



MAZAGON DOCK SHIPBUILDERS LIMITED

(Formerly known as Mazagon Dock Ltd.)

CIN : U35100MH1934GOI002079

(A Government of India Undertaking)

Shipbuilders to the Nation

Dockyard Road, Mazagon,

Mumbai 400 010.

INDIA

**Appointment of Consultant for Carrying out
Feasibility Study, Preliminary Project Report
and Preparation of Master Development Plan
for Development of Greenfield Shipyard at
Nhava Yard, MDL, Raigad.**

VOLUME-III

**Scope of Work
Price Bid (Part-II)**

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1 कार्य का ब्योरा / SCOPE OF WORK:

1.1 The broad Scope of work for consultancy comprises of the following:

Sr, No.	Services	Particulars of works
1.	Feasibility Studies and preparation of Preliminary Project Report	(a) Development of NHY into a Green Field Shipyard for Shipbuilding (SB) and Ship Repair (SR) activities. (b) Development of NHY for SB &SR with appropriate Ship lifts and Transfer system or any other viable facility as the primary Marine Infrastructure. (c) Possibility of the ship lifts Transfer facility doubling up as a Wet basin or other options for wet basin. (d) For the optimal location of the Shiplift in the NHY land use plan for accommodating maximum number of ships at a time. Or any other facility. (e) Segregation possibly for Defence and non-Defence activities.
2.	Optimum Ship-lift & Transfer System with short list of Vendors or any other facility	Optimum shiplift and transfer facility with a short list of Vendors of proven track record and expertise with data sheets, pros and cons and recommendations. Or details of any other facility.
3.	Preparation of Shipyard Layout Plan	Preparation of Shipyard layout depicting the Marine Infrastructure, Civil Infrastructure, Plants/Shops, Office facilities etc.
4.	Preparation of Master Development Plan (MDP)	Prepare a comprehensive MDP for NHY for Shipbuilding & Ship repair end-use, bringing out the development execution phases and the list of statutory clearances required. The MDP shall also include the Capital & Maintenance requirement with provision for Dumping of Spoil at designated dumping ground
5.	Environmental clearance	Comprehensive coverage of all the requirements of the project to obtain Environmental Clearance from the MoEF with list of studies to be conducted along with potential agencies.
6.	Cost Estimate	Preparation of Block Cost Estimate for the Project for the proposed development in the MDP.

Sr, No.	Services	Particulars of works
7.	Cost Benefit Analysis	Prepare a Business Plan & Business Model and Cost Benefit Analysis bringing out the Return on Investment (RoI) on the CAPEX as per the Cost Estimate by evaluating the market conditions both military and non-military.

2 DUTIES OF CONSULTANT:

2.1 Feasibility Study and Preliminary Project Report:

2.1.1 The consultant shall carry out three- four site visit, walk the proposed site, understand the topography & seafront available in the site and hold the technical discussion with MDL officers.

2.1.2 The consultant shall examine feasibility for the requirements stated at Clause 4 of Vol-III and prepare a comprehensive Preliminary Feasibility Study Report(PFS) and Preliminary Project Report(PPR).

2.2 Optimum Shiplift and Transfer System or any other facility

2.2.1 The consultant shall provide the following based on the market study and proposed business plan:

- a) Optimum shiplift and transfer system parameters
- b) The best orientation of the shiplift facility based on the NHY layout and optimum utilization of the space
- c) The feasibility of utilizing the shiplift facility as an impounded wet basin for carrying out the final shaft alignment, basin trials and all activities leading to delivery
- d) A short list of Vendors of proven track record and expertise with data sheets, pros and cons and recommendations Or Details of any other facility.

2.3 Preparation of Shipyard Layout Plan:

2.3.1 The consultant shall develop a Shipyard Layout Plan on the general layout provided to them incorporating the proposal for the fulfilment of the MDL requirements based on optimal utilization of the available FSI.

2.4 Preparation of Master Development Plan (MDP):

2.4.1 The requirement stated at Clause 4 of Vol-III of tender is a broad guideline for the consultant to execute their task. However, the consultant is at liberty to develop the 'MDP' based on industry best practice & state-of-the-art technology.

2.4.2 The consultant is expected to provide the MDP for developing NHY as a Greenfield Shipyard. Therefore, it is expected that the MDP will aim for optimal utilization of the available land space with carefully calibrated workflow & work centres designed and positioned in the layout for optional workflow and machinery/equipment that would enhance productivity.

2.4.3 The consultant is also expected that the design of workshops, plant & machinery, building shall meet extant norms pertaining to habitability, ergonomics & green initiatives.

2.4.4 The consultant shall provide detailed List of machinery.

2.4.5 The consultant shall provide with Identification of requirements for Dredging and dumping of soil.

2.5 Statutory and Environmental clearances, Road Map for Approvals:

2.5.1 The Consultant shall provide a complete road map for obtaining statutory approvals, permissions that are required from various Govt agencies for MDL

to initiate the process for executing the MDP. The list shall cover the following aspects:

- (i) Document detailing the procedure to be followed and the agencies to be approached for obtaining each clearance preferably by a flow chart, indicating interdependencies of approvals.
- (ii) List of Permissions that need to be sought.
- (iii) Requirements of CRZ, Environment Impact and Sustainability study
- (iv) Documents/drawings that are to be submitted while seeking such permissions.
- (v) Formats for application for permissions/ certificates.
- (vi) Exemptions if any applicable MDL being a PSU under the MoD/GoI.
- (vii) Applicable fees for the permissions/approvals.
- (viii) Agencies who assist in obtaining clearances
- (ix) Approximate time frames

2.6 Cost Estimate for the Project:

2.6.1 The Consultant shall prepare a Block Cost Estimate (BCE) for the project based on the Master Development Plan. The Cost Estimate shall consist of the following cost elements:

- (i) Shiplift and transfer system or any other facility
- (ii) Berthing facility if shiplift not convertible as wet basin
- (iii) Civil works for Workshops, stores and Buildings
- (iv) Machinery inside Workshops
- (v) Environmental building services
- (vi) Utility services in general and for each Building/Workshop
- (vii) Approvals from statutory bodies
- (viii) Environmental clearances
- (ix) Dredging and dumping of spoil
- (x) Any other element not covered above.

2.7 Preparation of business plan and Cost Benefit Analysis:

2.7.1 The consultant shall conduct market study and prepare a business plan and business model.

2.7.2 Cost Benefit Analysis bringing out the Return on Investment (RoI) of the CAPEX as per the Cost Estimate by evaluating the market conditions for both military and non-military business prospects and prevailing competition among Shipyards. The cost benefit analysis also to include the pros and cons of shiplift system against any other facility.

3 INPUTS TO THE CONSULTANT:

MDL shall furnish the required inputs to the consultant for the assignment. The following inputs shall be made available by the Shipyard as required to the consultant to carry out the assignment:

- (a) A Layout of Nhava Yard
- (b) Any other information on need to know basis.

4 MDL REQUIREMENTS: The broad requirement definitions that are to be considered while developing the shipyard layout and MDP are as follows:

4.1 Marine Infrastructure:

4.1.1 Installed Capacity

- a) Installed capacity of the Shipbuilding facility shall be suitable for vessels based on the market study.
- b) Ship building facility shall be suitable for construction of maximum no. vessels(vessel parameters based on market study)in parallel which

include production, sub-assembly, assembly, block construction, assembly and block level pre-outfitting, erection, outfitting, fitment of Sonar Dome and propeller, launching etc

4.1.2 **Shiplift/Any other facility**

- a) Optimum Shiplift facility for the vessel of parameters derived from market study shall be installed at NHY with suitable orientation Or any other facility

4.1.3 **Transfer and Hauling facility**

- a) A suitable transfer and hauling facility shall be installed suitable for handling the vessels that are intended to construct in NHY.

4.1.4 **Berthing facility**

- a) Refurbishing of existing jetty considering the following aspects:
- i. Fenders, bollards, wharf cranes
 - ii. Facilities for receiving items in Jetty
 - iii. Mooring arrangements
 - iv. Hauling arrangements
 - v. Shifting arrangements
- b) Wet basin:
Impounded Wet basin for carrying out post launch activities like final shaft alignment, basin trials, Delivery etc. The feasibility of utilising the shiplift facility with additional features as wet basin is to be given the first preference prior considering a standalone wet basin.

4.2 **Workshops**

- a) The Greenfield shipyard that is intended to be developed at the Nhava Yard shall have shops with requisite machinery meeting the following basic requirements:
- i. Production facility with CNC cutting (PARTS) with EoT Crane
 - ii. Sub-Assembly & Assembly Area (UNITS) with EoT Crane
 - iii. Fabrication of grand Assembly blocks and Block-Level & Outfitting facility(RINGS) with EoT Crane(Module shop)
 - iv. Pipe shop with EoT Crane
 - v. Machine shop with EoT Crane
 - vi. Sheet Metal shop with EoT Crane
 - vii. Block/Ring Erection Area (Hard stand)
 - viii. Blasting and Painting chambers for handling blocks/rings
 - ix. Joiner shop

4.3 **Stores**

- a) The following store spaces are envisaged inside the shipyard:
- i. Ready use stores
 - ii. Plates stores
 - iii. Equipment stores-Engg/Hull/Electrical and electronics
 - iv. Bonded stores

4.4 **Support Services**

- a) The following minimum support services are envisaged
- i. Oxygen Plant
 - ii. Service lines - O₂, Acetylene, Compressed air, Freshwater

- iii. Gas Cylinder storage as per CCE guidelines space for O₂, Ar, N₂, LPG for canteen,
- iv. BMCG for industrial welding and dissolved acetylene (DA)
- v. Gas distribution manifolds
- vi. Pipe line and equipment for gas distribution manifold
- vii. Tank for Liquid Oxygen

4.5 **Material handling**

- a) SPMT for transportation of Rings from Assembly shop/Module shop to the erection site.
- b) Lifting and Transportation facility
 - i. Crawler mounted/tyre mounted/LL

4.6 **Mobile shed**

- a) Provision for mobile shed of suitable size

4.7 **Steel scrap Yard**

- a) Steel scrap yard with weigh Bridge and EOT Crane

4.8 **Receiving units/blocks from other MDL/other shipyards**

- a) Provision with suitable crainage for receiving units/blocks from MDL/Other shipyards

4.9 **Utilization of MDL Gavan Land at Ulwe**

- a) MDL possesses 5.95acres of Gavan land at Ulwe on the way to Nhava yard. The utilization plan for Gavan land as stores or for any other activity to be studied.

4.10 **Civil Infrastructure**

- i. Building for office spaces
- ii. Building for operatives
- iii. Canteen
- iv. Officers' Mess
- v. Security Outposts
- vi. Dispensary
- vii. Electrical power supply & distribution
- viii. Men and material flow to Nhava Yard
- ix. Rationalize the entry points (gates) and access for entry into and the movement within the yard
- x. Sanitary facilities
- xi. Rainwater Harvesting
- xii. Solar Panels for power generation
- xiii. Fresh Water Supply
- xiv. Waste/waste water management
- xv. Habitability of office spaces (HVAC requirements).
- xvi. Fire Safety
- xvii. Any other essential services required for the Yard

4.11 **Statutory Requirements and studies for Environmental Clearances:**

The consultant shall follow the relevant extant rules and regulations for the tasks defined. The statutory requirements shall *interalia* consider the following as applicable:

4.11.1 Environmental Clearance

- a) Statutory bodies Involved:
 - i. Maharashtra Pollution Control Board(MPCB)
 - ii. Maharashtra Coastal Zone Management Authority (MCZMA)

iii. MoEF

b) The studies *interalia* for Environmental clearances:

- i. EIA- Environmental Impact Assessment
- ii. HTL/LTL
- iii. Bathymetry
- iv. SLIA Shore Line Impact Assessment
- v. Seismic Profiling of sub-bottom
- vi. Geo-Technical Survey
- vii. Geo-physical Survey
- viii. Bio diversity studies
- ix. Ship Tranquillity studies
- x. Dredging and its impact
- xi. Coastal Zone Management Plan(CZMP)
- xii. Housing Radioactive Isotope
- xiii. Any other Studies

c) Clearances Issued:

- i. Combined CRZ and EC from the MoEF
- ii. Any other

4.11.2 Other Rules and Regulations

- a) Factory License
- b) Directorate of Industrial Safety and Health (DISH)
- c) MbPT
- d) Dept of Atomic Energy for housing Radioactive Isotope
- e) Industrial Safety Rules
- f) Any other Rules

4.12 **Dredging and Dumping of spoil**

- (i) Capital & Maintenance requirement up to main entry channel of JNPT extent in plan and in depth
- (ii) The provision for Dumping of Spoil at designated dumping ground is also to be studied.

5 **निविदा हेतु चित्रकारी की सूची / LIST OF TENDER DRAWINGS**

Sr. No	Drawing number	Drawing Detail
1.	Nhava Yard Layout	NHAVA YARD LAYOUT DRG

Enclosure-1

PRICE BID (PART-II)
(To be submitted online)

Sub: Appointment of Consultant for Carrying out Feasibility Study, Preliminary Project Report and Preparation of Master Development Plan for Development of Greenfield Shipyard at Nhava Yard, MDL, Raigad.

Ref: MDL Tender No. 180000045

INSTRUCTION TO THE BIDDER:

- The Goods & Service Tax **IS NOT INCLUDED** in the rates indicated below for this section. Bidder is required to quote Goods & Service Tax **SEPERATELY** in Percentage which will be added to the rate quoted for this section during placement of Order.
- Bidder to note Clause No. 1 (Completion Period), Clause No 2 (Security Deposit), Clause No 4 (Terms of Payment) & Clause No 5 (Prices and Taxes) of Volume II before quoting.
- All entry/ exit permissions and passes will be issued in office of MAZAGON DOCK SHIPBUILDERS LIMITED at Dockyard Road, Mumbai. The bidder to note the same before quoting.

Sr. No.	Description	Unit	Qty	Rate (₹)	Amount (₹)
1	Professional fees includes the followings :- i. Preliminary Feasibility Study (PFS) and Preliminary Project Report(PPR) ii. Optimum Shiplift and transfer system data or any other facility iii. Shipyard Layout Plan (SLP) for Shipbuilding and Ship repair iv. Master Development Plan with Identification of requirements for Dredging and dumping of soil v. Cost Estimate vi. Statutory and Environmental clearances vii. Business Plan and Cost Benefit Analysis	Activity Unit	1		
	TOTAL BASE PRICE (LUMP SUM PROFESSIONAL FEE)				
	Goods & Service Tax (in Percentage)				