

1. Problem Statement

Caissons are used in a variety of applications on offshore production platforms and vessels. Common uses for caissons are firewater and seawater lift, drain, as well as I/J-Tube applications. Due to platform life extension, caissons have often been in place longer than planned, and deterioration and failure of caissons is a growing trend in the North Sea and worldwide. This deterioration and failure may present a dropped object risk to subsea structural and piping systems. Their size and location also often make them difficult to access.

2. Aims

As there are a number of caisson-related issues across late-life assets, Global Energy Group (GEG) has reacted to the industry-wide issue of caissons with a bespoke offering via our Integrated Caisson Team (ICT). This initiative provides a cost efficient and value-added turnkey caisson solution and one-stop shop service.

3. Method

In an industry where innovation and collaboration are key, the ICT is a seamless approach and also offers the opportunity to have one interface and a unique commercial offering.

This ICT is made up of a number of companies with specialities dealing with caisson issues. We've teamed together to provide a collaborative offering, cost-efficient and value-added turnkey solution for caisson-related scopes.

4. Impact

The philosophy behind the ICT model is the provision of a one-stop caisson remediation and replacement offering that identifies best value solutions by combining the services of selected ICT partners throughout the project life cycle.

Of significant value is the ability of the ICT to offer options to a variety of solutions from within the structure of the ICT, without the need to bring in additional external resources. Examples include:

- Options for either welded or weldless connections of caisson sections
- The use of conventional rigging equipment or specialist caisson lifting tools during destruct and construct
- Options to coat caissons with client-specified coating systems or utilisation of one-coat systems complete with coating warranties during the fabrication process
- Options to install marine growth prevention systems at the time of caisson installation, or as retrofit solutions to existing caissons (this option is available to risers, conductors and structural tubulars)
- Options for nitrox diving capability to 50 metres or cofferdam support in the splash zone
- Alternative access solutions including rope access, WEB deck and tension netting systems, all installed by multi-disciplined access and trade technicians
- Options for platform, vessel or daughter craft-based diving operations

The ICT is also a platform for knowledge sharing across varied specialist skills and tooling:

- GEG – inspection, survey, design, fabrication, repair, construction/installation – both topside and subsea
- Acotec – Solvent free one-coat Humidur coatings and underwater cofferdams
- STATS Group – caisson securing and lifting tools
- GMC – weldless connectors
- CETCO – temporary produced water systems
- Cathelco – cathodic protection systems