



CASE STUDY

Works: Demolition

Sector: Agriculture

Redwell Towers, near M25

OVERVIEW: The site was located on a large farm which was used as a yard for horses and housed units for a variety of local businesses. The silos that were to be removed could be seen from the M25.

CHALLENGE: To access the site, machinery and plant would need to pass two houses that were on the farm entrance. This meant that care would need to be taken to ensure minimal disruption to residents. The two silos to be removed were located next to horse stables and a storage area in the yard.

The wider slurry store backed onto the farmland; however extra care would be needed with the tall straw silo, as it was located just five metres from a storage unit. The two silos to be removed were:

Silo One - A twenty-metre-high silo with a metal roof, containing rotted, wet straw that filled the silo to 8.5 metres in depth.

Silo Two - Six metres in height and was empty apart from rainwater to a depth of approximately 1 metre.



Both silos were constructed of the same material - pre-cast panels with post tensioned hoop bars fixed externally.

Working hours would need to be as stated in the Section 81 issued by the council, Monday to Friday 08:00 hrs - 17:00hrs.

SOLUTION: Once Heras fencing and welfare had been put in place, the scaffolding was erected around silo one. A trained scaffolder, following a separate method statement, built a circle independent tower around the silo. This also had debris netting to keep all material within the scaffolding and site.



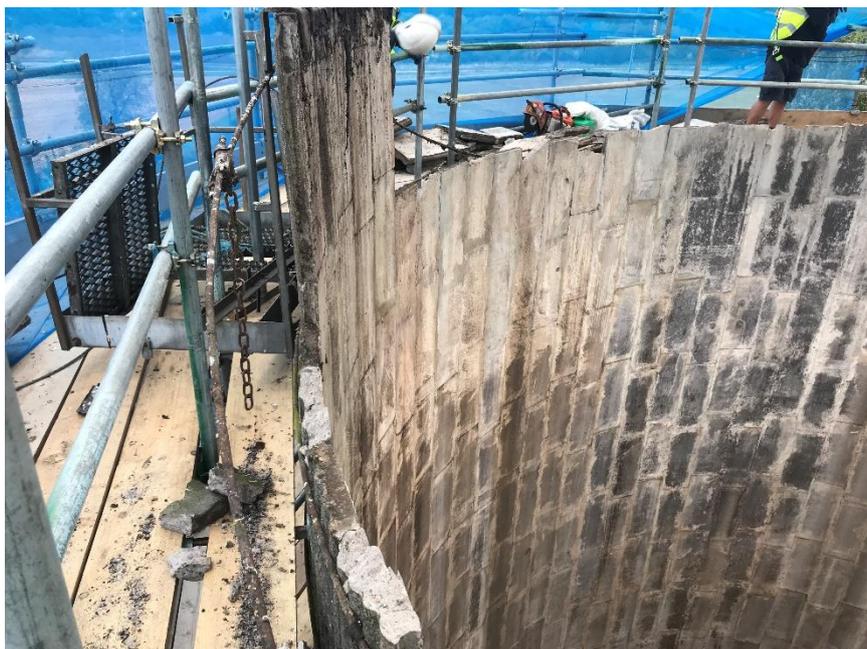
Once the scaffolding had been erected, one of Lawson Group's highly trained demolition supervisors assessed the scaffolding up to the top of the silo. Once confident that the scaffolding met Lawson Group's high standards, cutting of the metal roof could begin. Using a disc cutter, sections were cut out and allowed to fall, in a controlled manner, into the pre-determined drop zone within the silo.



Following an engineer's report, a small drone was used to inspect the inside of the silo, an engineer was asked to check the integrity of the structure before any structural demolition took place. Once the engineer gave the all clear to proceed, Lawson Group's demolition operatives began to hand demolish the concrete sections from the top down. Working from the scaffold tower, they were removing no more than one section all around the top at any time. Operatives used TE1000 and TE750 breakers which



were run from a generator located on the ground. As operatives broke out each section of concrete wall, the sections were lifted out and deposited down a rubble chute positioned on the scaffold - this allowed the material to be removed from site efficiently.



Once the first section of wall panes had been removed, a disc cutter was used to cut the external stress bar, this was cut into one-metre sections and placed in the rubble chute for removal from the working area. Prior to cutting, it was ensured that no residual prestress remained in the bars and only loose non-stressed bars were to be cut. This continued down the silo, working around the top of the silo, one metre at a time.



Due to the rotted and wet straw located inside the silo, the hand demolition process could only proceed down to approximately eight and a half metres from the ground floor. At this point the scaffold tower was carefully removed.

Once the scaffold tower had been removed, one of Lawson Group's very own Caterpillar excavators was used to remove the remaining silo structure. The machine was fitted with a re-handling grab attachment which was first used to empty the silo. A Cherry picker, with a trained operative, was brought alongside the silo to allow an operative to safely guide the excavator arm into the top of the silo. This was used purely to help the high reach machine see from an elevated level and help guide the arm to grab

out material, both operatives were in contact with the use of a two-way radio.

Once the material from within the silo had been removed down to a level of three metres, a sheer attachment was used to reduce the height of concrete walls. Once the rotted straw material had been successfully removed from inside the silo it was placed directly into a waiting lorry to be taken off site. The remaining eight and half metres of structure was demolished using the excavator from the top down. All concrete from the demolition was crushed and used on site. The rings of steel that were wrapped around the silo were laid on the ground, these were removed and loaded into a 40-yard skip and taken off site.

Once silo one had been completely removed, demolition works could begin on the smaller silo two, using a demolition excavator. The machine was fitted with a suitable attachment working from the top down, the machine slowly demolished the structure. The structure material, once on the ground, was processed and left on site. Like the first silo, all steel bands surrounding the structure were cut and loaded into the 40-yard skip and taken off site.



RESULT: Both silos were successfully removed and, where possible, any materials were recycled onsite.

To find out more on how Lawson Group can help with your next demolition or asbestos removal project, call 01793 782000, email estimating@lawsongroup.co.uk or visit www.lawsongroup.co.uk