

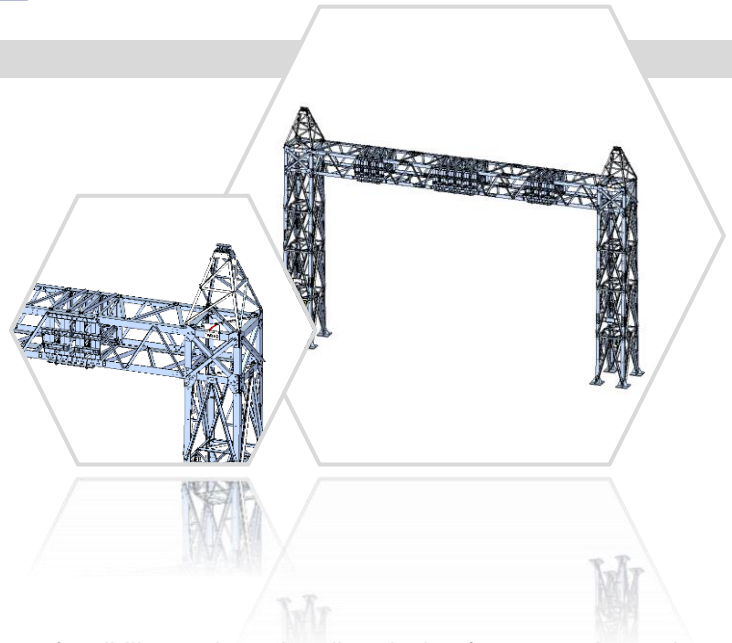
CASE STUDY

400kV FULL LINE TENSION (FLT) GANTRY



PROJECT AT A GLANCE

Client:	National Grid
Project:	400kV Full Line Tension Gantry
Value:	£60,000
Location:	Hinkley, Somerset
Year:	2017-2018
Duration:	6 Months



PROJECT BRIEF

National Grid (NG) had initially commissioned LSTC to conduct a feasibility study and outline design for a generic steel lattice full line tension (FLT) gantry. Subsequently, LSTC has been instructed to undertake further detail design and produce construction drawings. As part of an initiative to improve visual impact, NG aim to use this design on numerous Major Infrastructure Development (MID) projects, with the possibility of a generic design for other projects.

CHALLENGES

- To design and detail this structure, we had to maintain non-standard internal clearances to NG standards under a long span of 265m and maintaining 30° maximum angle of entry for phase conductor.
- Height of the FLT gantry was also restricted to the substation standards.
- Providing flexibility for conductor attachment catering for two conductor system, i.e. 3 x 700mm² AAAC Araucaria conductor and 2 x 850mm² AAAC Redwood.
- The overall footprint was also smaller than expected for this type of structure.

OUR APPROACH

LSTC developed an outline and detailed design structure to carry the heaviest conductor system of triple 700mm² AAAC Araucaria conductors. Two different designs were provided, 26m and 22m widths, to offer the maximum flexibility for different phasing arrangements to suit all 400kV tower suits. Various exercises were undertaken to identify the optimum design to suit different phasing arrangements.

PROJECT OUTCOME / DELIVERABLES

- This project was completed on time and within the budget, with National Grid initially deploying this structure on the Hinkley project.
- An FLT gantry structure is hugely cost effective compared to other tubular type gantries available.