Construction Review – March 23rd, 2015

'GWRL offers end-to-end solutions to infrastructure industry'

Garware Wall Ropes Ltd is an ISO 9001:2008 certified company established in 1976 and is a leading technical textile company specializing in providing customized solutions to the cordage and infrastructure industry globally.

As a global player, the company is known for its innovation in the field of fisheries, aquaculture, shipping, sports, agriculture, coated fabrics and geosynthetics. The company products are manufactured in state-of-the-art facilities at Pune and Wai (both in Maharashtra) and marketed in more than 75 countries.

GWRL is a well-known player for its contribution to the infrastructure industry (roads, sea coasts, bridges, high terrain regions susceptible to rock falls, etc) by way of its geosynthetic products. These products are manufactured on the principle of the cordage industry, but its applications require a huge amount of scientific knowhow.

Which marquee projects has the company completed in the construction and infrastructure sector?

GWRL undertakes specialized projects within the infrastructure space, in domains like rock fall mitigation, coastal protection, river training, etc.

Some of the major projects completed by GWRL are:

Rock fall hazard protection in the ghat section of the Mumbai-Pune Expressway in Maharashtra, executed for the Maharashtra State Road Development Corporation.

Coastal protection using geo-textile tubes in Uppada, Andhra Pradesh, executed for the Irrigation Department of Andhra Pradesh.

Secured Landfill (SLF) for Hindustan Zinc Ltd in Vishakhapatnam, Andhra Pradesh.

Coastal protection using geo-containers, Hazira, executed for the Adani Group.

Garware is better known for technical textiles and nylon rope products. When did it foray into the infrastructure segment?

GWRL's technical textiles and fabricated rope products were tried out successfully in a couple of infrastructure projects in the 1990s. This was at a time when the infrastructure industry in India was being modernized and large projects were on the anvil of the Indian government.

GWRL's foray into the infrastructure industry happened in 1996, with the setting up of the GEO Division, to focus on opportunities in this industry.

What challenges did you confront in the closure and capping of industrial sludge pond at Vishakhapatnam?

The capping of the sludge pond presented a lot of challenges, primarily the low bearing capacity of the sludge, which made it almost impossible for any vehicle movement on the sludge. Without movement of machineries, it was impossible to move forward with the capping.

***Tiru Kulkarni**, Vice President, GEO Division, Garware Wall Ropes Ltd (GWRL), elaborates on the outstanding projects the company has executed and the immense difficulties it had to surmount for their successful completion. In this interview with **Dilip Phansalkar**. Excerpts:*

This problem was sorted out by using a special technique for pond filling called 'finger fill' technique, which involved the use of geo-textile for improving the bearing capacity of the sludge and allowing construction machinery to ply on it, in a phased manner.

What technicalities were involved in obtaining the detailed geotechnical investigations?

Detailed geotechnical investigation is the foundation of a good design exercise for any project. The sub-surface strata vary constantly and a well conducted geotechnical investigation allows an efficient design and execution. The technicality involved is in deciding what locations to conduct the investigation in order to get a complete picture of the sub-surface composition of the site in question.

How long did the industrial sludge pond project take to complete – from start to finish?

The industrial sludge pond took 12 months from start to finish.

How would you define the term 'groynes'?

'Groynes' are intervention structures that are positioned perpendicular to the direction of water flow in a river with the objective of dual objective of directing the river current away from the bank to be protected, and causing silt to settle along the river bank. Groynes are primarily used for river training applications.

Since the project was near the sea coast, what hurdles did the company surmount?

The Uppada project was very close to the sea shore and presented a number of challenges. The main hurdle was the tidal variation at the project location. The tidal variation was around 3m. Since the variation occurred twice every day with different timings, this meant that the construction schedule had to be dove-tailed with the falling tide on a daily basis.

Hence the entire construction was achieved by working in two shifts every day, with different sets of timings for each shift, depending upon the tide. This entailed very accurate planning and co-ordination of all resources.

What technology was used to bring under control the erosion on the slopes of Jarosite Pond in Vizag?

The technology that was used on the slopes of the Jarosite Pond in Vizag was through an indigenously developed erosion control technology for side slopes. The technology consists of spreading a bio-degradable mat on the slopes and turfing the same.

The bio-degradable mat provides the initial support system for generation of vegetation on the slope, and, with time, degrades and acts as compost for the developed vegetation. The developed vegetation sustains the slope from erosion control. This is a 'green' technology that leaves a minimal carbon footprint while solving erosion problems.