Case Study

James Hall Distribution Centre

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Project Outline

Contractor	Bowker Ltd
Location	Preston, Lancashire, UK
Sector	Manufacturing, Warehousing
Disciplines Covered	• Fire Alarm • Aspirating Detection
Key Points of Interest	• 40 Aspirating Detector Units • 5 Addressable Fire Alarm Control Panels • 20 Hand-Held Pager Units

Project Overview

James Hall founded in 1863 in Southport, Lancashire is a wholesaler, manufacturer and distributor of goods to around 640 SPAR shops in the north of England.

With over 150 years of experience in the food retail and wholesale industry, James Hall has acquired a range of businesses to help support their SPAR brand.

The Challenge

James Hall owns multiple warehouses and distribution centres within the north of England. One being their primary purpose-built distribution centre first constructed in 2010. The distribution centre is home to food processing, frozen storage and warehousing facilities.

Protec was employed by Bowker Limited, the chosen M&E contractor for James Hall to provide a full fire detection solution to the new food production and distribution centre. The system would have to be compliant with current British standards and have the ability to link to various third-party systems.

The systems proposed would have to take into account the environmental constraints a building like this would possess. Issues like low temperatures of the cold and freezer stores, the high ceilings of the warehouse and the washdown areas within the food process areas were to name but just a few.

The Solution

Fire Alarm - the system offered by Protec was substantial in size, made up of five main control panels, a fire alarm loop node and a full repeat panel. The panels combined provided a total of 24 detection loops over 100 fire alarm zones.

The system controlled and monitored a range of fire alarm devices such as point detection, manual call points and loop powered LED beacons all using the Protec 6000 series protocol.

The size of the site and its loud ambient noise in both the distribution and food processing areas make the alarm elements of a fire detection system that bit more complicated. British standards state that a fire alarm has to be that of over 5dBA above ambient noise. It would mean in some scenarios on the project called for substantial sounders to project sound at what was to be over 100dBA. In this case, Protec supplied some heavy-duty talking sounders which were capable of projecting voice messages at over the 100dBA required to meet the BS5839 regulations. Protec supplied a pager system; the pagers are handed out to workers, so they are notified anywhere on-site if a fire condition occurs.

Aspirating Detection System- Protec installed 40 separate aspirating detection systems around the site. The aspirating smoke detection systems on this project addressed different environmental constraints found in various areas across the site.

Warehouses are sometimes an issue when it comes to fire alarm service and maintenance. It is due to the high ceilings and manoeuvring around what could be high bay racking full of stock. When designing fire alarm systems, future maintenance always needs taking into account, so applying the right type of detection is paramount. As the warehouse was a dry storage warehouse, this gave three options as to what kind of detection to use, point detection, beam detection and lastly aspirating

detection. Point detection was not suitable in this instance due to the warehouse exceeding 10 meters and not compliant with BS5839. Beam detection was not ideal due to the risk of obstructions by stock placed on the high bay racking. Aspirating detection was the only suitable option due to its ease of install, not effected by obstacles and the most significant benefit of all the low cost required to maintain these systems.

IT Suites are a crucial part of companies building housing the most critical data. Should a fire break out in the IT Suite, it would be devastating to a business. So in these scenarios, a sensitive but reliable system is paramount. Protec fitted out the IT suites with aspirating detection systems. The aspirating detection systems offered exceptional early warning detection, as they can detect the risk of fire at the most initial stage possible.

Cold stores and Freezer areas took up a large part of the complex due to James Hall housing multiple food production lines. It meant that several areas across the building would require a controlled temperature for the storage of the meats, vegetables and many other ingredients. In these areas, low temperatures can cause issues for point type detection due to condensation formed in these areas. The cold and freezer stores were fitted out with several aspirating detection systems. Aspirating detection systems benefit from the operating temperatures, which can operate at minus 25 Celsius, making them the ideal solution to these environments.

James Hall's new distribution complex also offer food production areas as well as the large-scale storage. The food production areas are subject to lots of moisture as well as condensation due to them all having washdown areas. Just like the cold stores and freezer areas, water ingress can cause issues to electronic devices, so it was advisable not to use point detection unless it was IP rated. By offering aspirating detection systems in these areas, water doesn't create the same problems for this type of system due to the aspirating smoke detector being installed outside a moisture-rich environment.

The Aftercare

Since completion of the distribution centre, James Hall has taken out a fully comprehensive service package. The package offers a 24 hour a day 365 days a year reactive call out service to ensure the systems installed stay well maintained and fault free for years to come.