 no. guy wires are fitted at 13 levels to support the met mast for up to three years on-site robust service (*see Doc3*).
- 12mm is maximum diameter of each guy wire (wire rope).
- Bird Flight deterrent discs are fitted to each guy wire at approximately 10m intervals (*see Doc05*).
- 135mm is maximum diameter for each bird diverter disc (*see Doc14*).
- An Infra-Red LED autonomous powered (solar) aviation light is fitted near the top of the lattice section. Light can be steady or flashing as required (*see Doc13*).
- 12 no. is the typical quantity of met sensors which will be fitted to the met mast on met sensor support booms (*see Doc16*) (*see Doc17*).
- 2800mm is maximum length of met sensor support boom (measured from centre of mast leg) (*see Doc18*) (*see Doc19*).
- Each met sensor is fitted to a Data Logger which is housed in a robust shelter containing communications modem and solar power regulator and battery (*see Doc20*).
- The entire system is autonomous powered with small PV (solar) panel(s) fitted to the met mast at a maximum height of 6m above ground level.
- An ACD (anti-climb deterrent) frame is fitted to the met mast at approximately 3m above ground level and equipped with a robust combination padlock (*see Doc21*).

- Met Mast structural design to Eurocode standards (National Annex: UK).
- Design & Manufacturing conforms to ISO9001 standard.
- Materials and fabrication are in accordance with CE1090 Exec2 level with all certificates provided.
- All steel materials supplied are structural grade S275 & S355 standard.
- All steel hot dip galvanised following fabrication to EN ISO 1461 with a minimum average coating of 85 microns.
- All bolts are spun galvanised structural grade 8.8.
- All met sensor support booms comply with IEC61400.12.1.
- All met sensors are First Class with Measnet certificates as standard for anemometers and optional for other sensors.

### 3: General Methodologies:

- All met mast components are delivered in kit form to landowners yard on 24ft flat-bed rigid truck and offloaded for onward delivery to mast site (*see Doc02*) (*see Doc06*).
- No road closures are required.
- Site access to met mast site is by forest track and across open peatland. Delivery from storage yard will require...
  - ATV carrier (*see Doc07*).
  - Helicopter (*see Doc08*).
  - In preparation for assembly and installation (*see Doc09*).
- Site set up at the met mast base includes...
  - Assembly of removable raft foundation (*see Doc10*).
  - Setting up crew welfare facility and First Aid Station.
  - Installing safety signage to site access points.
- Installation of removable buried guy anchors includes...
  - Excavation with low ground impact excavator (*see Doc11*).
  - Excavate to 2m depth.
  - Installation of ground anchor.
  - Back fill over anchor footings with returned soil.
  - Reinforce with stone from local borrow pit if required.
  - Pull test anchor using calibrated dynamometer.
  - Installation of fencing (*see Doc12*).
- Met Mast installation includes...
  - Handling of lattice modules (max weight 100kg) (max length 3m).
  - No crane required.
  - No access track required.
  - Lifting at height by means of remote hydraulic winch secured to anchor point (*see Doc09*).
  - All materials lifted in kit form until required installation heights are achieved for all mast modules, met sensors and associated ancillaries.
  - Guy wires are tensioned using guy wire tensioning tools and final fine tuning is achieved by in-line turnbuckle tensioners.
  - An anti-climb deterrent frame is fitted and locked prior to departure from site (*see Doc21*).
  - Statutory safety and warning signs are fitted to the met mast prior to departure from site.

- Removal:
  - All components are classified as temporary and will be removed after one – three year measurement data is achieved.
  - Removal is reversal of installation methodologies.
  - All materials will be removed for recycling as required.
  - Materials which are unsuitable for recycling will be disposed of at a licensed recycling facility.
  - Ground anchor removal will require ground reinstatement with returned soil at each guy anchor location.

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We trust that you will find the information provided helpful to support your planning application for this project.

Please do not hesitate to contact the undersigned with any queries or clarification requests.

We look forward to hearing from you in due course.

Best regards,

*Mick*

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