

### Water quality discharge & flood alleviation system, Flanders Farm



**One of the largest fruit producers in the UK needed a solution to their water quality discharge and flood water alleviation problem. This system of treatment beds and water storage lagoon provided them with a quick and stream-lined solution.**

AC Goatham & Son are one of the main growers and suppliers of UK-grown apples. To sort and pack this quantity of fruit requires large volumes of wash water – all of which must be processed before being discharged into the local watercourse.

As Goatham have doubled the size of their facility in Kent, they needed a complete overhaul of their water treatment beds and flood storage lagoon. By increasing the size of

their plant facility to approximately 2.5 hectares in total, they have significantly increased the size of their warehousing and hard standing. During heavy rain, run-off from the roofs and hardstanding has the potential to flood neighbouring farms and run into a nearby river unless it is regulated in a storm lagoon.

### Benefits to the client:

The client has been able to solve three issues with one project: treating wash water, treating sewage effluent and regulating flood waters from site. This means saving money and time on the installation of separate treatment systems.

The new system is gravity fed so no mechanical pumps are needed and less energy is used.

Wash water must be treated before being discharged into the local watercourse to meet discharge consents. As the client already had their new facility up and running, it was important to install the treatment beds as quickly as possible. JPR were on site for 10 weeks and the system is working well with good quality water from the outflow and a regulated flow from the storm water storage lagoon.

JPR were able to work directly with the designers of the plant, [Peter Brett Associates LLP](#) (PBA) and the site agents, [Lambert and Foster](#) in addition to the designers of the water treatment system, [Haycock Environmental Consultants Limited](#), in order to put the plans into the ground so that the clients could comply with their planning conditions.

### Project details:

The project consists of:

- 1) Three treatment beds for the wash water used to wash and sort the apples before packing (apples are floated in water so that washing and grading can happen at the same time)
- 2) Treatment of the waste water from the package plant's sewage system
- 3) A replacement flood lagoon to moderate the flow off the site and provide a storage facility during heavy rainfall events.

Specifically, this involved:

- Site mobilisation
- Changing the drainage to the existing flood lagoon
- Excavating and lining the lagoons
- Installing treatment cell media
- Planting reedbeds
- Constructing all pipework

Excavating three treatment beds (image shows the levelling of the beds)



Excavating the flood storage lagoon (image shows the depth of the lagoon for the flood storage area)



## Planting the reedbeds



The designers have come up with a solution to water quality discharge and flood alleviation and JPR were able to successfully put that solution in the ground.