



CASE STUDY

SECONDARY CONTAINMENT INSPECTIONS AND UPGRADES

CLIENT: CONFIDENTIAL

LOCATION: UK

Highlights:

- Secondary Containment Assessment
- CIRIA C736 Assessment
- COMAH Containment Review
- Civil Engineering Design
- Construction Cost Estimation
- Environmental Risk Assessment



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THE CHALLENGE

Arthian was requested to assist with a Secondary Containment Study within a petrochemical storage facility to provide the client with information to help the re-endorsement of tanks within a COMAH Upper Tier installation.

The client needed to understand:

- current condition of the bunds
- associated compliance risks
- engineering works required to comply with Recommended Good Practice Guidance (RGP), (CIRIA C736)
- remediation programme costs

The site is comprised of ten bunds including both earth and concrete systems and was positioned directly adjacent to a major river. This project required a multi-disciplinary approach, agile thinking, and a team capable of navigating technical, environmental, and regulatory constraints simultaneously.



THE SOLUTION

The Arthian team delivered a comprehensive scope of works to handle the problem, which included:

Secondary Containment Assessment

Engineers carried out visual inspections of the containment systems in accordance with Arthian's internally developed Written Scheme of Inspection (developed to ensure compliance with RGP). Arthian delivered a structured, evidence-based inspection solution combining detailed site assessment, accurate defect mapping, and clear client reporting:

- **Defect identification & recording:** visible defects were measured, photographed, and marked directly onto location plans for each secondary containment bund.
- **Engineering verification:** site sketches were converted into detailed engineering drawings, clearly identifying the extent, severity and location of all defects.
- **Visual evidence capture:** photographs were compiled to support findings and provide clear visual context for the Client
- **Clear deliverables & risk visibility:** the final outputs provided the Client with accurate, traceable records of all secondary containment bunds condition to support risk assessment and remedial planning.
- **COMAH Containment Scorecards:** each bund was rated against each item of COMAH containment policy to highlight compliance or where upgrade is required.

The result was a clear, auditable representation of secondary containment bund integrity across the inspected structures, enabling the prioritisation of remediation works and ensuring compliant secondary containment practices are being carried out in accordance with relevant codes and standards.



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THE SOLUTION, CONTINUED

Civil Engineering Design

Utilising the information gathered during the secondary containment assessments, Arthian engineers were able to provide the client with a detailed drawing package of design repairs which could be passed to a contractor to carry out the works on site.

Arthian's in-depth knowledge of CIRIA C736 and experience of producing detailed design drawing packages ensured not only compliance with RGP but also considered constructability and efficiency.

Construction Cost Estimation

Arthian engineers developed an Order of Magnitude Costing document to provide the client with budgetary costings for carrying out the onsite remediation works to bring their secondary containment systems in line with RGP.

This allowed the Client to gain a better understanding of the costs associated with each repair, and combined with the defect prioritisation, gave them valuable information to make informed decisions regarding what site works could be carried out when.

Environmental Risk Assessment

The outputs of the inspection works were used to input into an updated CDOIF Environmental Risk Assessment, also undertaken by Arthian.



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