

## Halifax, West Yorkshire

### Our Services

- Desk Study
- Topographical Survey
- Intrusive Investigation
- Slope Stability Assessment
- Project Management



### Transmission Tower Slope Stability Assessment

Following reports of structural deformation to an existing tower, **CGL** were appointed to undertake a topographical survey of the structure and adjacent ground levels at the transmission tower. This allowed **CGL** to design an intrusive investigation to determine the likely cause of deformation from which viable remedial solutions for the client were provided.

As the tower was located on a steep slope, **CGL** modeled the slope and proven ground conditions using specialist slope stability software to identify the likely failure mechanisms.

The resultant tower movement was identified to be attributable to two factors: a mining adit immediately beneath the tower appeared to have collapsed, and shallow lateral soil movement of the steep slope causing foundation movement and tower deformation.

CGL therefore recommended that further topographical monitoring be undertaken to

confirm tower movement, along with the following remedial solutions:

- Stabilising foundation movements via dowels drilled through existing foundations,
- Installing cut-off drain upslope of the tower to limit the influence of groundwater, and
- Grout injection to stiffen the underlying ground within the locality.

These site specific recommendations were presented with the aim of stabilising both the slope and tower foundations to ensure further deformation did not occur.

Client: Electricity Alliance East

*(on behalf of National Grid)*