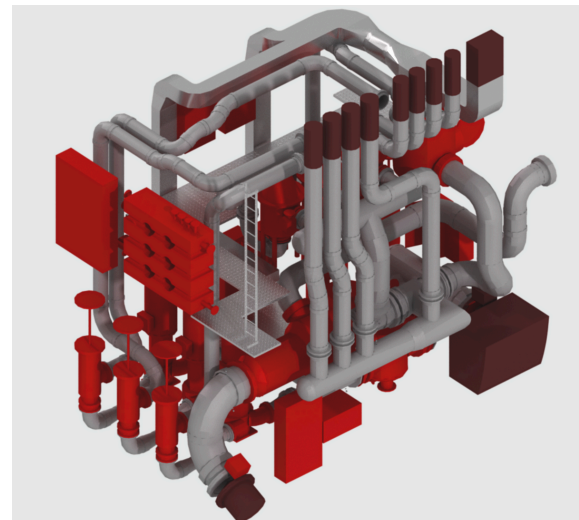
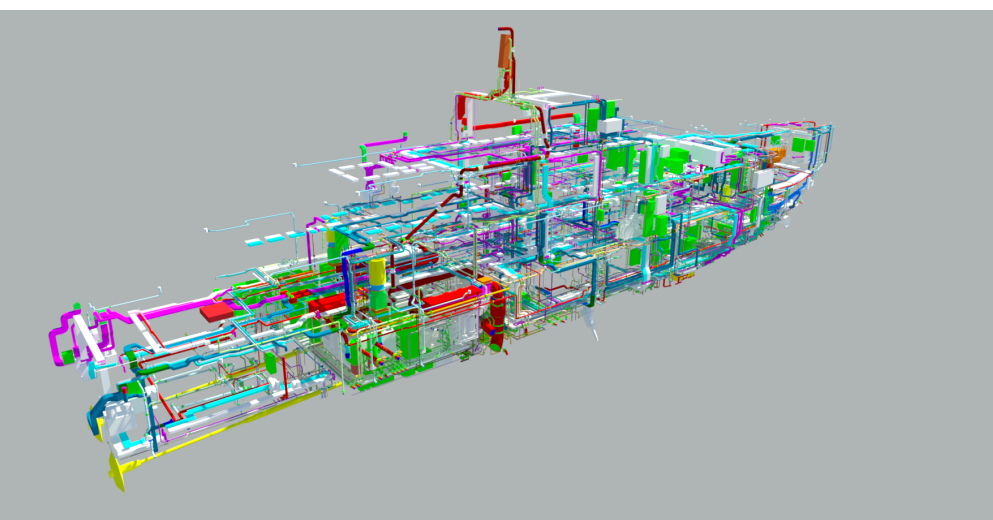


FLOWTECH  
SOLUTIONS

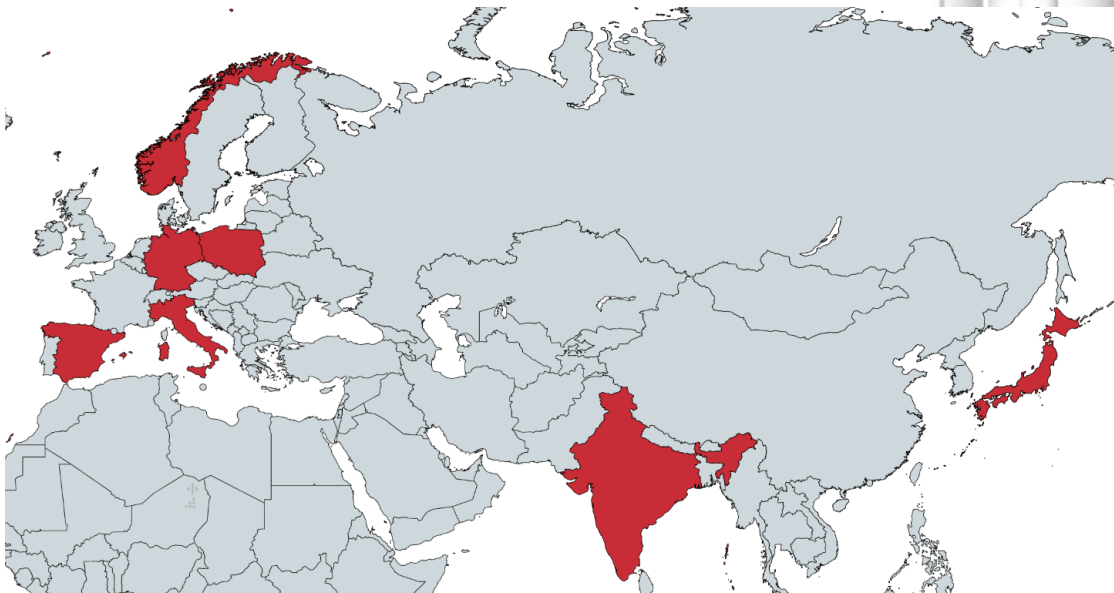


## ABOUT US:

**We specialize in solving shipbuilding design challenges for owners, shipyards, and design offices.**

**FlowTech is an independent ship design and engineering company headquartered in Rijeka, Croatia.**

With more than 10 years of experience and involvement in 25+ shipbuilding and offshore projects, we have collaborated with over 10 shipyards and design offices across 8 countries worldwide. This international experience enables us to implement a lot of good practices and solutions into our work.







## 1. MARINE AND OFFSHORE ENGINEERING

### 1.1. INITIAL DESIGN AND BASIC ENGINEERING

- Defining positions of technical spaces, main equipment, tanks, exhaust and HVAC rooms on General arrangements in compliance with all involved disciplines
- Pipe system diagrams and armature datasheets
- Equipment lists and coordination with vendors
- Preliminary 3D model of HVAC, piping, outfitting and electrical equipment in main ship compartments
- Layout drawings of technical spaces
- Preliminary calculations

### 1.2. DETAIL ENGINEERING

- Detailed 3D modeling of equipment, piping, outfitting, HVAC and cable trays in machinery and accommodation areas
- Quality control of 3D models using detailed checking procedures
- Custom software applications
- Technical consulting and coordination
- Team leading and organization

### 1.3. PRODUCTION DOCUMENTATION

- Pipe installation drawing
- Pipe penetration drawing
- Coordination drawings
- Pipe and duct production sketches
- Material reports
- Other drawings required by the yard

## **2. INTERIOR OUTFITTING**


### **2.1. NETSPACE AND INTERIOR DETAILED OUTFITTING**

- Netspace optimization according to shipbuilding standards and designers wishes
- Netspace includes walls, floors, ceilings, and the needed subconstructions for the public, owner, crew, and outside areas.
- Implementation for all door types (A-type, B-type, C-type, and WTD, hinged and sliding), windows, electrical supply boxes, and inspection hatches.
- 3D detail interior model preparation and 3D render visualization

### **2.2. INTERIOR DETAILED DRAWINGS**

- Netspace drawings
- Detailed room arrangements
- Floor plan
- Barewall and decoration wall arrangement
- Ceiling plan with all service and inspection hatches
- Interior production drawings





### **3. SCRUBBER SYSTEM INTEGRATION AND RETROFIT ENGINEERING**

- Feasibility studies to determine optimal scrubber system implementation
- 3D laser scanning resulting in a point cloud file able to recreate all required spaces in a CAD software
- Detailed engineering - pipe sketches, installation, coordination and existing pipe modification drawings
- “As build” documentation
- Technical assistance throughout fabrication and installation
- Project management

### **4. ON-SITE ENGINEERING**

- Preparing proposals and solutions to improve building strategy based on project preparation and feasibility studies in compliance with yard technologies
- Fully flexible engineering support and cooperation depending on customer requirements
- On-site coordination with yard and project office in order to find the best possible solution in the shortest possible amount of time
- Transfer of knowledge through various training projects and courses
- Project management support

## 4. RESEARCH & DEVELOPMENT

### 4.1 FINITE ELEMENT ANALYSIS

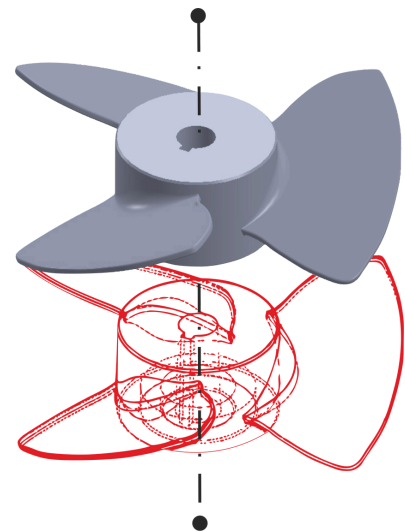
- Simulations of service loading conditions
- Structural analysis and calculation of various industrial components
- Thermal analysis of heating and cooling machinery equipment
- Product design optimization

### 4.2 COMPUTATIONAL FLUID DYNAMICS

- CFD analysis in various engineering domains:
  - Hydrodynamic analysis
  - HVAC analysis and design
  - Fluid-structure interaction analysis
- Pressure drop calculations
- Product design optimization

### 4.3 CUSTOM SERVICES

- Programming – development of specific custom engineering applications for automation in the working process
- Project development and organization – creating workflows, guidelines, databases and internal standards improving the quality and efficiency of a specific project
- Education and training services



## EXPERIENCE IN USING THE LATEST SOFTWARES FOR MARINE AND OFFSHORE INDUSTRIES:

AVEVA Marine

Autodesk (AutoCAD; ShipConstructor)

FORAN

Micro Station V8

SolidWorks

CATIA

ANSYS

Siemens FEMAP

CADMATIC

# PREVIOUS PROJECTS



## SHIPBUILDING – PRINCIPAL AND DETAIL ENGINEERING

- Title: UT 782 WP AHTS SIEM OFFSHORE  
Client: Remontowa S.A. Poland  
Environment: FORAN and AutoCAD
- Title: UT 776 WP MONKSTER GONDAN  
Client: Astilleros Gondan S.A. Spain  
Environment: FORAN and AutoCAD
- Title: NVC 387 LIVE FISH CARRIER KLEVEN YN375  
Client: Kleven Maritime, Poland  
Environment: FORAN and AutoCAD
- Title: UT540WP DONG GONDAN  
Client: Astilleros Gondan S.A. Spain  
Environment: FORAN and AutoCAD
- Title: NVC 387 BAKKAFROST KLEVEN YN380  
Client: Kleven Maritime, Poland  
Environment: AVEVA Marine and AutoCAD
- Title: UT 777 CD KAWASAKI  
Client: Kawasaki heavy industries, Japan  
Environment: AVEVA Marine and AutoCAD
- Title: P17A Shivalik-class frigate  
Client: Indian Navy / Fincantieri, Italy  
Environment: AVEVA Marine and AutoCAD
- Title: POLAR CRUISE HURTIGRUTEN  
Client: Kleven Maritime, Norway  
Environment: AVEVA Marine, AutoCAD, On site

## YACHT BUILDING – PRINCIPAL AND DETAIL ENGINEERING, INTERIOR OUTFITTING

- Title: Yacht Project PHOENIX 796  
Client: Nobiskrug, Germany  
Environment: AVEVA Marine, AutoCAD, On site
- Title: Yacht C109 - 58m  
Client: Tankoa, Italy  
Environment: ShipConstructor, AutoCAD, On site
- Title: Yacht Project (confidential)  
Client: Lürssen Yachts, Germany  
Environment: CADMATIC, AutoCAD, On site

## CFD ANALYSIS PROJECT - CARGO SPACES VENTILATION

- Title: NB 526 Livestock Carrier  
Client: Uljanik  
Environment: ANSYS Fluent, ICEM CFD

## SHIPBUILDING – INSTALLATION OF EXHAUST GAS (SCRUBBER) CLEANING SYSTEMS

- Title: BIG FISH  
Client: Tekno Consulting S.r.l, Genova  
Environment: ShipConstructor/AutoCAD
- Title: CRUISE BONARIA  
Client: Tekno Consulting S.r.l, Genova  
Environment: ShipConstructor/AutoCAD
- Title: CRUISE FESTOS PALACE  
Client: Tekno Consulting S.r.l, Genova  
Environment: ShipConstructor/AutoCAD
- Title: CRUISE EUROPE  
Client: Tekno Consulting S.r.l, Genova  
Environment: ShipConstructor/AutoCAD
- Title: CRUISE OLBIA  
Client: Tekno Consulting S.r.l, Genova  
Environment: ShipConstructor/AutoCAD
- Title: FLORENCIA  
Client: Tekno Consulting S.r.l, Genova  
Environment: ShipConstructor/AutoCAD
- Title: CORFU  
Client: Tekno Consulting S.r.l, Genova  
Environment: ShipConstructor/AutoCAD

## OFFSHORE OIL AND GAS INDUSTRIES – REVISION OF PROCESS DIAGRAMS, DETAIL ENGINEERING AND DRAFTING

- Title: AbuSafah  
Client: Saipem  
Environment: Micro Station V8/AutoCAD
- Title: Arbi  
Client: Saipem  
Environment: Micro Station V8/AutoCAD
- Title: Urinj refinery - Revision of process diagrams  
Client: INA  
Environment: AutoCAD, On site



## CONTACTS:



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### TECHNICAL DEPARTMENT



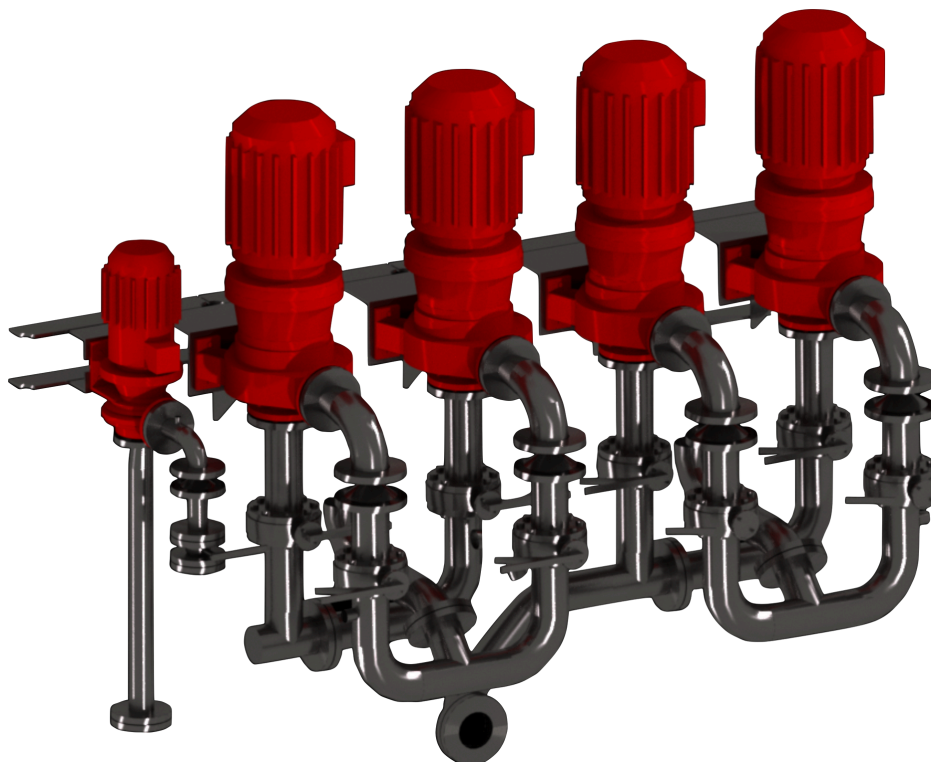
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