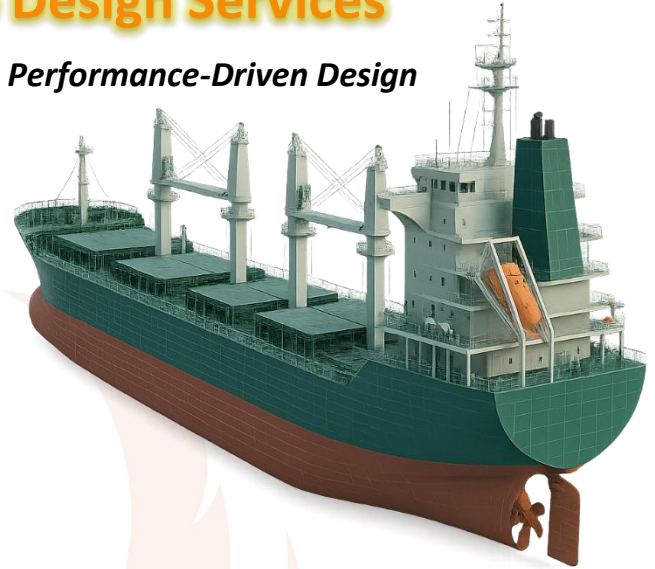




Naval Architecture & Ship Design Services

Concept to Construction • Class-Compliant • Performance-Driven Design

ALQAQNOOS Engineering offers comprehensive Naval Architecture and Ship Design services for new construction, conversions, and retrofits across commercial, offshore, and special-purpose vessels. Our designs focus on safety, regulatory compliance, efficiency, structural integrity, and lifecycle performance from concept to detailed production drawings.



1. Concept & Basic Design

We transform all requirements into viable ship concepts:

- Principal dimensions and hull form selection
- General Arrangement (GA) plans
- Speed-Resistance prediction and Power estimation
- Intact & Damaged Stability analysis and Weight estimation
- Machinery and tank arrangement plans
- Compliance with Flag & Classification requirements

Outcome: Delivering a technically feasible, cost-effective vessel concept that is ready for class approval, accelerating project timelines, and reducing costs.

2. Detailed Engineering & Production Drawings

We develop full construction-ready documentation:

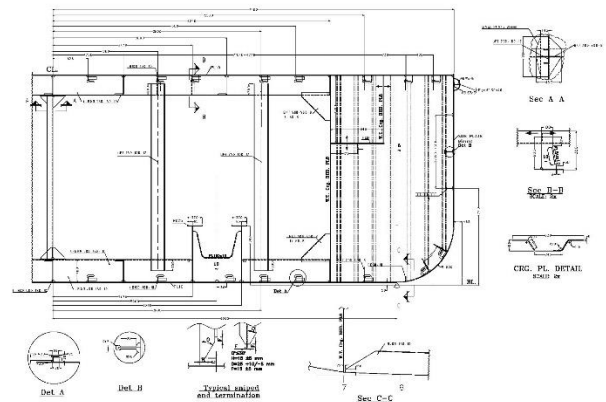
- Structural scantlings & FEM-based strength checks
- Hull steel construction drawings
- Outfit, accommodation & Deck machinery drawings
- Piping design (fuel, ballast, bilge, fire, cargo systems)
- Electrical load analysis & cable routing layouts
- 3D modeling and production planning

Outcome: Yard-ready drawings for precise fabrication and installation.

3. Stability, Trim & Hydrostatic Analysis

Advanced compliance calculations, including:

- Intact & damage stability for class & flag approval
- Trim, heel & draft analysis
- Longitudinal strength & load distribution
- Sounding booklet
- Stability booklets for class & flag approval
- Inclining test procedure and report



4. Hydrodynamic & Performance Studies

We optimize hull efficiency using numerical analysis:

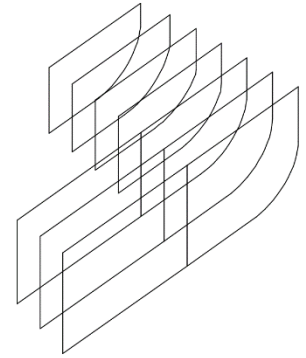


- Resistance & propulsion calculations
- CFD hull optimization
- Propeller selection & thrust estimation
- Fuel efficiency and emission-reduction studies

5. Newbuilding, Conversion & Retrofit Design

We support a wide range of projects:

- New vessel designs (Tugs, OSVs, Tankers, Barges, Patrol & Crew boats)
- Vessel conversions & life-extension projects
- Deck reinforcement & crane foundation design
- AMP, shaft generator & hybrid system integration



6. Class, Flag & Regulatory Support

We prepare and manage all technical submissions to:

- Classification Societies
- Flag Administrations
- Port State & Environmental Authorities

Including drawings review coordination, comments closure, and final technical approvals.

7. As-Built Documentation & Digital Twins

- As-built preparation for GA, Structural, Piping, Electrical, & Safety drawings
- Weight control and lightship updates
- Digital vessel models for lifecycle management

8. Our Engineering Tools & Capabilities

- Advanced CAD & 3D modeling applications
- Stability, hydrostatics & CFD software
- Structural strength software
- Integrated electrical and piping design systems

Why Choose ALQAQNOOS for Naval Architecture?

- ❖ Multidisciplinary naval architects and marine engineers
- ❖ Complete concept-to-delivery design services
- ❖ Strong emphasis on safety, efficiency, and class compliance
- ❖ Practical, yard-oriented engineering solutions
- ❖ Quick response for feasibility, modification, and retrofit studies



Your Partner for Safe, Efficient, and Class-Approved Ship Design

With **ALQAQNOOS** Naval Architecture & Ship Design Services, you receive technically sound, regulation-compliant, and performance-optimized vessels, built for reliability, efficiency, and long-term operational success.