



Precast walls system excels on renewables plant project

Using a new form of precast wall has made delivery of a concrete wall cheaper, quicker and safer



CONCRETE WALLING

**JAMES
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Traditionally, the dividing line for when it's better to use precast concrete and when it's better to use in-situ has been pretty clear. But a new form of wall from concrete manufacturer Poundfield Products has been blurring the lines on an anaerobic digestion plant in Wrangle, Lincolnshire.

Staples Vegetables wanted to construct the plant and needed a boundary wall for its project. Such a wall has traditionally used in-situ concrete, according to Poundfield MD Mark Jardine.

"Precast walls are generally thin and have limitations as to how much load they can take," he says. "It's been unpopular with some firms as it can get damaged by loading shovels. This is because of the connection between the units. You can produce a wall which is maybe 3 m high but those units are not connected mechanically, so you put the entire load on every 1 m section of the wall."

However, the process of building an in-situ wall can be labour intensive and time consuming because of the need to bring shuttering on site and tying in reinforcing, he says. As a result, Poundfield has created Shuttabloc, which combines precast concrete walling with in-situ pouring.

"Shuttabloc is a hollow section so you have with the same finished wall characteristics you'd have with precast," explains Mr Jardine. "You put the sections down as you would with a standard precast wall, and then you pour concrete through a hole in



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the unit. The wall then becomes like a single solid block, like an in-situ wall. You end up with the same properties but without the need for onsite shuttering, so you cut down on time and labour."

Making the case for precast

The original specification from Staples Vegetables called for an in-situ wall, 400 m long, 5 m high and able to withstand the contained material being driven on by a 17 tonne loading shovel at the top of the wall. "Usually that would be impossible to do with

precast as the leverage created by that sort of impact is enormous," says Mr Jardine.

Staples Vegetables was convinced that only an in-situ wall would be sufficient for the job, but Poundfield Products suggested its Shuttabloc alternative as being quicker and more cost effective. "Because we're manufacturing in a factory, our placing of reinforcing is done mechanically so you don't need people on site to do this," says Mr Jardine. "The cost of producing each section is less per metre than in-situ. We transfer a lot of the manual site labour into a factory where there's lifting equipment and no requirement to work at height, which also makes it safer."

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MARK JARDINE, POUNDFIELD

To convince the client, Poundfield carried out a controlled-environment trial to demonstrate the capabilities of Shuttabloc. After negotiations between engineers from both companies, the Staples Vegetables team realised that it was possible to use an alternative.

Poundfield carried out a full service from design, to supply, to installation. This complete process helped them solve one of the challenges created by the location of the site. The land in the area is essentially very deep peat beds, making installing steady foundations complicated. As a result, Poundfield designed the Shuttabloc slabs to tie in to the floor slab, creating a steady, stable wall. The units came with Halfen Kwikastrip bars precast, which were then folded out on site to connect to the concrete slab.

Once the Shuttabloc panels were on site, work continued at an impressive pace. "You just need a crane and four people to place the units, so we were getting through up to 36 m a day for installation, which is less than half the time it would take for in-situ," says Mr Jardine.

Getting the work done quickly was vital, as Staples Vegetables needed the wall ready as soon as possible. With the panels in place, pouring could also take place in almost all weather, as the concrete is shielded inside the Shuttabloc and safe from the elements.

The entire wall was wrapped up in 3 weeks, giving Staples Vegetables a boundary wall with both the quality of finish expected from a precast wall, but with what Poundfield points out has the strength and stability of a traditional in-situ one.

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