



- 3 Introduction
- 4 Milestones
- 6 Delivering total solutions
- 8 Raising the bar for ship design
- 10 Utilising smart technologies in ship construction
- 12 Repair and conversion solutions
- 14 Cradle-to-grave product lifecycle management
- 16 Digitisation and smarter ships
- 18 Venturing beyond familiar waters
- 20 Delivering sustainable environmental solutions
- 22 Global clientele
- 23 Business excellence

Stakeholders

At ST Marine, we work together with customers, partners and associates to deliver innovative products and excellen services, ensuring a journey for continued success and growth.

Our core values of Integrity, Value Creation, Courage, Commitment and Compassion guide us in our endeavour with stakeholders to build trust and strengthen our partnership.

Our Vision

To be an impactful enterprise offering niche turnkey and sustainable solutions to our customers' needs in marine, offshore and environmental engineering.

Our Mission

To continuously innovate and be globally competitive in our products and services.

ST Marine (Singapore Technologies Marine Ltd) is the marine arm of ST Engineering (Singapore Technologies Engineering Ltd). Headquartered in Singapore and listed on the Singapore Stock Exchange, ST Engineering is an integrated engineering group providing solutions and services in the aerospace, electronics, land systems and marine sectors.

Founded in 1968, ST Marine is a premier shipyard providing highly customised products and services. With proven design & building capabilities, tailoring innovative solutions to customers' exacting operational requirements and extensive product lifecycle management support, ST Marine possesses rich experiences and a highly skilled workforce that continue to win the confidence of distinguished partners and build upon our sterling reputation of being "Your Trusted Partner".

The provision of product lifecycle management support services differentiates ST Marine from a builder to a solution provider. Solutions in training, technical management & documentation, maintenance, supply support & reliability and maintainability from the initial design development to disposal for all vessels.

Expanding on these core competencies, ST Marine also provides a suite of sustainable environmental engineering services to meet the increasing global demand for innovative green solutions.

MILESTONES

FORMATION 1968 - 1980

EXPANSION 1981 - 2000

Corporate Development

Incorporated on 7 May 1968 to develop local capabilities in building, upgrading and maintaining naval vessels for the defence of Singapore

Collaborated with reputed designers and shipbuilders to develop in-house design capabilities for advance naval vessels

First yard in Asia to acquire CAD/CAM system

First yard outside Europe to achieve ISO90001 certification for its Quality Management System

Acquired another yard in 1993 to expand into shipbuilding and repair activities for the larger ships

Listed on the Stock Exchange of Singapore

Merged to became a member of ST Engineering in 1997

TRANSFORMATION 2001 - 2017

Acquired facilities in 2000 to expand into shipbuilding and repair activities in the US

Diversified into environmental engineering focusing on solid waste and water & wastewater solutions

Developed the capability to provide lifecycle support services for submarines

First in Singapore to win the ShipPax Award in the RoRo concept category for its first RoRo vessel 'City of Hamburg'

Developed the capability to design and build of LNG fuelled ships

Acquired facilities in 2017 to expand into rig upgrade, repairs and conversion for offshore, oil and gas sectors in the US

Pivotal Projects

The first vessel built was a 25m ferry boat named 'Kuala Batee'

Four missile gunboats and four coastal patrol crafts for the Republic of Singapore Navy (RSN)

Three missile gunboats for the Royal Thai Navy (RTN)

Two liquefied petroleum gas (LPG) tankers for the Kosan Tankers A/S. Denmark

Ten multi-purpose cargo container vessels for a consortium of European owners.

Six passenger ferries for the Port of Singapore Authority

Twelve patrol vessels, six missile corvettes, three mine countermeasure vessels and four landing ship tanks for the RSN

Three cargo container vessels for the Hellenic Lines Ltd

Eleven fast patrol boats for the Singapore Marine Police

Seven high-speed patrol crafts for the Royal Brunei Police Force

One passenger ferry for the Dong Guan City Humen Hong Kong/Macau Passenger Ferry Co.

Two TEU feeder container vessels for the Neptune Orient Lines

Two TEU Roll-on/Roll-off Lift-on/Lift-of (RoRo/LoLo) vessels for a US-based owner

Two feeder container vessels for the Regional Container Lines

Three platform supply vessels for the Tidewater Inc

Two feeder containers for the Shreyas World Navigation Pte Ltd

Five frigates, one submarine support & rescue vessel under the Public-Private-Partnership programme, six specialised marine crafts, eight littoral mission vessels for the RSN

Two RoRo and one Roll-on/Roll-off passenger (Ropax) vessel for Louis Dreyfus Armateurs S.A.S.

Four feeder container vessels for the Transworld Group

One anchor handling tug supply (AHTS) vessel for the Ezra Holding Limited

One dive support vessel for the DOF Subsea Pte Ltd

One seismic survey vessel and six AHTS vessel for the Swire Pacific Offshore Operations Pte Ltd

One modular heavy lift hoverbarge for a Singapore-based owner

One landing platform dock for the RTN

Four patrol vessels for the Royal Navy of Oman

One heavy fire vessel for the Singapore Civil Defence Force

Environmental Engineering

Design-build-operate and the maintenance of an Integrated Waste Management System for the Brunei Economic Development Board

Design-build-own-operate-transfer of a Pneumatic Waste Collection System for the Sino-Singapore Tianjin Eco-City

Design-build-operate and the maintenance of a new water treatment facility (Kranji NEWater Plant) for the Public Utilities Board (PUB)

Design-build-operate of a seawater desalination plant with a consortium partner for the PUB

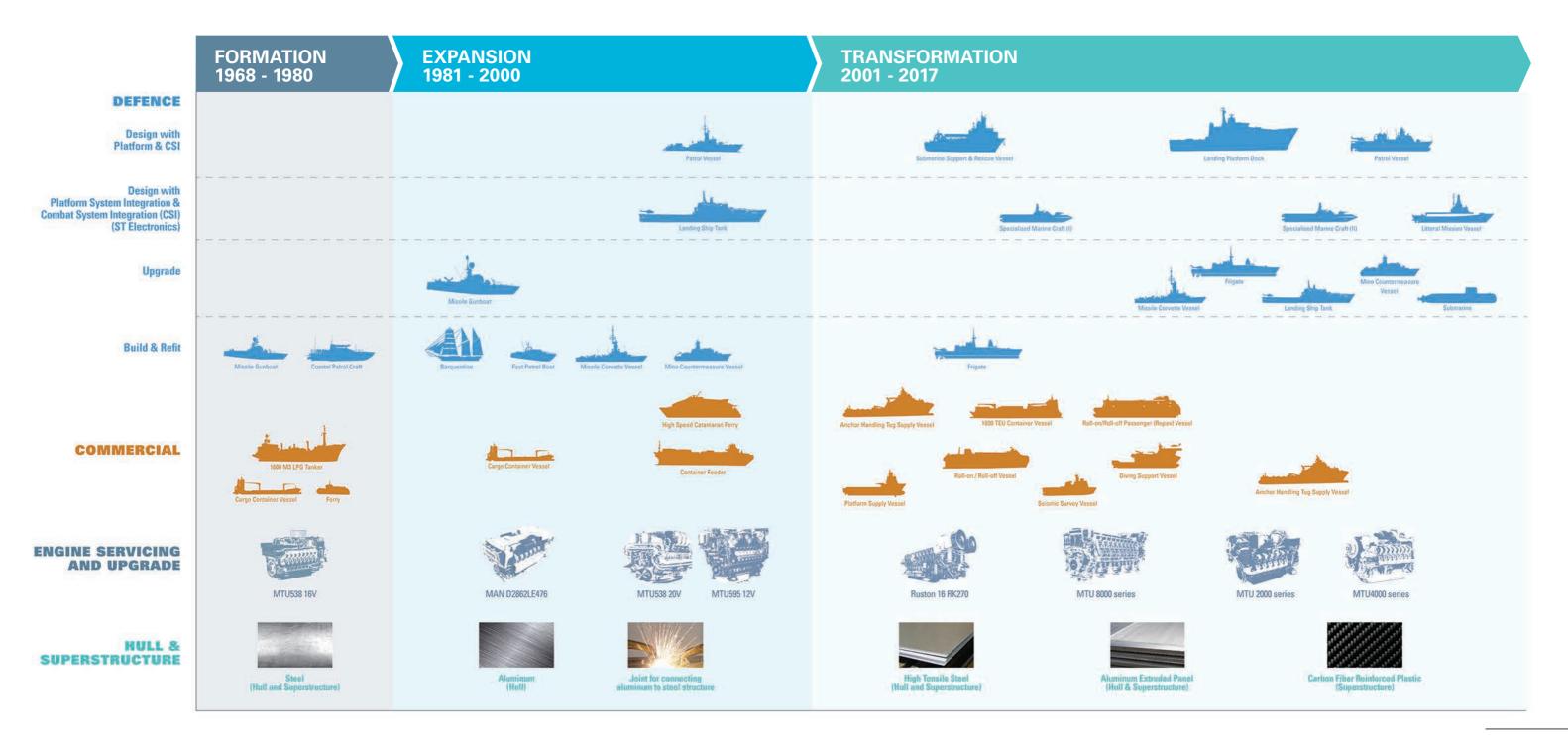
DELIVERING TOTAL SOLUTIONS

Our strengths lie in providing customised turnkey solutions for both the defence and commercial segments.

From the early days of offering building and maintenances services, ST Marine has grown from strength to strength, from building and refitting to designing, signature management, upgrading, platform and combat system integrate and integrated logistics services.

Today, ST Marine is also well equipped to provide a full spectrum of diesel engine services.

We have also removed beyond steel hulls to aluminium structures, Glass Reinforce Plastics (GRP), and more recently Carbon Fibre Reinforced Plastic.



RAISING THE BAR FOR SHIP DESIGN

ST Marine has in-depth capabilities across various engineering disciplines. Our design engineers focus on the finest details on the ships.

We design for safety and efficiency. We incorporate green solution in our design.

System safety is our number one priority. A systematic and structured review process ensures that system safety is adequately considered during the design phase. Technical and operational risks identified during the design process are managed and mitigated to provide our customer with the best-for-project outcome.

HYDRODYNAMICS

STRUCTURAL ANALYSIS

HVAC & NBC PROTECTION

SHOCK, NOISE & VIBRATION ANALYSIS

HULL FITTING & EQUIPMENT

Naval Architecture

Naval Architecture

PROPULSION & SHAFTING

POWER MANAGEMENT

POWER MANAGEMENT SYSTEMS

POWER MANAGEMENT SYSTEMS

SENSORS & WEAPONS INSTALLATION DESIGN

NAV COMMS & SPECIALISED SYSTEMS

SCMMS FUNCTIONAL SHIP DESIGN

POSITION KEEPING TECHNOLOGY

SIGNATURE MANAGEMENT

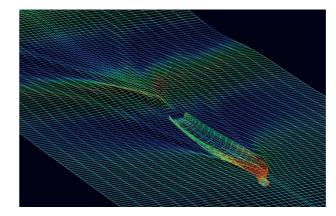
Weapons and Sensors

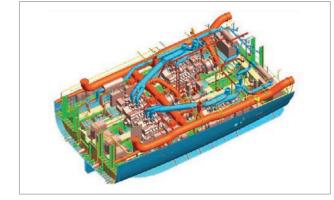
Systems

Support

As a boutique naval ship designer, we apply signature management technologies including radar cross section reduction, infrared signature reduction, underwater acoustic noise reduction or magnetic signature management for our customers.

We use 3D CAD/CAM design tool and software, address challenges associated with complex systems integration and future upgrades, thereby increase operational effectiveness, reduce maintenance costs and enhance the value proposition for our customers.



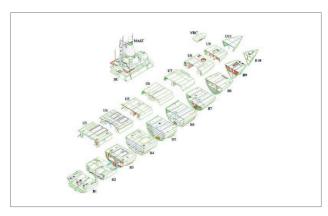


Computational Fluid Dynamic (CFD)

3D Model for Machinery Space







Production Drawing for Hull

UTILISING SMART TECHNOLOGIES IN SHIP CONSTRUCTION

The proliferation of automation and artificial intelligence in manufacturing is a trend keenly monitored and embraced by ST Marine.

Over the years, we have implemented semi and full automated processes in the area of plate-cutting, welding and pipe-bending using engineering information from the Design & Engineering Centre.

As ST Marine moves towards being a shipyard of the future, innovative smart manufacturing technologies such as micro-robotic welding machines. Time consuming processes like grit-blasting and painting can be performed by robotic arms to improved productivity and reduced risks and hazards associated. We invest in sensor technology and data analytics to capture data from the machines to improve their performance and reduce maintenance cost.



REPAIR & CONVERSION SOLUTIONS

In the defence realm, ST Engineering provides services from retrofitting to midlife upgrading in many platforms including submarines.

We serve local and foreign navies. For the commercial segment, we focus on customised conversions with high engineering content and repair on many classes of vessels such as dredgers, offshore, livestock and specialised subsea support vessels requiring specialist services. Our strength is in deep conversion design expertise, personalised customer experiences and short turnaround time.

Workplace safety remains priority. We have a Kaizen journey to develop process solutions to enhance safety and eliminate injuries. One example in driving towards a CultureSAFE environment to encourage early hazards reporting process as part of incident prevention.

With our credentials and longstanding partnership with many clients over the years, ST Engineering has lived up to our motto to 'Delivers on-time, Everytime.'



Ocean Drover

Major repair for fire damaged livestock carrier and completed additional repair request within 7 days.



Ham 310

The first yard in Singapore to carry out lengthening of trailing suction hopper dredger. The dredger was lengthen by 29.2m and thereby increased the hopper capacity by 52%.



Lewek Champion

The modification and upgrading work for pipe layer offshore vessel.



RSS Endurance

HMAS Bathurst

Mid-life upgrade such as combat system management, communications systems and suite.

Mid-life enhancement work including hull remediation

for the Armidale-class patrol boats.



HMAS Success

Converted to double-hull for the Durance Class Multi-Product Replenishment Oiler.



RSS Formidable

Mid-life upgrade such as enhanced self-defence capabilities, communications systems and platform modifications.

Workplace safety remains priority. Embark on the Kaizen journey as continual improvement in processes to enhance safety and eliminate injuries.

- Digitalisation of safety observation to encourage workplace hazards as part of incident prevention
- Deploying of unmanned aerial vehicle (UAV) for routine critical inspection & maintenance
- Adopting of mobile technologies for increased alertness and shorter emergency response time
- Adopting of wearable computing and monitoring technologies for people working in confined space.



CRADLE-TO-GRAVE PRODUCT LIFECYCLE MANAGEMENT

ST Marine's humble beginnings in offering lifecycle support services began with the provision of the Tailored Maintenance Engineering Analysis and System Safety Analysis in the 1980s and 1990s. We now possess the ability in providing a holistic logistics support analysis that is in compliance with the UK Defence Standard 00-600.

STRATEGIC SOURCING
CONTRACTS
1995 CO-OPERATIVE

PERFORMANCE BASED
CONTRACTING
2000 ALLIANCE

1987 TRADITIONAL
PERIOD
CONTRACTS

1987 TRADITIONAL
PERIOD
CONTRACTS

INTEGRATED
WORKFORCE

PERFORMANCE BASED
CONTRACTING
BEYOND 2015
ONE-STOP
SERVICE PROVIDER

We combine innovative practices and uses advance product lifecycle management technologies to design, simulate, organise, and control our industrial processes.

These services extended across the ship's entire lifecycle – configuration management, training of a ship's crew for familiarisation with ship's systems, proposing the maintenance requirements to improve the system's lifespan and lifecycle costs, and minimising or eliminating system failures by identifying issues as early as possible. This forms part of the product lifecycle management process developed to effectively manage a product from cradle-to-grave.



DIGITISATION AND SMARTER SHIPS

Leveraging on the knowledge gained through the many platforms built, ST Marine started developing NERVA, our very own in-house brand of ship management systems (SMS).

Designed to meet the requirements of the International Maritime Organisation and major classification societies, NERVA provides integrated control and monitoring of platform sensors and systems. With a residing design team, NERVA has been successfully deployed on various platforms and retrofit projects.

To make the ship we design smarter, we incorporate the sensemaking module into our NERVA SMS.

Incorporating data and predictive analytics techniques, the sensemaking module performs condition-based monitoring and predictive diagnostics on systems onboard the ship. It comes with a decision support system that provides recommended preventive actions to the operator for better decision making. This gives rise to smarter ships, achieving lean manning, unprecedented levels of ship survivability and high operational effectiveness.



VENTURING BEYOND FAMILIAR WATERS

Beyond shipbuilding, repair and conversion, ST Engineering has, over the years, invested in engine servicing capabilities.

Today, we are a one-stop engine service provider and an authorised service dealer for MTU engines.

Our 3,650m² workshop is a well equipped service centre with:

- A comprehensive range of specialised tools, jigs and fixtures to overhaul wide range of engines
- Enhanced work stations for dismantling and assembling
- Storage facilities for engine parts and components
- Governor and fuel injector test facilities
- Critical component controlled inspection facilities
- Wide range of test-bench facilities equipped to test engines up to 5,200 kW

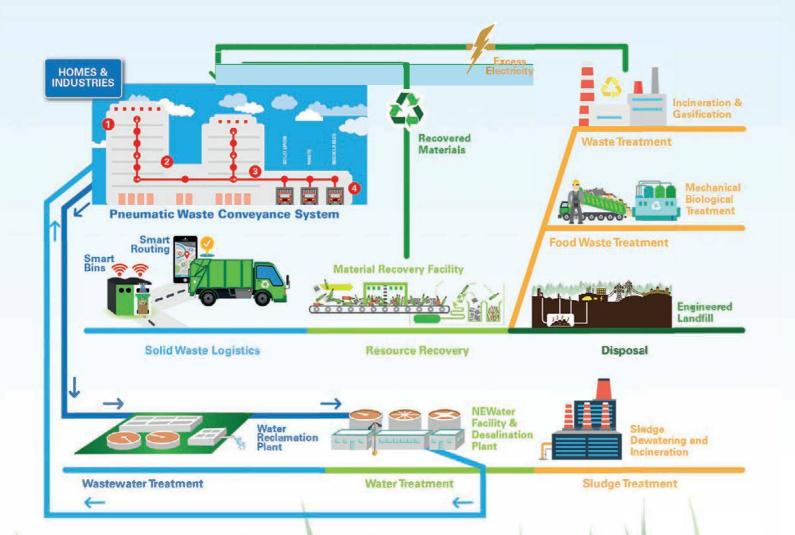


18

DELIVERING SUSTAINABLE ENVIRONMENTAL SOLUTIONS

Expanding on our core competencies in large scale engineering, we also provide a comprehensive suites of environmental engineering solutions in water, wastewater, solid waste and renewable energy.

We undertake engineering, procurement & construction (EPC), design-build-own-operate (DBOO) as well as design-build-operate-transfer (DBOT) projects. Such projects include detailed engineering, contract management, cost control and time scheduling, material sourcing, supervision of construction, commissioning and start-up, documentation, operator training, operations & maintenance (O&M).





GLOBAL CLIENTELE

We serve clients at most major cities around the world and with global agency network.



BUSINESS EXCELLENCE

The strong commitment to workplace quality and safety drives us to continuously seek better and safer work processes for our workers, subcontractors and customers.

Through the Kaizen programme which started in 1997, ST Engineering has been actively promoting a culture of innovation and productivity, encouraging staff to formulate business innovation initiatives and re-engineer business processes through value stream mapping tools.

With safety at the core of operations, risk assessment and job safety analysis have been instilled as a daily work habit and quality work management system being institutionalised as a means to enhance safety policies and procedures.





ST Engineering Marine Ltd.

Main Yard: 7 Benoi Road, Singapore 629882 T: (65) 6861 2244 F: (65) 6861 3028 Tuas Yard: 60 Tuas Road, Singapore 638501 T: (65) 6862 2902/3 F: (65) 6862 5382