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D. HUGHES
DEMOLITION & EXCAVATION LTD.

CASE STUDY – INDORAMA POLYMERS

Project	Indorama Polymers Workington Ltd.
Project Address	Siddick, Workington, Cumbria, CA14 1LG
	
Client	Jackson Philips Asset Solutions
Principal Contractor	D. Hughes Demolition & Excavation Ltd
Nature of the Project	Dismantling a PET facility in Workington, including vessels, buildings, pipework, tanks etc.
Value	Credits
Length of Contract	6 Months +
Start date	October 2017

Description of the works

Dismantling the former Indorama Polymers Workington; Vessels, buildings, pipework, tanks etc.

The Indorama Polymers (IRP) Workington Limited, PET facility is located in the industrial town of Workington, in the county of Cumbria, North-West England. Set in 8 acres surrounded by open land and sea. The site is located immediately next to the public highway known as the A596 and is subject to high winds.

Sequence of demolition:

- Site set-up
- Liaise with Asset Company to discuss credit items
- Soft strip
- Dismantling work
  - Phase 1
  - Phase 2
  - Phase 3
- Crushing and backfilling the footprint, voids etc.
- Site clearance
- Completion

Demolition was executed in 3 phases:

Phase 1 was completed using the mechanical method utilising hydraulic excavators fitted with a variety of attachments.



Phase 1: Works commenced to dismantle and remove the low level buildings located to the front of the tall steel vessels as shown in the picture. The demolition and clearance of the low level structures allowed access to the high steel vessels situated behind.





Although the tanks/vessels had been drained and flushed out prior to their removal, there were low points in the hot oils system that could not be drained; no flame or spark producing equipment could be used to cut into the piping system associated with the hot oil system.

Therefore, all pipework, external features to the vessels/ tanks etc. had to be cold-cut in sections and lowered to the ground in a careful and controlled manner. The CAT345 high reach hydraulic excavator fitted with a rotating shear attachment was utilised to carry out this element of work.



Phase 2 was also demolished by mechanical means; the external cladding was removed by cold-cutting in small sections and lowering to the ground or directly into the steel skip. Once the building was reduced to a steel frame, a hydraulic excavator fitted with a shear attachment systematically cut down the frame.



Phase 3



Originally we were planning to demolish Phase 3 and the highest aspect of the structure using the same method as previous. However, due to the time of year (January-February) and the high winds we were experiencing it was decided that the safest and most effective way to carry out the demolition would be to use explosives.





The surrounding structures/pipework was demolished leaving only the tallest part of the structure standing.



The blasting plan was to prepare and displace a length of the Support legs between ground and first beam levels, on the South side of the structures to effectively topple the structure to the South. The steelwork legs were cut using oxy-propane cutting equipment in preparation for the explosive kicking charges (Nitro glycerine cartridges) which were confined in sand bags whilst the legs to the North side of the structure were subjected to hinge cutting.

The picture below shows a side view of the prepared tower minutes before explosive demolition.



Pictures of the site previous to demolition from different angles:





The completed site:

