



PROJECT

Tovi Eco Park

LOCATION

Basildon, Essex

INDUSTRY SECTOR

Waste Treatment

PARTNERS

- Urbaser Balfour Beatty
- Atkins

SOLUTIONS

New Sprinkler System and Gas Suppression Systems

BENEFITS

- Comprehensive fire safety to Tovi Eco Park
- Protection for the local environment

PRODUCTS

Sprinkler Systems, Water Cannon, Tank & Pumps.
Inert Gas Fire Suppression Systems

THE CHALLENGE

Tovi Eco Park is part of a 28 year contract awarded to Urbaser Balfour Beatty by both Essex County Council and Southend-on-Sea Borough Council, to manage waste from households across Essex and Southend.

The mechanical biological treatment (MBT) facility will treat all residual waste as well as complementing existing recycling and composting services within the region. The Communities will benefit from increased recycling and reduced landfill .

The waste will be processed in the most environmentally friendly and sustainable way possible. Tests have already begun and during 2015 the volume of waste being processed will steadily be increased. The trial period will prepare the equipment for the substantial quantity of waste that will be processed. Once fully operational, the facility will be capable of treating an enormous 417,000 tonnes of municipal waste a year.

Quality of products and building services was clearly a priority of the client and an express requirement of the contract was compliance with industry specific guidance. This included Property Damage Fire Prevention for Energy from Waste Plants.

“Property Damage Fire Prevention for Energy from Waste Plants”

THE SOLUTION

Vipond’s systems design department closely tracked all requirements during the design process to provide the solutions demanded by the client. The guidelines were prescriptive and specified that all fire products should be approved by a recognised body such as the Loss Prevention Certification Board (LPCB). This is widely regarded as the UK benchmark for fire approvals and is respected around the world. Vipond Fire Protection is a big advocate of third party certification for Fire Safety Systems. In addition to Fire Sprinklers, in which, Vipond hold a level 4, LPS 1048 certification, the gold standard for sprinkler systems, the company is also certified by LPCB for other system types such as LPS 1014 for Fire Detection & Alarm. More recently, Vipond has undergone the approval process for LPS 1204 for Gas Extinguishing Systems.

The project began towards the end of 2013 with detailed proposals and preliminary designs. The scope of works extended to a wide range of fire suppression systems throughout the Eco Park. These included an automatic sprinkler system in accordance with BS EN12845, gaseous fire extinguishing systems to BS:EN15004, water spray systems and the provision of water cannons to protect deep bunkers.



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Sprinklers

The scope afforded property protection with 6 installations covering over 12 distinct areas throughout the facility. With the exception of the car park these systems were almost entirely to High Hazard category. Value added engineering solutions were incorporated where benefits could be realised. For instance the sprinkler heads were provided with a Teflon finish and a special pipe coating was added to provide an enhanced lifespan for the pipe.

To deliver the required water supplies, a cylindrical water tank together with main electric and standby diesel fire pumps were installed. Both pumps are capable of delivering a nominal 6,500 litres per minute at 8 bar pressure. Five sets of Wet Installation Control Valves are served by the water supply to provide the High Hazard sprinkler protection. A jockey pump is installed to prevent unnecessary activation of the main electric pump. The tank size was determined following completion of full hydraulic calculations. This was based on a water density of 17.5mm/minute over 260m².

As a further measure, a series of water curtains were mounted at high level. These are controlled manually from the Process Hall and cover the entry points of the conveyors from the bunkers to the Process Hall.

IG55 Gas Suppression

Automatic/manual IG55 systems were installed within the Generator room, Transformer room and Electrical Switchrooms. The 300 bar systems are designed deliver a uniform concentration of extinguishing agent throughout the protected areas within 1 minute in accordance with BS EN15004. IG55 is a blend of naturally occurring gases which reduces the oxygen in a controlled manner within the protected space to the level where combustion can no longer be sustained, but at the same time still being safe for people. Being electrically non-conductive and discharging as a vapour through hydraulically calibrated engineered nozzles, there is no residue to clean up from the extinguishing agent within the rooms. As in any fire situation, it is recommended that people do leave the rooms if the system operates. Each system has a dedicated control panel that has two zones of smoke detection throughout the space to provide audible and visual alarms, and also control the release of the IG55 extinguishing agent. These are positioned outside the main entrance doors to each protected area. Secondary doors and exits have system status indicators provided outside. For the larger of the two installations IG55 storage containers are located within a dedicated cylinder store which houses 34 x 80 litre containers. The smaller, Switchroom B, is protected by 15 x 80 litre IG55 containers located within the room.

In the automatic mode, the system will only discharge after two zones of smoke detection are activated in coincidence. This helps to prevent unnecessary system actuation should there be the unlikely event of a spurious fault on a detector. The panels also have a manual release button to allow system activation should a fire be visually detected by someone in the area. Following an automatic or manual activation of the system, a suitable time delay period is provided to allow people to leave the protected room before the extinguishing agent releases. The start of this delay period is signalled by an audible alarm of a different tone than that of the main fire alarm system.

Door caution signs are also fitted at all entrances to let people know that they are entering an area protected by a gas suppression system.

Water Cannon

Water Cannon and Hydrant supply were facilitated by a 45m³ tank with 2 electric Fire Pumps and Jockey pump. The electric pumps were rated at 1,500 litres / minute at 8 bar. The manually operated cannons enable an operator to direct a water stream at a fire within the bunkers.

THE OUTCOME

All in all a comprehensive series of fire protection measures are provided for by a wide range of Vipond suppression systems at Tovi Eco Park. This allows an integrated approach to the fire safety plan and the safety of the premises.

“all fire products would be approved by a recognised body”



COMPANY PROFILE

Vipond Fire Protection Ltd has its roots going back to 1969, when it was started as a small family owned business. In 1998 it was acquired by Vipond Inc of Canada. The company has since expanded and grown and now has 5 offices covering the whole of the UK and Ireland. Vipond Fire Protection Ltd is ultimately owned by API Group Inc.

API Group Inc. is a multi-billion-dollar parent company for 38 independently managed construction companies in more than 200 locations worldwide. API Group combines the personal attention of small-to-medium sized construction companies with the strength of a global industry leader to build a safer environment, develop leaders and bring innovation to the construction and fire protection and suppression industry. Since 1926, API Group has grown by acquisition to become the stellar multi-billion-dollar company it is today.

The secret? Our subsidiaries maintain who they are. They keep the identity, reputation, customer relationships and culture they've worked hard to establish.

API Group's subsidiaries have collectively served customers on all continents, including Antarctica.

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