



APPLICATION STORY



FLIR Systems PathFindIR® improves safety and process control at organic waste treatment plant.

The FLIR Systems PathFindIR is being widely used for driver vision enhancement. But the PathFindIR does not only produce a crisp image in the darkest of nights. It can also see through fog and smoke. Being a thermal imaging camera it also clearly distincts hot and cold areas. Exactly these qualities make the PathFindIR a great tool for Orgaworld.

Orgaworld: organic waste treatment

Based in the Netherlands, Orgaworld is an innovative and fast growing company in the field of organic waste treatment. It focuses on the processing of organic waste to produce final products such as energy, fuels and agricultural products.

Orgaworld operates five different plants in the Netherlands. All the plants are certified according to the latest and most advanced standards for quality, safety and environmental protection. Moreover, all the plants have food-safety approvals.

Recent expansions led to the opening of a plant in Ontario, Canada. A second Canadian plant is under construction.

One of the plants is located in Drachten, in the north of the Netherlands. The Drachten plant is a fully closed aerobic composting plant. Its processing capacity is 70,000 tons on an annual basis.

Fermentation at high temperatures produces damp

"Here in Drachten we are turning organic waste into compost," explains Klaas Brinkman, site manager at Orgaworld Drachten. "Before we can turn the waste into compost, it needs to ferment a couple of weeks. In a big hangar, we have several separate areas in which this is being done."

"During the fermentation process the heat rises to more than 60°C inside the waste piles. The temperature is being controlled continuously and records are being kept. The inside of the waste needs to have this high temperature in order to kill harmful bacteria. After all, the waste will become compost and all harmful material needs to be eliminated from it."

"In order to make sure that all the waste is submitted to this temperature, we need to turn the piles regularly. The colder waste on the outside is turned around to the inside of the pile and the hot inside becomes the outside."

The FLIR Systems PathfindIR is installed on a small mast.



The thermal images of the FLIR Systems PathFindIR are displayed on the same LCD as the images of the reversing camera. Note the hot spot in the thermal image which clearly shows a part of the waste pile that was turned.





Overview of the hangar filled with organic waste.

"The fermentation process produces a lot of damp. This damp is being reduced by recycling air inside the plant. In winter time, the temperature contrast of the waste with the temperature of the environment is high. Sometimes the visibility can be less, especially in the morning."

Safety and process control

"We are operating several wheel loaders in the hangar. They are bringing the waste that comes in to its location and turn around the piles regularly. They are also being used to feed the grinders that turn the waste into compost at the end of the fermentation process."

"Our experienced wheel loader operators know how to handle the difficult conditions in the hangar. We never had any accidents inside the hangar, but safe working conditions for employees are an absolute priority at Orgaworld. Therefore we are continuously investing in any equipment that can make these working conditions even safer than they already are. There are several options to improve visibility. For example air circulation in the hangar or the installation of the FLIR Systems PathFindIR."

"Another problem we faced is that we could not always clearly see which part of the waste had been turned. Once the PathFindIR was installed we experienced a positive side effect. We can now easily see which part has already been turned around."

FLIR Systems PathFindIR offers solution

"We discovered the FLIR Systems PathFindIR thanks to GrootJebbink Mobile Safety Technology," continues Klaas.

GrootJebbink is a distributor of the FLIR Systems PathFindIR in the Netherlands. They are specialized in vehicle safety technology, mobile weighing and fleet management. Safety, both on the road as well as on the worksite, is their daily care.

A wheel loader turning around the organic waste at Orgaworld.

"During a courtesy call of one of their representatives, we explained him the problem we had navigating through the smoke with our loaders. He immediately thought of the FLIR Systems PathFindIR as a possible solution. Since he had a PathFindIR installed in his car, we immediately put it through the test."

PathFindIR sees through damp and locates hot spots

"Once the car was in the hangar, it became immediately clear that the PathFindIR could be a solution for our problem. The multi-functional LCD display in the car showed us clear images of what was happening in the hangar. We could clearly see the wheel loader through the heavy damp. And equally important, we could see which parts of the waste had been turned around and which ones not. The hot parts of the waste that had just been turned around, contrasted heavily against the colder parts that still needed to be turned around. The PathFindIR could see through the damp and had proven its worth. Immediately after, we decided to purchase a FLIR Systems PathFindIR."



Mr. Klaas Brinkman, Site Manager at Orgaworld, Drachten and Mr. Peter Dekkers, Business Development Manager Transportation Products FLIR Systems.

Installing the FLIR Systems PathFindIR

"Installing a FLIR Systems PathFindIR is a fairly easy job," explains Eric Grootjebbink, General Manager of GrootJebbink Mobile Safety Technology. "It just needs to be connected to the battery of the vehicle and to a standard LCD display that accepts composite video."

"At Orgaworld we connected the PathFindIR to the same LCD that was already being used for the reversing camera. When the loader is put

in reverse, the image of the reversing camera is automatically displayed on the LCD screen. When the loader moves forward, the thermal image of the PathFindIR is being displayed. This way the driver can see if there are any obstacles in his way and equally important, he can see if he is doing a good job and turning every part of the waste."

"Initially we installed the PathFindIR on the roof of the wheel loader. When the driver signaled us that this location was not giving him an ideal field of view, we decided to put a small mast next to his cabin to mount the PathFindIR. Now the field of view of the operator and the one of the PathFindIR are almost identical."

Room for more thermal imaging cameras

"The first PathFindIR was installed as a test. We wanted to see if it would help us to do a safer and better job," continues Klaas Brinkman. "Now that it has been in operation for some time we are convinced that it is a great asset. Not only during winter when there is more damp, but during summer it helps us to see if we did not forget to turn a part of the waste as well."

"We are therefore seriously considering to expand the number of PathFindIR thermal imaging cameras. We want to equip more wheel loaders, not only here in Drachten, but in other locations as well, with it. We also want to mount one that is looking backwards. This will further improve safety."

"The PathFindIR has proven its worth at Orgaworld. It is a small investment that helps us to do a better job and is a great contribution to our safety policy," concludes Klaas.



The FLIR Systems PathfindIR installed on the wheel loader.

For more information about thermal imaging cameras or about this application, please contact:

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