

# Transportation and Heavy Lifting of Prefabricated Modules

14 January 2021

Tiong Woon Project & Contracting (TWPC) team was commissioned to perform heavy lifting services on three prefabricated modules at an undisclosed location.

## Transportation of Module 1 and 2

Weighing a total of 120 Tons, measuring 18 metres (H) by 6m (W) for Module 1 and 60 Tons, measuring 12 metres (H) by 6m (W) for Module 2, both prefabricated modules were transported using our 1200 Horsepower Tugboat and 250 Feet Barge to the unloading jetty.

Before the transportation, our Engineering team completed thorough stability calculations of the Barge load, including sea fastening recommendations by Marine Surveyors during marine transportation. Loadout ballasting calculations for the Starboard side of the Barge were also factored in, which included modifications to accommodate the modules' transportation.

The modules were loaded onto the ten axles Cometto Self Propelled Modular Transporter (SPMTs) to accommodate the loadout upon arrival at the Jetty and the land transportation to the installation site.



## Tandem lifting of Module 1

Upon arrival at the lifting site, our two Mobiles Cranes commenced on the tandem heavy lifting.



Our Demag AC500-2 (500 Tons) and AC700 (700 Tons) Mobile Cranes were deployed and configured in HASSL (Main Boom Side Superlift) for the tandem lifting of Modules for the heavy lifting operation.

The AC500-2 used a boom length of 47.2m, carrying a load of 83 Tons, while the AC700 used a boom length of 55.5m, carrying a load of 63 Tons during the tandem lift operation. The modules were carefully lifted off the SPMT and installed at the designated location.

## Heavy lifting of Module 2

After completing the tandem lift of Module 1, our Demag AC700 (700 Tons) Mobile Crane proceeded to do a heavy lift of Module 2. Configured in HASSL (Main Boom with Side Superlift), the AC700 used a boom length of 55.5m to lift the load onto the designated location.



### Transportation of Module 3

Weighing 60 Tons and measuring 30 metres long, module 3 was transported to the same unloading jetty using our 1200 Horsepower Tugboat and 140 Foot Barge.



Our Demag AC500-2 (500 Tons) Mobile Crane was at the Jetty to unload the module off the Barge and onto the ten-axles Goldhofer Self-Propelled Modular Transporter (SPMT) for the land transportation. Due to the module's length, few lamp posts en-route and certain constraints within the lifting site had to be removed temporarily to facilitate the land transportation to the lifting area.

## Tandem Lifting of Module 3



For the tandem lifting of Module 3, we deployed our Demag AC500-2 (500 Tons) and Grove GMK6300L (300 Tons).

The AC500-2 used a boom length of 47.2m, carrying a load of 60 Tons, while the GMK6300L used a boom length of 36.8m, carrying a load of 30 Tons during the tandem lift operation. The module was carefully lifted off the SPMT and installed at the designated location.



### **Meticulous Planning and Teamwork**

Every lifting operation has its risk, especially one that involves tandem lifting. Time was also tight as all 3 modules had to be installed within a week to minimise operational disruption to our customer.

With careful planning on the usage of Lifting equipment, delivery sequences, and surveying of the transportation route by the engineering team, we were able to ensure that the coordination and communication between the crane operators and the lifting crew were flawless. We managed to complete the task safely and on time!