



## Automated Handling & Storage

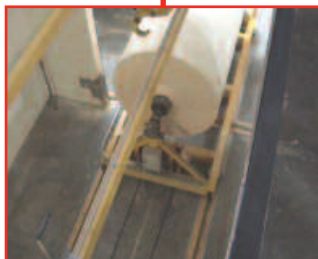
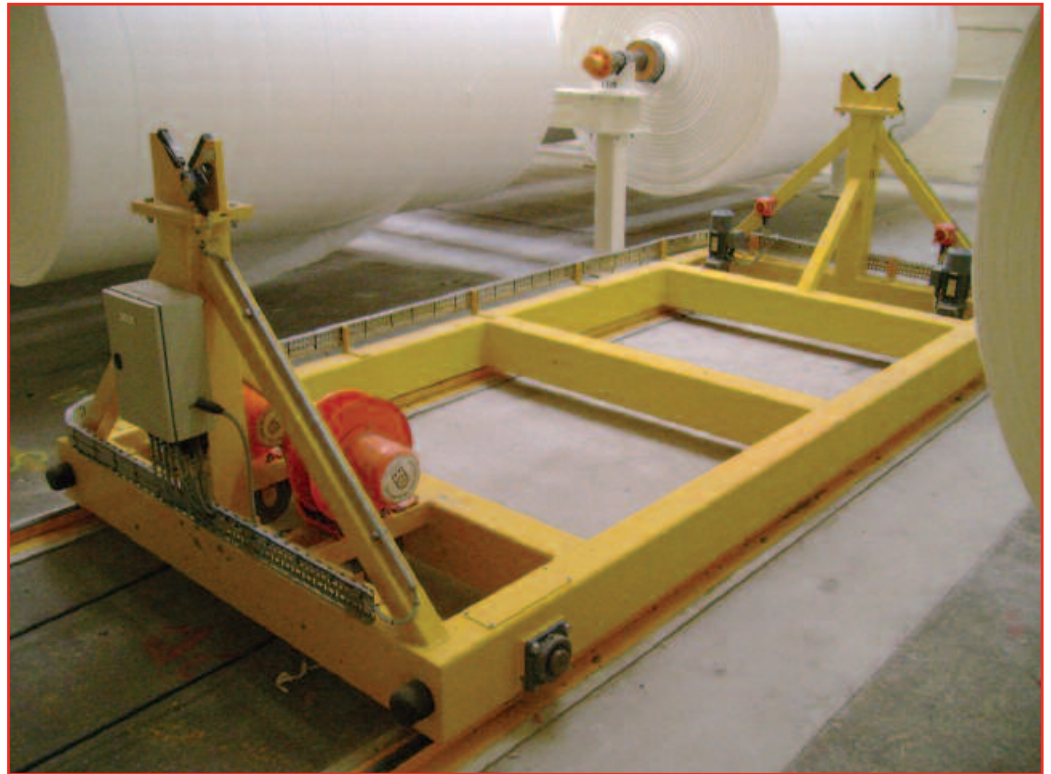
Street CraneXpress Ltd have designed and installed a bespoke automated mechanical handling and storage system to ensure a major paper manufacturer will never have to cease production during the all-important maintenance of their machinery.

This involves moving the colossal 4 Tonne, 80 inch diameter paper rolls that come off the production line into a specially designed storage area, before they are taken through for cutting into the much smaller finished product. These giant rolls are produced faster than they can be cut, and so the excess rolls go into storage utilizing Street CraneXpress's custom designed fully automated cranes. With the stores partly or fully populated this allows for the cutting process to continue if the paper manufacturing is interrupted either by failure or planned service. The store therefore acts as a buffer and can supply 48hrs of larger roll for onward production.

The rolls can be removed one-by-one as required for production. The fully automated system is able to record the details of all the rolls produced, allowing the operator to select any given roll based on colour and the historic record of the store i.e. a 1st in, 1st out basis, all controlled by a touch-screen HMI system. The operator is also able to view the operation within the storerooms via CCTV.

The whole system involves 2 integrated 6 Tonne SWL cranes, 1 in the upper store and 1 in a lower store both lifting and manoeuvring the 4 Tonne rolls and depositing them on Street CraneXpress's purposely designed racks. The cranes are able to stop in precise storage positions with an accuracy of  $\pm 3\text{mm}$ .

Due to the overhead height restrictions in the upper store, the hoist hooks on the crane are unable to approach the load from the side. To overcome this problem Street CraneXpress designed a



bespoke active hook system, which incorporates actuators to swing the hooks outwards and then sweep back into position below the load to attach onto the axles holding the paper.

Once the upper store is full, the system automatically begins storage on a lower level.

This is achieved by the upper crane lowering rolls through a floor opening. Here they are lowered onto a transfer bogie, again bespoke designed by Street CraneXpress and situated on the lower floor level. The transfer bogie manoeuvres to a set position within the lower store enabling the lower store crane to collect the roll and deposit in at the next nearest available storage position.

Once there is sufficient population of the store, the paper manufacturing machine can be shut down for maintenance without affecting the ongoing production, as the cutting process can now be supplied with rolls from the store.

Street CraneXpress's system means that production never has to cease, whereas previously this maintenance could mean shutting down production for nearly 2 days whilst the machines are maintained and then restarted.