



Moving Modules Made Easy

An innovative collaboration between the Elliott Group Ltd, the world's leading manufacturer of modular accommodation and secure storage solutions and Irish materials handling manufacturer Combilift Ltd has resulted in safer, more rationalised and cost effective handling and storage procedures at Elliott's assembly plant at Carnaby in North Humberside.



Part of the Algeco Scotsman Group which operates in 31 countries around the world, Elliott supplies standard and bespoke single or multi storey buildings for lease, hire or sale. The company's products are used in a wide variety of market sectors such as education, health, local government, logistics and retail.

Carnaby is the largest of Elliott's four manufacturing sites in the country, covering 27 acres with an annual output of around 3,000 units. An overview of the handling procedures of the modules was carried out a year ago, and Operations Director Neal Andrew identified a number of issues that he wanted to address. "Safety, cost and customer service were the three main areas we focused on," he says. "Although the methods we previously used for handling the modules with forklift trucks met all the health and safety criteria I felt that we could improve on these. Mobile cranes were also an integral part of the procedure, and we wanted to reduce the considerable amounts we were spending on the hire of these. As the cranes could not be used in windy

weather we found ourselves having to interrupt loading operations during bad weather which meant we were paying for them to stand idle. This also had the knock on effect of delayed deliveries to our customers."

Neal and his team had looked at a number of possible solutions such as large container handling forklifts, but advice from the company's materials handling supplier Barloworld led them to the CombiLIFT Straddle Carrier. This machine has been designed for handling oversized loads such as containers, and was therefore ideally suited to the dimensions of the modules.

Due to the nature of the loads to be handled a raft of specific features needed to be added to the standard Straddle Carrier model, and Neal, Barloworld's Neil Broadwell together with CombiLIFT Product Manager Stephen Wells and engineer Meredith Hall embarked on a very detailed project to design a bespoke piece of equipment for Elliott which has now replaced the forklift / crane combination.

Since taking delivery of the Straddle Carrier Elliott has been able to do away with the substantial costs associated with crane hire and the stability of the machine has greatly reduced the risk of damage to the modules when they are being moved. Bad weather is no longer an impediment to the delivery schedule and a further benefit has been better utilisation of labour at the Carnaby plant.





“The requirements of this application were unique,” explains Stephen Wells. “For example, the modules have top lift fittings on them as they are craned off when delivered on site, so we had to devise a safe way for operators to attach the spring loaded chain shackles onto them from the Straddle Carrier beam. With a detachable ladder carried at the side of the machine and fall arresters fitted to each corner, operators can access the top of the modules and are safely harnessed when carrying out this procedure.”

As the name of the Straddle Carrier implies, its frame and wheels are positioned either side of the load enabling the distance between stacked modules to be reduced to just 1m. The frame has been designed to be raised to varying heights and enables modules to be double stacked. This is an improvement on the previous bulk storage methods in terms of space utilisation and also makes retrieving specific units quicker.

The three wheeled design ensures maximum stability with all wheels permanently in ground contact even on uneven surfaces. For a machine with a load capacity of 30t its own weight of 16t is extremely light – a conventional container handling forklift can weigh in

unladen at 70t. The reduced ground pressure per wheel when using the Straddle Carrier therefore enables easy operation on Elliott’s gravel yards, causing no ruts or surface disturbance and avoids the need for costly ground reinforcement.

A further issue for Combilift’s engineers was the ability to cope with the various module sizes which range from 7 to 14m in length. Added to this was the uneven weight distribution in modules which incorporate internal features such as staircases, kitchens or bathroom facilities. The solution was to fit a series of three point adjustment bars to the beam which offer 166 different anchoring positions. This ensures the stable lifting and transportation of even the most off-centred loads. Yard Supervisor Steve Nicholls comments: “The ability of the Straddle Carrier to lift our very diverse range is of great benefit. As the design of modules is expected to get higher and wider this will also stand us in good stead in the future.” Service and maintenance is straightforward according to Barloworld’s service engineer Steve Keable who looks after all of Elliott’s handling equipment on site: “It is an easy machine to work on and Combilift has used a lot of components common to its forklift range, which keeps things simple!”



“A great deal of consultation and technical expertise has gone into the development of our machine, and Barloworld and the management and engineering team at Combilift were very receptive to our input,” says Neal Andrew. “On visits to the manufacturing facility in Monaghan we saw at first hand Combilift’s commitment to developing customised solutions and were impressed. We now have a system in place for moving modules around the site and onto delivery trailers which is safer, quicker, more dependable and much more cost effective.”

Operations Director Neal Andrew

