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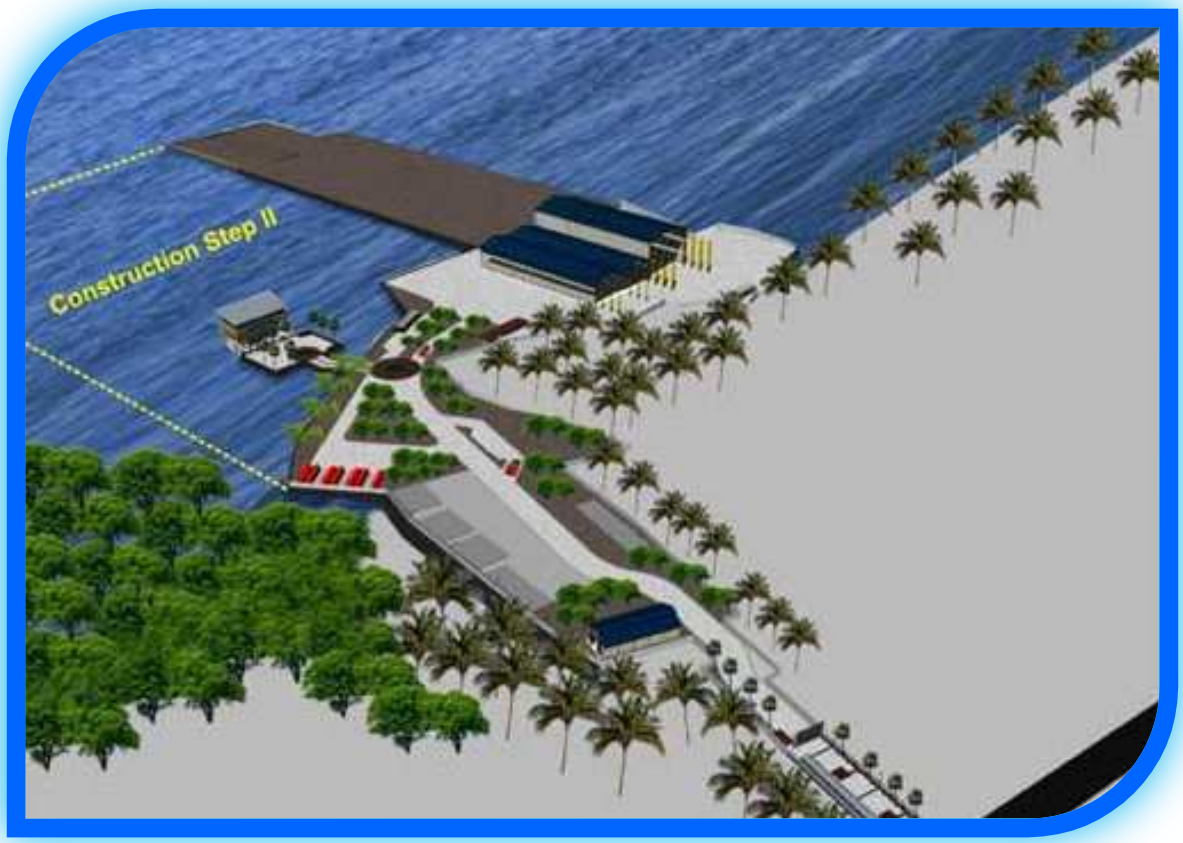
JETTY CONSTRUCTION




**PT. LINTECH DUTA PRATAMA** is pleased to provide concept design, equipment supply up to construction of Jetty Structure project. Jetty Structure is a structure that stretch from the onshore to the water / sea at which vessels berth either at the head or alongside. Jetty structure is generally used as access and loading and/or offloading that provide a cost effective method for transporting large quantities of goods and raw materials. Jetty is one of the facilities provided within port designed area. In general, jetty structure consists of following parts :

- **Jetty Head and Jetty**

  The end and main structure of the jetty structure that equipped or designed for vessels berthing and mooring.

- **Access Bridge**

  The part of jetty that connect the onshore and main jetty structure. Access bridge is not equipped or designed for vessels berthing and mooring.

- **Dolphins**

  Marine structures that extends above the water level and is not connected to shore. Dolphins are commonly used in combination with piers or wharves to reduce the size of piers. Dolphins are generally divided into two types, namely breasting dolphins and mooring dolphins with several functions as followings

- Breasting dolphins
  a. Assist in berthing vessel by taking up some berthing loads portion
  b. Protect the pier structure from possible impact of vessel
  c. Could serve as mooring points as well to restrict longitudinal movement of the berthing vessel

- Mooring Dolphins
  It is used for mooring only and for securing the vessels by using ropes. They are also commonly used near pier structures to control the transverse movement of the berthing vessels. Mooring dolphins are single structures designed to take care of the tension on mooring line. In most cases there are provided to take care of the longitudinal load due to slight surge of the vessel while moored.

- **Fender System**

  A bumper used to absorb the kinetic energy of vessel berthing against a jetty. Fender system is used to prevent damage to both vessels and berthing structure. Fenders have high energy absorption and low reaction force. Fenders are typically manufactured out of rubber, foam elastomer or plastic. Rubber fenders are either extruded or made in a mold. The type of fender that is most suitable for an application depends on many variables, including dimensions and displacement of the vessel, maximum allowable stand-off, berthing structure, tidal variations and other berth-specific conditions. The size of the fender unit is based on the berthing energy of the vessel which is related to the square of the berthing velocity

- **Bollards**

  A sturdy, short and vertical post used to hold the vessel line while berthing. It is usually constructed of cast steel. Special care need to be considered before installing the anchor bolts of bollards to avoid clash with reinforcement, wiring, pipe sleeve and etc.

Considering the general process above, **PT. LINTECH DUTA PRATAMA** herewith stated our capability in designing, manufacture, supply and construction of the **Jetty Structure** to meet the customer requirements or custom design. As a custom design, design that specially made to the customer requirements of operational, maintenance, space and safety restrictions.

We are experienced EPFC company execute the Jetty Structure projects with **Good Quality**, **Competitive Price** and **Excellent Design**. We serve solutions from initial concept design through to construction and manage the project within schedule and allocated budget.

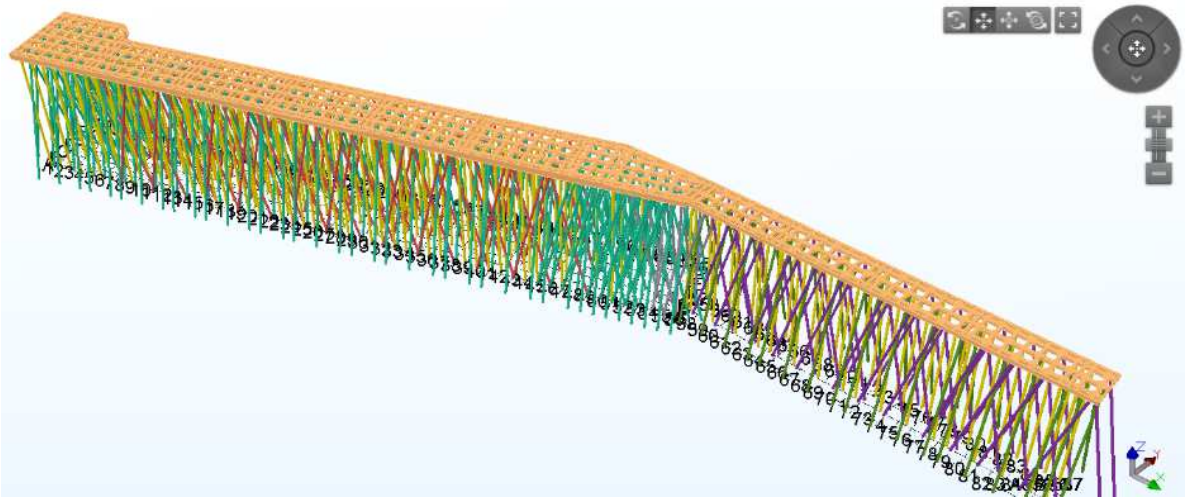
JETTY CONSTRUCTION

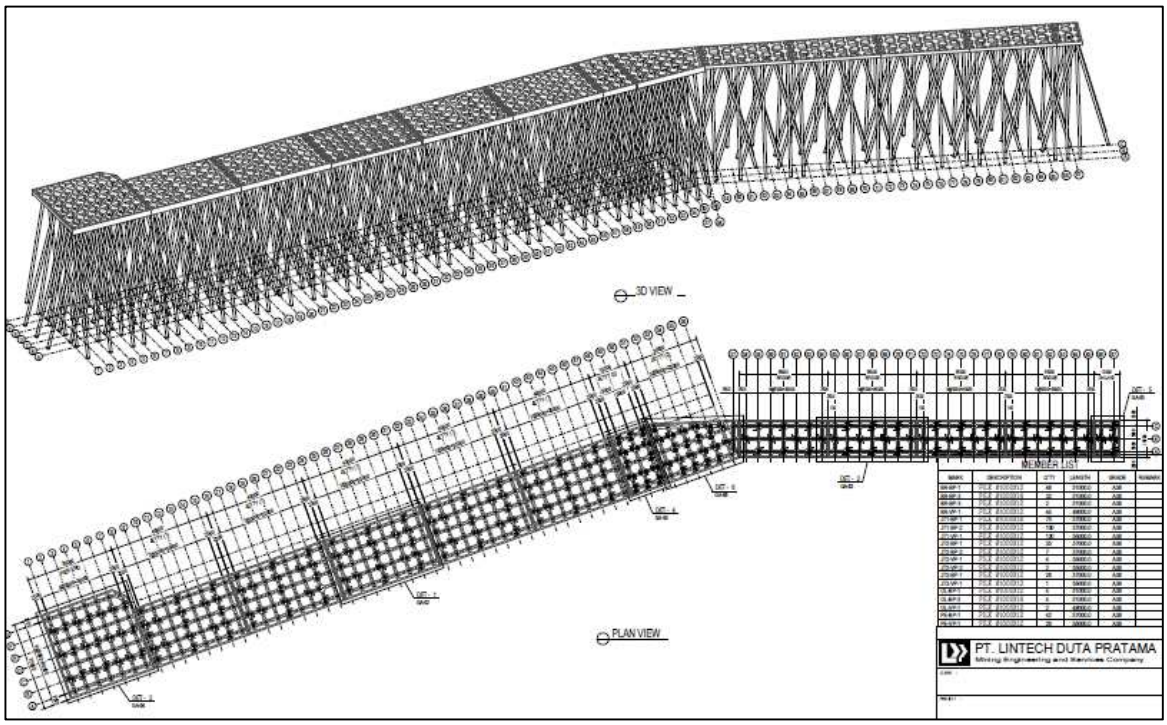
## Experiences

### Lintech Seaside Facility - Jetty

- PT. LINTECH DUTA PRATAMA
- Location : Paciran, Lamongan - Indonesia
- Length : 90 m, Width 6 & 12 m, Draft 6 m
- Capacity : 6 Ton/$m^2$ and 60 Ton/$m^2$ (Skidway)
- Duration : 5 months

JETTY CONSTRUCTION






## Proposal Design – Jetty Structure

- Proposal project: Pomalaa HPAL
- Location : Pomala, Sulawesi – Indonesia
- Jetty : Length 250 m, Width 25 & 35 m, Draft 20 m
  Access Bridge : 180 m, Width 15 m, Draft 16 m
- Capacity : 2 and 4 Ton/$m^2$
- Duration : 7 months

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JETTY CONSTRUCTION

## Scope of Supply

- Design and Detailed Engineering
- Procurement and Fabrication
- Inspection
- Construction
- Maintenance (Optional)

## Surface Preparation and Coating

- Sand Blasting SA 2.5
- Coating thickness
  - Urethane : > 2.5 mm
- Standard Color
  - Pipe Piling : as request

## Main Parts & Components Supply

- Steel Piles
- Fender Systems
- Bollards
- Lifting apparatus (if any)

## Technical Specification

Jetty structure is designed to meet the customer specification. In general, the design should take into account following considerations:

- General sitting, including
  - Road and rail access, storage and material handling, transportation
  - Material transport, loading and off-loadings
  - Jetty accessories, etc
- Civil and structure design requirements
  - Size of vessel, material type to be handled
  - Geographical condition such as Wind, Earthquake, Rain, Tidal or Current Effects, Wave and Soil Settlement
  - Berthing and mooring forces
  - Corrosion protection of steel piles
- Impact protection
- Vessel anchorage or mooring

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JETTY CONSTRUCTION

## Workshops

PT. Lintech Duta Pratama has two (2) fabrication workshops located at Karang Pilang, Surabaya and Paciran, Lamongan

- **KarangPilang– Surabaya**

- Area : +/- 2 Ha
- Activity : Warehouse, Fabrication, Surface Preparation and Painting
- Capacity : 200-400 Ton/Month
- Main Office

- **Paciran - Lamongan**

- Total Area :65,660 $m^2$
- Workshop : 6,982 $m^2$
- Facility : Jetty (3000 Ton Capacity, 6m Draft), Yard Facility, Open Storage Area
- Activity : Warehouse, Fabrication, Surface Preparation and Painting, Ship Repair and Maintenance
- Capacity : 800 Ton/Month

# PT. LINTECH DUTA PRATAMA

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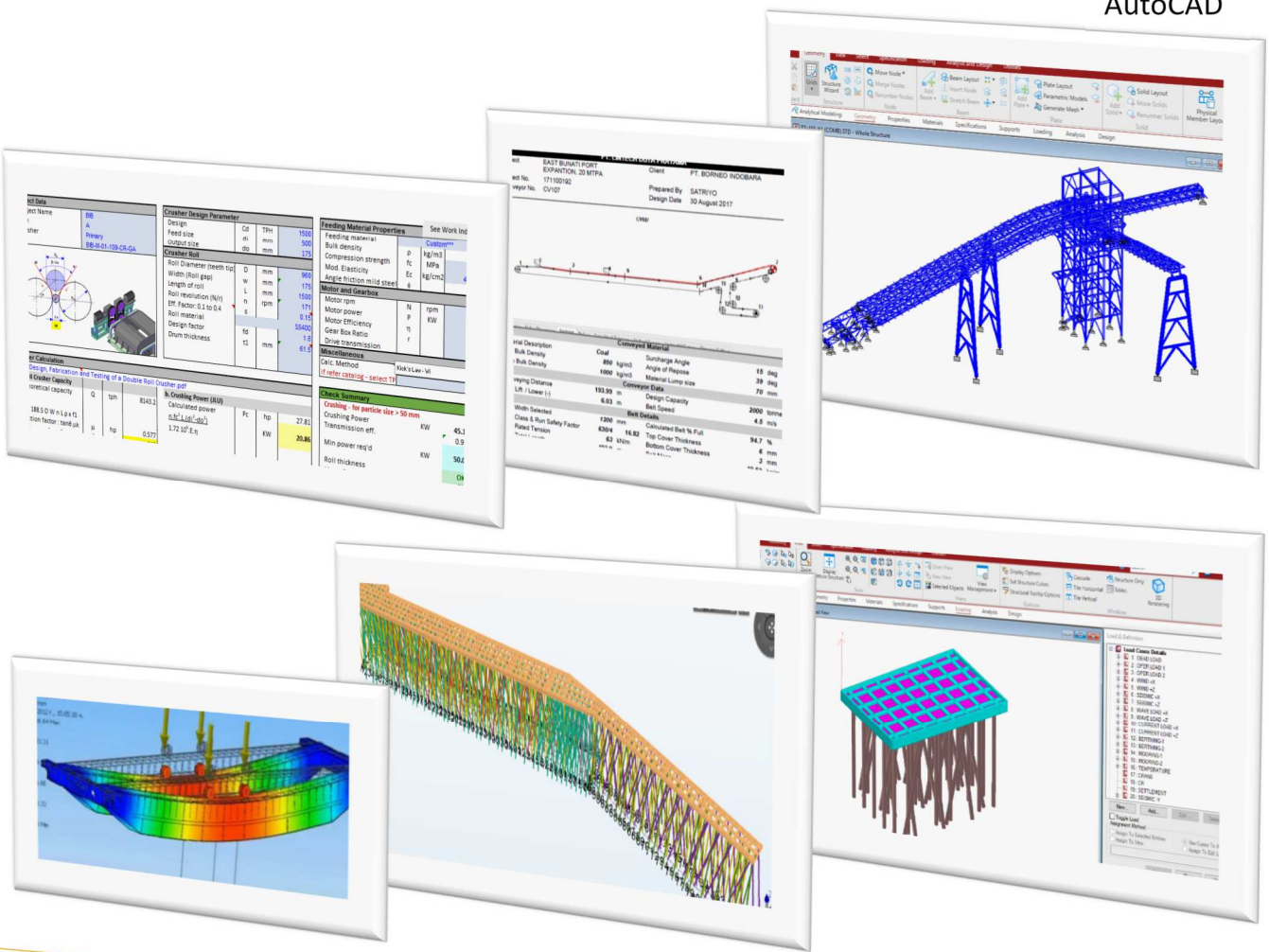
## Engineering Design

Besides skills and experiences, Our engineers are completed with licensed technical softwares to growth and shape engineering technology and increase the design capability for optimizing design

Licensed Technical Softwares :

- Helix Conveyor
- STAAD.Pro
- E-Tank (to be updated to AMETANK latest edition)
- Tekla Structural Designer
- Autodesk AutoCAD
- Autodesk Inventor
- Developed Spreadsheets



# Any inquiry, Please don’t hesitate to contact us

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# Thank You