

# Hollesley Bay Prison Replaces Steel with UPP

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## Project Profile:

HM Prison service chooses UPP pipe to replace corroding steel fuel lines

Location	Hollesley Bay Prison, Woodbridge, Suffolk, UK
Client	Her Majesty's Prison Service
Mechanical design	Adler & Allan Ltd
Installation Year	2011
FFS Customer	Adler & Allan Ltd

Originally opened in 1887 as a Colonial College to train those intending to emigrate to the far flung reaches of the British Empire; Hollesley Bay became a prison in 1938 to train young offenders in the Borstal system and more recently has become an open prison which offers different regimes to 365 Category D prisoners.

Inspections undertaken after a small heating oil leak in the winter of 2009 revealed that the prison's heating oil systems, including above ground single skin tanks and a network of steel pipes located in ducts under the prison grounds were suffering from severe corrosion (compounded by the sea air and salty ground water due to the prisons coastal location) and needed to be replaced.

WSP CEL Ltd was appointed as engineering consultant to review the scope of work and create a plan of action to replace the existing services. It was at this point that Franklin Fueling Systems Ltd was contacted to discuss how UPP pipework could be implemented as a solution for replacing the existing lines. A Franklin Fueling representative visited the site during this initial phase to survey the site and give valuable advice on the pipework requirements for the project.

Due to the specialised nature of the job Adler & Allan Ltd were sub-contracted to carry out the works to the fuelling system. The Adler and Allan Group has become one of the UK's key specialists in oil industry and environmental services and was the perfect choice to carry out the work required in this project.



Hollesley Bay Prison visitor entrance



Experienced fuel installation engineer, Steve Picton of Adler and Allan completing work to the double wall UPP fuel lines

Adler and Allan's scope of works included the decommissioning and removal of the legacy fuel system and the supply, installation and commissioning of two new integrally bundled 60,000 litre above ground fuel storage tanks, a twin-pump set, the new UPP pipework ring main and feed lines and a leak detection monitoring system. The UPP lines feed boilers and backup generators in various prison buildings, including the kitchens, gymnasium, visitor centre, healthcare and education blocks.

50mm (1.5") double wall UPP pipe was chosen for the ring main and the smaller branch lines were made using 32mm (1") double wall UPP pipe; the smooth internal bore of the 10 bar pressure rated UPP giving much improved flow rates and reduced pressure losses over comparably sized steel lines.

The corrosion resistant polyethylene construction of the UPP double wall pipe coupled with its hydrocarbon impervious internal barrier layer and 50 year life expectancy made it the correct choice for this project. For extra piece of mind a constant monitoring leak detection system was also supplied and installed. This system pressurises and monitors the interstitial space between the inner and outer pipes signalling an alarm if the pressure decreases and line integrity is lost.

Almost half a kilometre of UPP pipework was installed on the site, all of which was delivered in 50m coils, allowing for quick and easy point-to-point installation with a minimal number of joints. Any joints that were required were made using UPP electrofusion fittings which give 100% leak-tight performance for the life of the pipework system.

"Thanks to the long continuous lengths of UPP pipe we were able to thread it through existing service ducts from one end to the other without having to open up the entire trench. This meant the installation happened twice as fast as it would have with conventional steel pipes and with minimal disruption to the day to day operations of the site."

Paul Sheperd, Adler and Allan's supervising Project Engineer for the site



Existing steel fuel lines sitting next to new UPP Polyethylene lines in ducts during installation. Note the steel lines were removed once the new lines were completed and commissioned.



50mm (1.5") diameter UPP double wall ring main line protrudes and returns through ducts at the bottom of the shot and manifolds off into three 32mm (1") double wall boiler/generator feed lines

**Franklin Fueling Systems Equipment:**

50mm (1.5") Double wall pipe	63/50 mm	180 metres
32mm (1") Double wall pipe	40/32 mm	150 metres
Leak Detection	LD3-UPP	2 units