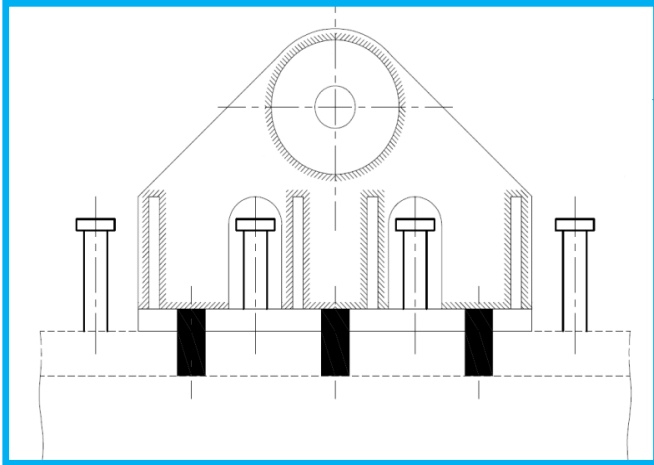


Specialised Lifting Lug

20 N° large span roof beams were required to be safely installed on a nuclear site. Several options were considered but as the beams weighed over 10 Tonne each and had hundreds of shear studs conventional lifting eyes were not practical. As slinging was unacceptable on the site Peers were challenged with designing suitable lifting lugs.



Elevation on Lifting Lug



Lifting Lugs on Beams



View a long the length of the beam

Key Points

- Load kept on centre line of beam.
- An overall Safety Factor of 2.0 was used (EC3 recommendation).
- Lugs were positioned at 1/3 points.
- Chain angles were kept to a maximum of 45°.
- As part of the design only the outer 4 bolts were used, though 6 were specified.
- Shear Studs were unaffected.
- Only 3 sets of lugs were fabricated, so they could be re-used on other beams.
- Lugs will be adopted into Peers lifting lug library for use on future projects if possible.
- Lugs were painted orange to allow them to stand out as temporary.
- Fixing holes were blocked up with bolts prior to concrete pour.
- Conventional slings were considered but they are not recommended by the HSE because of the lack of control during and possible damage to the strops during lifting.
- Lugs were made light enough to be lifted by one operative.
- Lugs from web were considered but they were considered impractical.

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