

Sustainable timber mats

In our October issue on outrigger mats we touched on the various woods used to create the large timber mats. These are typically used under big crawler cranes or as platforms when working on softer ground, in addition, of course, to its traditional use as cribbing under outrigger pads.

Most of the key suppliers of specially made timber mats are based in Holland where due to the preponderance of soft ground conditions mats are used far more widely than in most other countries. One company we came across is a little unusual in that while it has a distribution operation in Holland it is based in Guyana, South America. It also grabbed our attention in that it has an interesting story to tell and hundreds of photos to illustrate it. Here therefore is an insight into what goes into producing a modern timber mat.

Guyana is perhaps unusual among nations growing tropical timber in that it is working closely with the Norwegian government which is supporting Guyana in its plans to limit forest-based greenhouse gas emissions, while protecting its rainforest as an asset for the world. Norway has commissioned the Rain Forest Alliance as an independent entity to review and report on Guyana's annual progress under the Guyana-Norway forest protection agreement. The Alliance will also audit Guyana's 2009 and 2010 progress reports.

The agreement has obliged the Guyana Forestry Commission to ensure that its own regulations are

strictly enforced. These require every concession to complete and maintain a full standing timber inventory and operate a selective harvest plan that ensures on-going sustainability. No lumber or logs can be transported out of a concession or off of private land without prior approval from the local GFC station

Timbers are collected by and transferred for final processing



officer for which tag and stump inspections are the common control mechanisms.

Guyana Timber Products (GTP) was founded in Georgetown in 2002 by the late William Jenezon, a former investment banker and private equity manager, to work within the

environmental sustainability framework being developed in the country at that time. While it is a Guyana-based company and a leading exporter of added value timber products from the country, it is controlled by Dutch shareholders. Getting started was no easy feat and the current processing plant,

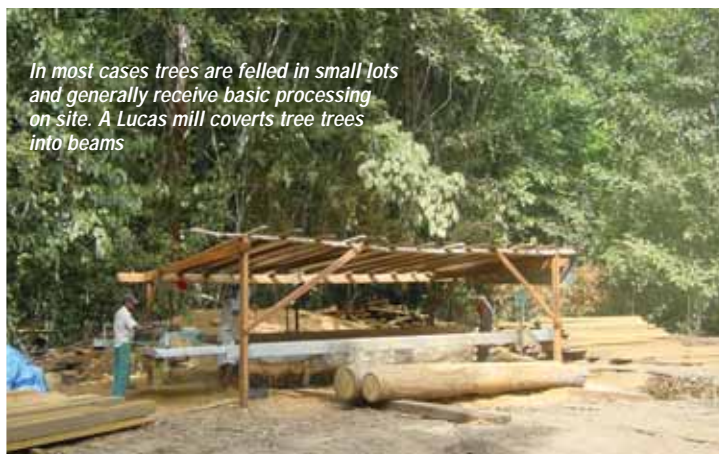
produced the best possible conversion of logs into products. High quality engineered timber mats for pipeline and crane applications emerged as the best combination. The fact that the owners were based in the Netherlands - the centre of this industry - might also have helped of course.

The company works closely with a number of local partners and small local co-operatives who are responsible for the work carried out in the forest itself. This not only includes felling the trees but some of the initial preparation work on the logs, including their conversion from trunks to fully formed beams. GTP helps them invest in equipment such as saws, milling machines and tractors all designed to harvest the trees and prepare the timber that is suitable for use in mat production.

Once sufficient quantities of timber have been cut and trimmed at a given location, GTP sends out its own trucks to collect and bring it to the processing plant. Before the processing starts the timber is hand graded then each beam is individually drilled before moving to a large press in batches of five. Heavy steel rods are pressed into the drilled holes to create the particular mat sizes, the rod ends are then threaded and nuts and washers fitted and tightened.



Trees are harvested in a sustainable manner and tagged before processing



In most cases trees are felled in small lots and generally receive basic processing on site. A Lucas mill converts tree trunks into beams



Containers for Europe are fully loaded to reduce freight costs



The timbers are machined, drilled and assembled in Georgetown



A batch of Excellents ready to ship from the plant



A number of cranes are used in the operations and are rarely state of the art

A European sales base

In order to commercialise its products in Europe the company set up Guyana Timber Products Europe as a sales and distribution organisation with an office and inventory of crane and pipeline mats in Ootmarsum, due east of Apeldoorn in The Netherlands, close to the German border. The location was chosen in order to serve as much of the European market as possible with fast road deliveries etc... while being within easy reach of a major port for import and exporting. The Dutch location allows for rapid delivery within Europe while minimising shipping costs by ensuring that all containers are loaded to full capacity. The company also ships directly from its plant in Georgetown, Guyana, particularly within the Americas and Pacific region.

The hardwood mats

The majority of the mats that GTP sells are made by bolting large beams together in a composite-type structure in order to produce specific characteristics, while minimising wastage. They are made of boards/ beams that are processed directly from hardwood logs and are assembled with large steel bolts and thick washers, with all edges machine chamfered and ends protected creating a strong and durable hardwood mat.

Standard tropical wood crane mats from Guyana come in three versions:

Standard with Mora beams on the outside and a non-specified hardwood timber on the inside.

Premium which is made entirely from the tough close grained hard wearing Mora wood and

Excellent which uses Mora wood on the outside and Wamara on the inside.

The standard stock mats come in sizes from five metres long to just under 11.80 metres with thicknesses of 100 to 300mm. Widths are of course made up to suit the job. The various sizes and mix of tropical hardwood species allow the mats to be tailored to suit a variety of different uses such as:

- Temporary platforms for large cranes for heavy lifting and rigging such as windmills
- Temporary roads for equipment
- Temporary bridges and working floors
- Protection for decks of wharfs, ship sides and dredging barges
- Protection for existing work floors to avoid damage due to impact pressure
- As travel roads for cranes and excavators on pipeline projects

Timber mats are sometimes used under steel to absorb tension.



Mats used to create a protectionary platform

Advantages of timber mats

While timber mats are widely and almost exclusively used for crawler cranes, their use to create outrigger mats for large cranes has all but stopped in some markets, in favour of steel fabricated mats. Yet GPT and other timber mat suppliers claim that there are a number of benefits in using wood, including:

- CO2 neutral
- Weight compared to steel
- Better physical properties with bending compared to steel timber is elastic without being unstable.
- Attractive price levels
- Long lengths possible
- Easy to use and transport
- Timber absorbs tension rather than transporting tension onto the soil.

