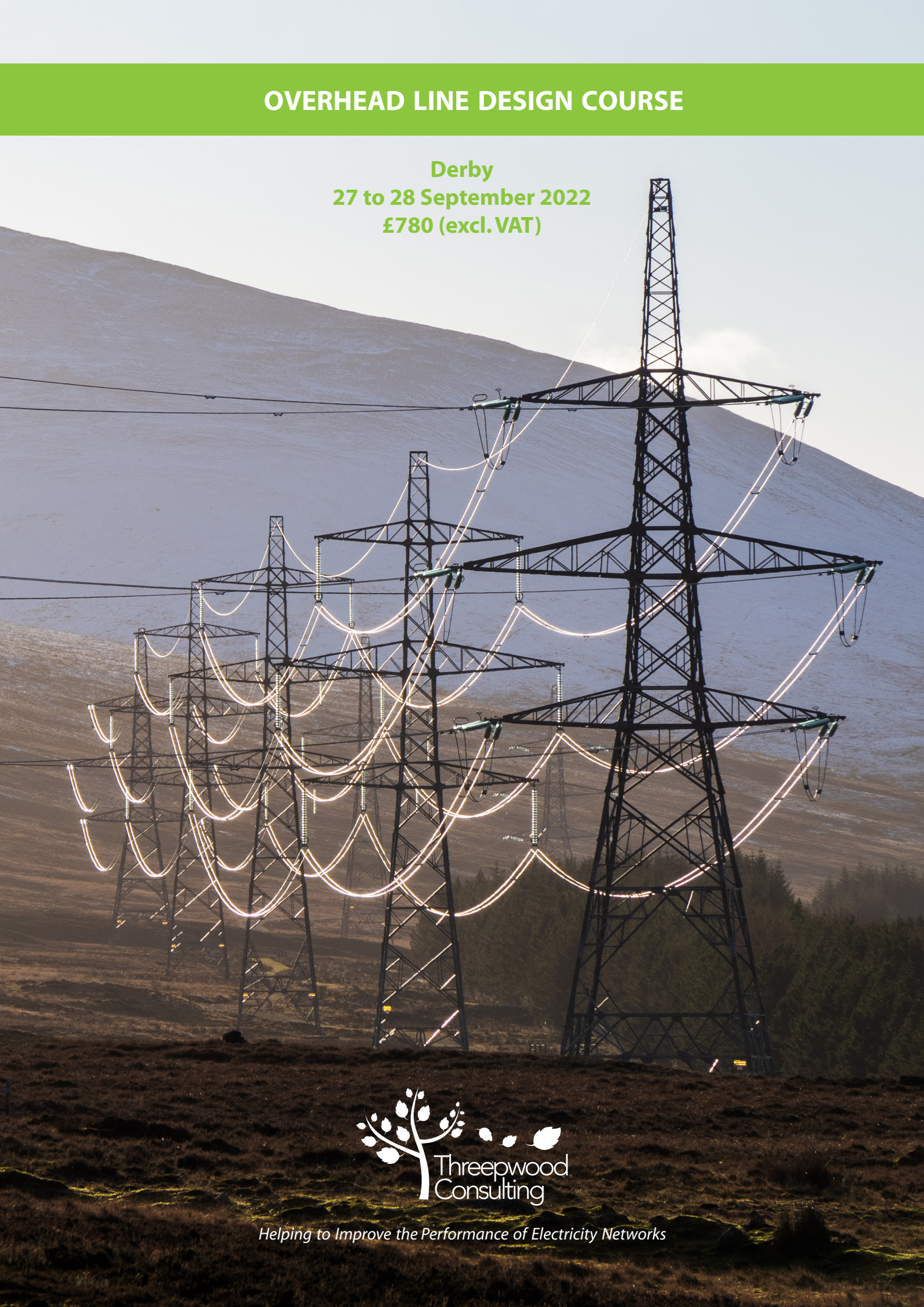
OVERHEAD LINE DESIGN COURSE

Derby
27 to 28 September 2022
£780 (excl. VAT)



Threepwood Consulting

Helping to Improve the Performance of Electricity Networks

Course Overview

A face-to-face 2-day course delivered by one of the UK's leading overhead line design experts Bill Sayer. Bill has more than 40 years' experience in overhead line design and engineering and is the current Chair of the BSI PEL/11 committee for Overhead Lines.

Focusing on overhead line design deployed by network operators in the UK, this course offers delegates the chance to really understand what matters when it comes to making decisions about overhead line design, operation and management.

What engineering aspects lie hidden behind the humble overhead line? Delegates will take away the answers and practical tools to enable them to be competent in how an overhead should be designed and managed.

1 Who is it for

The course is designed to give delegates a solid understanding of overhead line design and operation concepts, as well as providing experienced engineers with the knowledge they need to get the most from overhead line systems.

Delegates could be:

- Working in DNOs, IDNOs, ICPs who are designing or assessing designs of overhead lines
- Recent entrants to the electricity industry seeking an understanding of overhead line design
- Asset owners involved in network design who wish to extend their knowledge to overhead line design
- Technical staff wishing to understand the key elements of overhead line design to provide assurance and confidence when deploying designs 'tools'
- Engineers already involved in overhead line design who are seeking the next level of knowledge

2 Course topics

1.1 CONDUCTOR TYPES and SAGS & TENSIONS

- Conductor properties, types and selection (incl. High Temperature Low Sag HTLS conds.)
- Fibre optic conductors
- Maximum conductor tension, vibration, erection tensions and creep
- Development of Sag and Tension calculations
- Mechanical fittings (clamps, vibration dampers, aircraft warning spheres)
- Current ratings (ENA EREC P27)

1.2 WOOD POLES

- Pole structure and sizing (EN 14229), effect of moisture content
- Pole testing and characteristic strengths
- Pole marking
- Wind span and Intermediate pole calculations
- P-delta and increased factors of safety
- Weight span and stayed pole calculations
- Durability (creosote/CCA and latest environmental alternatives)
- Pole rot and importance of testing

1.3 ENGINEERED POLES

- Steel, concrete and FRP designs discussed (ENA TS 43-18)
- Importance of broken wire resistance for tubular poles

1.4 STEELWORK

- Phase spacing
- UTS and yield stress
- Three basic load directions on crossarms due to MCT, MCW and MCP
- Bending moment calculations (M = fZ)
- Assessing crippling load in material (slenderness ratio and effective length)

1.5 FOUNDATIONS

- Soil strength (lateral and bearing)
- Typical intermediate calculation
- Bearing assessment for stayed pole
- Tower foundation examples

1.6 WEATHER LOADINGS

- Wind and ice actions
- Deterministic assessment and factors of safety
- Probabilistic assessment to BS EN 50341-2-9 and partial factors

1.7 INSULATORS and INSULATOR STRINGS

- Pin/post/tension insulators
- String fittings (arc horns, sag adjusters, yoke plates, etc.)
- Electrical type testing

1.8 ENA TS 43-40

- Guide to use

1.9 STEEL TOWER LINES

- Tower types and families (L4M, L7C, L2, etc.) and PB/PU self-supporting mast structures
- Earthwire and lightning shade angle
- Wire clearance diagrams
- Temporary masts
- Continuous stringing support systems (i.e. CSS, Skysafe)
- Tower line stringing and EPZs
- Back-flashover
- Assessing defects

1.10 PROFILES and SURVEY

- General principles
- Profiling, line schedules, route and access maps
- Side slope
- ESQCR and ENA TS 43-8
- ENA EREC G54
- LiDAR

3 Course booking information

Course duration:	2 days
Course dates:	27th and 28th September 2022
Course venue:	Holiday Inn Derby Riverlights, Morledge, Derby. DE1 2AY
Cost:	£780 excluding VAT per delegate.

The course and course materials will be in English.

All delegates will receive:

- A Handbook covering all overhead line design topics
- Electronic access to the course slides; and
- Record of Completion at the end of the course.

The course will account for 12 hours CPD.

The course registration fee includes tuition, course materials, lunches and refreshments. Delegates will cover their own costs of travel and accommodation.

4 Booking

If you are interested in attending this course, please submit register via the following link:

https://bit.ly/tcl-course-sep

Payment & cancellation conditions will be confirmed during booking.

Threepwood Consulting reserve the right to cancel or reschedule the course.

Threepwood Consulting

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