Waste Recycling
Grundon Waste Management Ltd.
Preventive Fire Protection

Case study
Two successful companies.

Grundon and Rosenbauer – pioneers in their industries.

Grundon – the largest family-run provider of waste management and environmental solutions in Great Britain.

Grundon Waste Management Ltd. is one of the leading recycling companies in Great Britain. The mid-size family-owned company from Oxfordshire-London is recognized as a pioneer in the recycling industry for modern solutions. Organic and medical waste as well as hazardous materials are disposed of or recycled in state-of-the-art processing plants.

With integrated environmental solutions at sites throughout southern England, Grundon minimises the long-term economic and environmental impact of waste management. In terms of waste recycling, Grundon is active in the extraction and production of materials and minerals for the construction, landscaping and leisure sectors.
The task: to protect sensitive areas and materials from fire

Located in Colnbrook near Heathrow International Airport, Grundon operates a large materials recovery facility (MRF) that processes and prepares paper, cardboard, metal and plastics such as polyethylene (PET) and polypropylene (PP). The materials are highly flammable and often highly self-igniting. The delivery hall in which the materials and the storage containers that receive the waste after sorting are handled and processed are particularly at risk. A fire would destroy the expensive plant, cause prolonged downtime and endanger humans and the environment. To minimise the risk of fire due to the high fire load, Rosenbauer developed a complete stationary solution for the MRF.

Control room

Extinguishing system for protecting the delivery area and the material storage

Strategic planning

To be able to quickly install the fire protection system on-site, Rosenbauer completely pre-assembled the required equipment (pump, section valves and electrical equipment with fire alarm system) in a container at their plant in Austria. The system was then installed at Grundon in just 13 days by Rosenbauer technicians.

System technology in the container

Alarm valves
The solution: early detection via infrared and fast cooling with foam

At the heart of the Rosenbauer extinguishing system is the combination of infrared temperature monitoring and an RM15 turret extinguishing system with foam proportioning. If predefined temperature limits are exceeded, the system is activated and the detected hotspot is cooled with foam for up to two minutes at a time. This prevents fires from breaking out. In addition, cameras continuously monitor the sorting bunkers into which the hand-sorted recycling material is dropped from above, the delivery area and parts of the processing area.

The storage containers are also equipped with spray nozzles, which are triggered by flame detectors. When activated, the water-foam mixture is evenly distributed in the containers and the burning material thereby cut off from oxygen. The flames are smothered and the materials are cooled sustainably.

The stationary fire protection system from Rosenbauer also helps to fulfil the rules of the "Fire Prevention Plan" from the responsible environmental agency, which mandates regular temperature monitoring for such operations in the recycling industry.

Space-optimized concept

Due to a nationwide water shortage in industrial zones, supplying water to the extinguishing system was an additional challenge. Rosenbauer solved the problem by using two adapted containers that hold up to 28,000 litres of water. Since both containers can be stacked on top of each other, the scarce space on the company premises is used more efficiently.
Rosenbauer is fire protection. For more than 150 years. Today, Rosenbauer is one of the leading global manufacturers of municipal fire fighting vehicles, aerial rescue devices, special airport and industrial vehicles as well as stationary and semi-stationary extinguishing systems. Professional fire departments, voluntary fire departments, commercial and airport fire brigades as well as planning and engineering offices around the globe trust the cutting edge technological solutions from Rosenbauer.

Rosenbauer invests in research and development for preventive fire protection and applies its entire knowledge of active fire fighting. Rosenbauer develops and produces key elements of the extinguishing technology and the extinguishing agent delivery in-house, thus guaranteeing high quality and safety in every detail.

Technical details of the extinguishing system for Grundon

- Water supply: 28,000 l
- Foam proportioning system: FireDos FD2500
- Foam compound: AFFF 1%

Extinguishing system for two storage containers
- One flame detector per container
- Output of the water-foam mixture via 15 extinguishing nozzles
- Application rate: approx. 1,220 l/min
- Manual triggering possible

Delivery area extinguishing system
- Extinguishing system with RM15C turret and temperature monitoring
- Hotspot detection and targeted extinguishing agent use
- Turret output rate: 1,500 l/min
- Rotation range of the turret: 360°
- Extinguishing agent: foam
Statements.

"After intensive research and evaluating various solutions, I came across the Rosenbauer system and set out to work with them to develop a system for our plant in Colnbrook. The system is designed to handle fires at a very early stage. Foam can reduce the spread of fire. Throw ranges of up to 60 m with targeted extinguishing agent application ensures that the combustible material is safely reached over the entire length of our hall. The Rosenbauer technicians were competent and the entire installation went smoothly thanks to the professionalism and expertise of the Rosenbauer team."

Alec Powell, Group and Resource Manager for the material recovery plant

"My role in the department is primarily maintenance. I am also the fire safety officer for the department. It is extremely reassuring to know that if a fire breaks out in one of the two zones, it will be detected quickly and countermeasures are implemented automatically – 24 hours a day. The local fire department visits regularly to make sure they are familiar with our facility. The fire department is very impressed by the Rosenbauer extinguishing system and is confident it will reduce the negative impacts on life, the environment and costs in case of fire.

Mark Shore, supervisor of the material recovery plant