

# MPA Health and Safety Awards

Aggregates, Asphalt, Cement, Contracting, Dimension Stone, Lime, Precast Concrete, Mortar, Ready Mix, Recycling and Silica Sand

<b>Topic entry (tick boxes that are applicable)</b> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input checked="" type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/>	
<b>Entry number (MPA Ref)</b>	22025
<b>Title of Entry</b>	Cement Tanker containment shed
<b>Name of Company</b>	Aggregate Industries
<b>Location</b>	London Concrete Bow
<b>Video</b> <input type="checkbox"/> (if yes, please include URL for video)	No
<b>Other resource</b> <input type="checkbox"/> (if yes, please include description)	
<b>Fatal Theme (tick boxes that are applicable)</b> 1 <input type="checkbox"/> 2 <input checked="" type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/>	
<b>BACKGROUND</b>	
<p>London Concrete Bow receives on average 450t of cementitious powder per day. With the high level of traffic at our plant, over 350 vehicle movements per day, along with the potential risk of a dust emission blowing on to the A12 (The A12 Approach to the Blackwall Tunnel that carries 100,000 vehicles every day - Credit: Google) an environmental &amp; safety site improvement plan had been conducted, this plan required an enclosure to be built to house two cement tanker deliveries. The concept is to protect drivers from the high volume of internal traffic, and to contain the tankers operating within a purpose-built containment shed that is complemented with dust suppression and a bespoke designed pressure monitoring and high-level system.</p>	
	
<b>Before</b>	<b>After</b>
<b>MANAGEMENT OF PROCESS</b>	

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To create a safer working environment for our cement tanker drivers, and to conceal and contain the operations of tankers, we had designed a Tanker Discharge shed. The shed functioned to segregate our traffic and the tankers operating, to create a safer workspace for the tanker operators. Creating this shed also concealed the tanker operation and would contain and suppress any dust emissions in the event of a discharge hose leak. The shed was fitted with dust sensors which would trigger a misting system.

The full perimeter of the yard was also fitted with a sprinkler system to ensure that no dust could leave our boundary in the event of a failure from the tanker delivery side. With a high turnover of tanker operators coupled with the sensitive location that our plant was situated, we felt it necessary to take every step possible to mitigate the consequences.

The full plant team and our delivery partners were involved in the consultation stage of what was required to tackle the problems that faced our plant. With London Concrete Bow being AI's busiest plant, it was necessary that we maintained our production speed and created a solution that was not only safer for the operators but acted as a traffic calming measure for the gyratory system in the plant.

The project was then awarded to various contractors to create a perimeter wide dust suppression system, a tanker containment shed fitted with dust sensors and a misting system, and a new pedestrian route that led directly to the batching control room that was designed to protect the operators from the gyratory system traffic. A bespoke designed silo protection system was fitted with digital pressure monitoring system, PRV proximity switches, level monitoring so that the operators can view at discharge level in order to eliminate the need to split loads into alternate silos. The level monitoring was also linked to a "pre" alarm that would activate at 95% capacity. This function gave the operator sufficient time to stop the discharge in a controlled manner rather than hitting a high level and getting 30 seconds to shut down which we found led to mistakes. The silos were also fitted with High Levels and Ultimate high levels. To finalize this project, the entire operation is fitted with CCTV so our plant team can monitor the tanker operations.

After a recent visit, the project was referred to as a best available technique.

## BENEFITS

**WPT:** Full point to point traffic pedestrian segregation for tanker drivers which never existed previously. The driver can now back into the tanker shed, get out of their cab in an area free of traffic and walk to the office using a purpose-built walkway just for this operation without the need to cross any roads. This applies to the Fatal 6.

**Operating behaviour:** The operation within the tanker shed is monitored by CCTV, the operation itself has a bespoke online induction solely for the cement tankers. The silo protection systems provide a graphical representation of what is in the silo so that the operator is fully aware of the levels within the silo before discharge. In the event of high pressure, a TIMEOUT is activated that can only be unlocked by the plant team. The pre-alarm function also acts as an aid to change behaviour as the pre-alarm allows sufficient time to close down the tanker without the need to rush around to shut down in 30 seconds. These changes have led to zero emissions, eliminated the need to split loads and have also eliminated the practice of activating a high level.

**Health and wellbeing:** With the tanker discharge operation undercover, the operators are now protected from the elements and their task is isolated so that the operators can focus on the task at hand without the concern of vehicle movements. The perimeter wide dust suppression system is automated and can also be activated remotely. This has been a great success to eliminate airborne dust as the Bow plant is situated between two aggregate companies.

## INNOVATION

The project is a completely new concept for our company. To deliver this project during the pandemic is a testament to Aggregate Industries' commitment to empowering their workforce to take ownership and bring the ideas of its employees to life.

This project was the collaboration of customer and supplier to deliver an innovative solution to create a safer workspace for tanker operators and a more robust environmental protection system.

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Innovation in action bespoke silo protection system with full silo level display and pre-alarm to compliment the high level and ultimate high level. Spilt loads and high-level activation have been eliminated.



Tanker containment shed allows for the trailer to fit inside the building whilst the cab remains outside. The drivers are completely protected from the rest of the plant's operations.

## DEVELOPMENT & TRANSFERABILITY

Our solution has been shared with the rest of Aggregate industries and has been submitted as the best available technique to the Tower Hamlets Council At present we are the only plant to have this type of solution, however, the Bow plant is unique and required a unique way of dealing with the problem.

**NB if document has embedded images try and include these  
 If other documents provided say additional information available.**