

Zebec Marine Consultants & Services Pvt. Ltd. with its vast experience in Shipbuilding project management and Design & Engineering Services is equipped to offer the complete engineering solution for Scrubber Retrofit.

➤ **On Board Site Survey, Scanning and Data Registration**

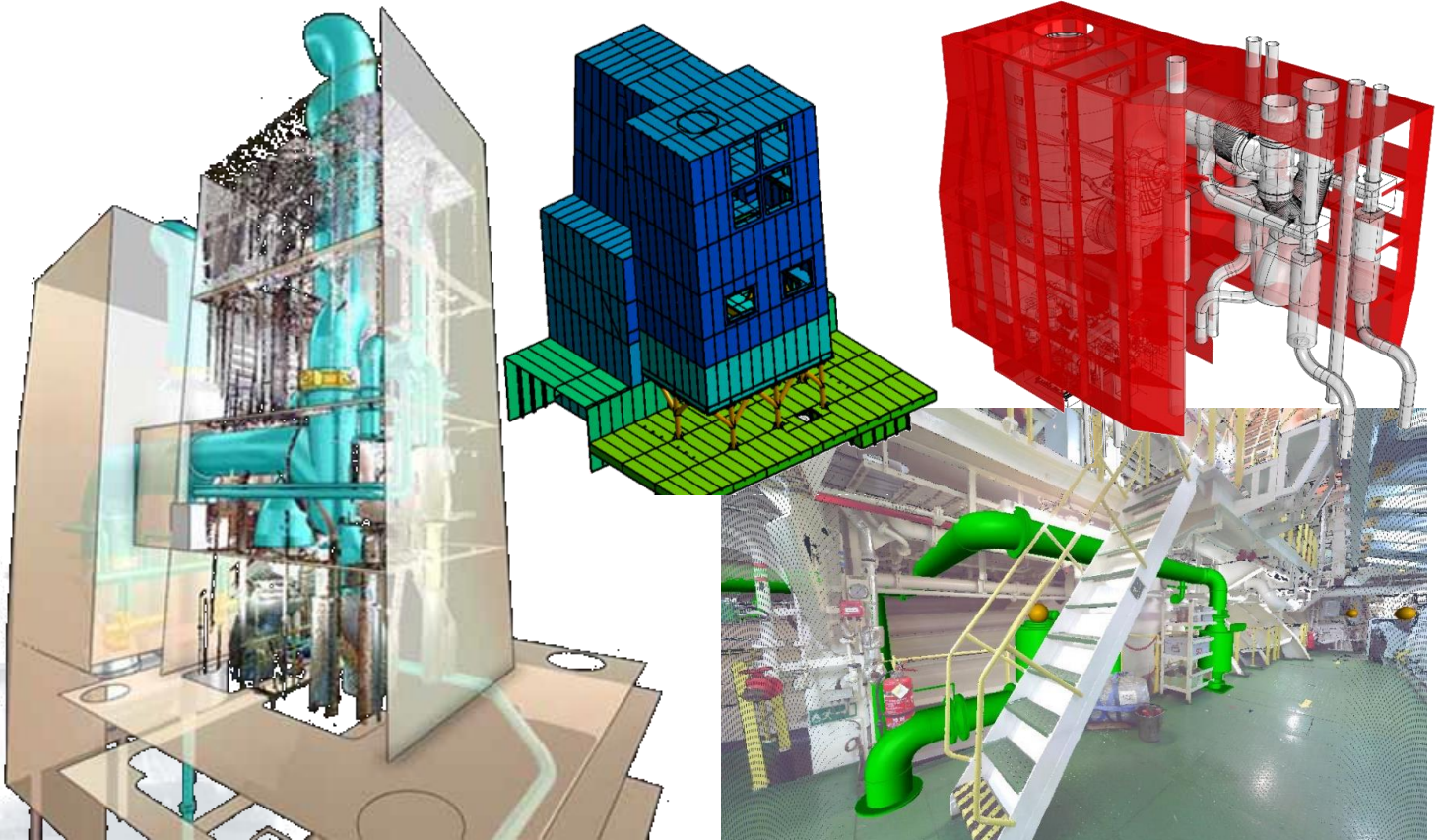
- Convert existing ships drawings into AutoCAD format
- Using 3D laser scanning equipment scan the proposed location and convert the cloud points into AutoCAD
- Superimposing the scrubber equipment into prepared 3D Modeling of the proposed location
- Check the feasibility, detection of clashes, propose routing of exhaust piping to meet the OEM, Class and Operational requirements

➤ **Detailed Engineering**

- Update the existing P&ID diagram of the exhaust system with the new scrubber unit and corresponding equipment and piping
- Prepare detailed 3D Model and generate spool drawings and arrangement drawing
- Prepare information required for the fabrication and installation of exhaust piping, additional sea water, fresh water piping and bill of material
- Submission of drawings to class for approval and technical liaison with class to obtain the approval

➤ **Site Supervision**

- Supervision of installation of the system to meet the class and operational requirements



** All images used are for illustrative purposes only*