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The Barts project was delivered with just six trucks a day and more than 97% of waste was recycled

Construction's complete logistics solution: an idea that is just in time

Bob Dempsey MILT, talks about the London Construction Consolidation Centre, and its role in supporting Skanska's delivery of the St Bartholomew's Hospital project and why the future should revolve around these centres.

Bob Dempsey is Operations Manager South, Wilson James. As part of that remit, he has overall responsibility for the London Construction Consolidation Centre (LCCC). He has been with Wilson James for eight years, before which he spent 20 years in the marine industry.

The St Bartholomew's Hospital (Barts) project aimed to create a state-of-the-art hospital whilst refurbishing the existing buildings on site. The logistical challenges of delivering a construction project are well known, particularly on constrained city-centre sites. Material damage and consequent delays and disruption are standard issues, and as such can seem almost inevitable to the process.

Wilson James started the LCCC in a relatively small way back in 2005. Now, it can offer an integrated logistics system (ILS), handling everything from material delivery to waste management.

The LCCC runs out of spacious warehouses in Silvertown, serving multiple projects. It is close enough to central London to be within easy reach of city-centre projects, but it is outside of the Congestion Charge Zone and close to the motorway network. All the materials for the projects it serves are delivered there.

Once at the LCCC, the materials are put into bespoke work packs for delivery on site, each pack includes exactly what is needed for the next day's work. It can be described as 'just-in-time thinking'; the materials are there when needed, but are not lying around on a space-constrained site for many days beforehand.

Bob Dempsey said: 'From a health and safety perspective, this minimises the risk of slips, trips and falls. It also stops the material getting damaged,

because it's in the right place at the right time. This brings certainty to the project and we have now got delivery reliability to 97%.'

This can work as a standalone service for clients, but also for the ILS service that is operating on sites like Barts. Wilson James also provides material handlers, banksmen and security on site, making sure that all materials get from the vehicle to the point of use.

'Everyone is multiskilled, which allows us to reduce the number of people we need to deploy on site,' Bob said. 'Traffic marshals and banksmen can be security staff as well. Material handlers are trained to deal with waste, and we can control how work is done using the minimum number of personnel. This benefits the client.'

Staff are cross-trained at the LCCC, so, for example, if there is a sudden need to make an urgent delivery it can be met, as the fork lift drivers in the warehouse are also qualified to drive the trucks. This multiskilled team is also backed up by robust technology, another key element of delivering at a resource-constrained site – and in this case a working hospital.

No project wants to cause obstruction to its neighbours, but building at a live hospital, with a busy A&E unit next door, means dealing with unique constraints and the logistics need to be right.

To keep the construction work completely separate from ambulances and pedestrians, there had to be particular attention to the positioning of the hoists. One entrance was not built until the very end of the project, so that the hoist could be kept as far away as possible. It was originally thought that three hoists would be needed, but through shrewd use of modelling this was reduced to two.



Above: Bob Dempsey MILT, Operations Manager South, Wilson James

Bob Dempsey said: 'We have a consultancy division with a software tool that looks at the build and the quantities of material, it then produces a schedule that will show how many hours per week we will need a hoist. By using that data to smooth the delivery over the project, and with careful use of resources and labour, we were able to remove one hoist from the plan.'

'Another challenge was that the site only had one off-loading area, which required trucks to reverse into the site, and the fork lift was operating in a confined area to ensure it would not disturb the operation of the hospital. Having our own fleet and our own drivers meant we had local knowledge with a competent workforce.'

To make this easier, the project moved from using 26t rigids to 18t rigids and 7.5t curtain-sided vehicles. It was also made far simpler, so that one truck with materials for several contractors delivered to the workface. This technique improved productivity while using fewer resources and saving lorry miles.

'Reducing the number of trucks to the site by 50% not only helps the environment but also helps with issues like cycle safety. Most construction sites take deliveries between 8am and 1pm; our methodology creates a heartbeat of material flow throughout the day in order to keep the trades at the coalface. Also, because we use vehicle tracking, we can divert back the nearest vehicle for collections.'

There was an equally dramatic reduction in waste, with only 2.78% of waste going to landfill, with true reuse and recycling of redundant material: 'We are a licensed waste carrier, and it's very rare that vehicles return empty,' Bob Dempsey said. 'When materials go to the site palletised, they are returned to the LCCC for reuse.'

Another notable win was with lighting. An ordinary light comes in a box with instruction sheets, and that's all waste. We worked with the manufacturer so that the lights were delivered in collapsible plastic crates; no packages, no manuals. Once the lights were fitted, the crate was collapsed and sent back so it could be reused.'

The whole ILS means that none of the trade contractors on site needed to

provide its own labour. Research by Anglia Ruskin University estimates that trade contractors on the Barts project saved materials costs at an estimated £1,421,300. The whole project was delivered with just six trucks a day and more than 97% of waste was recycled, vastly reducing the carbon impact of the project.

'You have got to look at the social benefits,' Bob Dempsey added. 'Quite a lot of sites have corporate goals; they want to be built in the most efficient way for stakeholders. Part of the legacy of the building is for the neighbours; if the impact of the build is kept to a minimum and they are kept informed, it makes for a whole happier scenario for the hospital and the bank next door.'

'Keeping noise to a minimum is also important. When our trucks turn up at site, we ensure that engines are switched off. As soon as the gates are opened, they are started and driven off immediately.'

Wilson James is proud to be one of the few construction companies to achieve the FORS gold standard. For this, it invested in enhanced driver training, blind spot elimination equipment, cameras that would record any accidents, side radar and left-turn warnings for vulnerable road-users.

Bob Dempsey said: 'Many projects are mandating FORS accreditation, it is an investment Wilson James has already made and it's paying dividends. It is taking some of the lesser operators off of the road and those that do operate, operate to a very high standard. All of our drivers have had Safer Urban Driving Scheme training; half of it is in the classroom and half of it training on the road. On top of that, we have in-house training on cycling and vulnerable road-users.'

Given the benefits – the cost savings, environmental benefits, social, health and safety benefits and adherence to the programmes – why doesn't every project use a construction consolidation centre?

'It was just starting to gain momentum when the recession kicked in,' answered Bob Dempsey. 'That's when it should have come into its own, as during the recession it could have paid dividends to principal contractors. But it was seen as a cost that reduced their bottom line figure.'

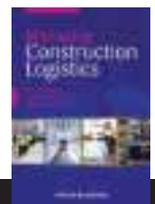
'You have to go deeper to see that while we will bring a small but multiskilled team of on to the site it will save 30 labourers across all the trade contractors. That, and the material savings, more than pays for the consolidation centre. However, it's fair to say that while other industries have used logistics to improve margins, construction still has a little way to go.'

'The onsite housekeeping logistics are also important, but integration of material flow in a true just-in-time controlled manner, from factory gate to the workface; bringing savings, efficiencies and help support programmes, certainly is the way forward.'

'I would love to deliver two identical projects side by side – one using the LCCC and one not – and compare them on programme and cost.' Bob Dempsey may not get his way on that specific wish, but Transport for London has realised that as London's population explodes and road space is reduced further through cycle highways, something will have to be done to reduce traffic.

'The Mayor and Sir Peter Hendy are looking at ways to encourage more construction industry consolidation centres. There's now a very strong movement to promote it throughout London. In fact, consolidation centres could be useful throughout the UK, especially in all urban cities where there are builds with footprints right across the site in addition to there being limited access.'

Perhaps the time has finally come for the idea of Construction Consolidation Centres to really take off.



FURTHER INFORMATION

This practical book highlights the benefits of good logistics as well as the use of consolidation centres on projects. *Managing Construction Logistics* By Gary Sullivan, Stephen Barthorpe & Stephen Robbins. Published by Wiley & Blackwell.