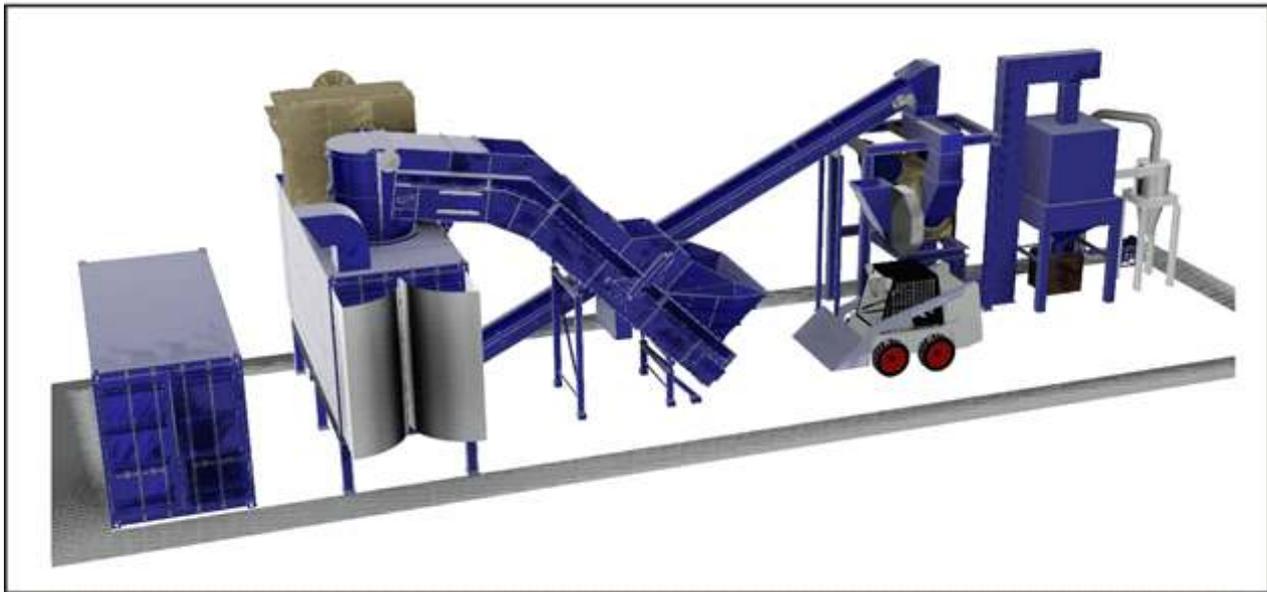


Pilot Pellet Production Plant

System Overview

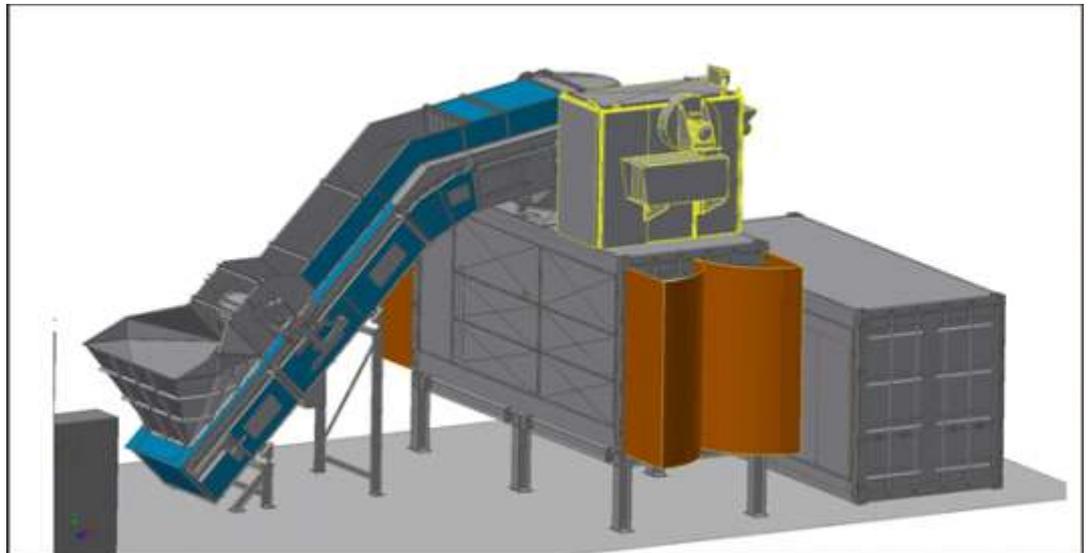
C J Waterhouse company were originally approached by Loesche Energy Systems to design and manufacture a bespoke materials handling and automation solution for their pellet production plant in California. The system was to be a pilot plant to prove the manufacturing process prior to the implementation of a full production facility.



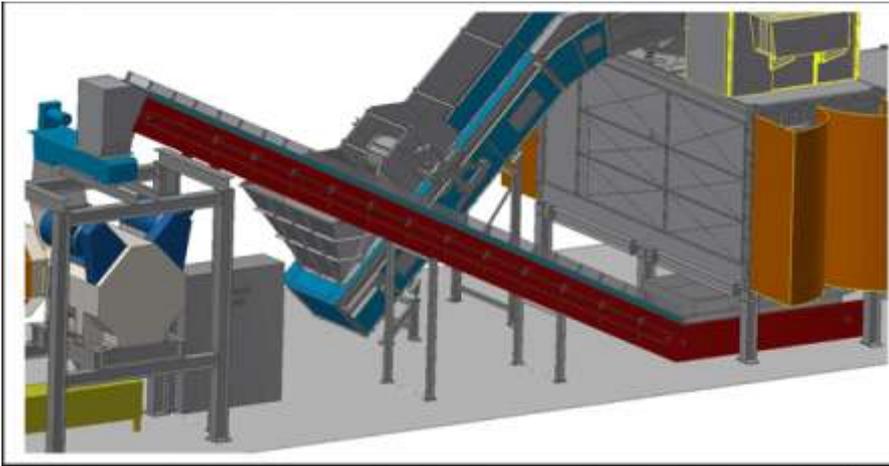
The process was to create pelletised fuel from household recycled waste comprising of polymer and fibrous materials such as paper, card and plastic packaging. The produced pellets were to be used as an energy source within the power generation industry.

Material Intake

The material intake system comprises of an inclined feed conveyor with integrated buffer hopper for manual loading of raw material via a dump truck. This conveyor feeds material into the Mobile Rocket Mill which is manufactured by Loesche's sister company ATec. The rocket mill is used to reduce the raw material particle size so as to allow the downstream processing and pellet production.



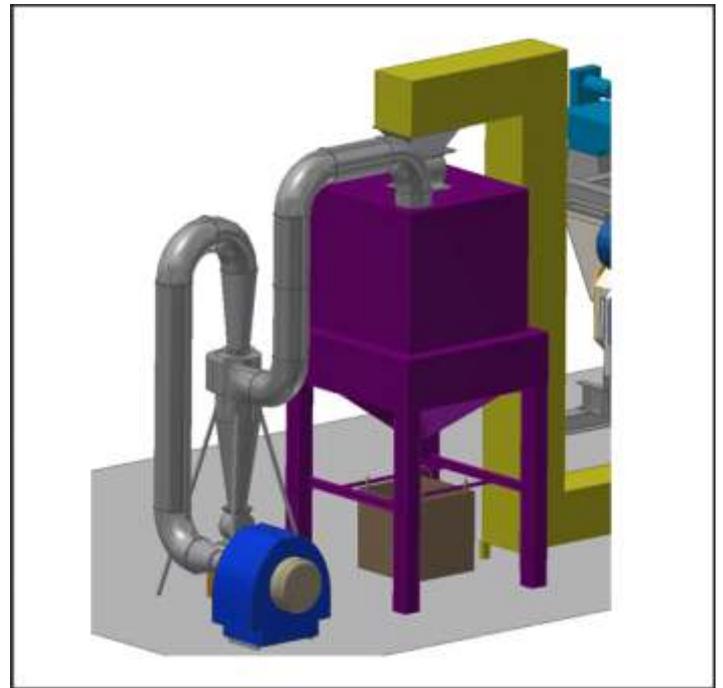
Pelletiser Feed System



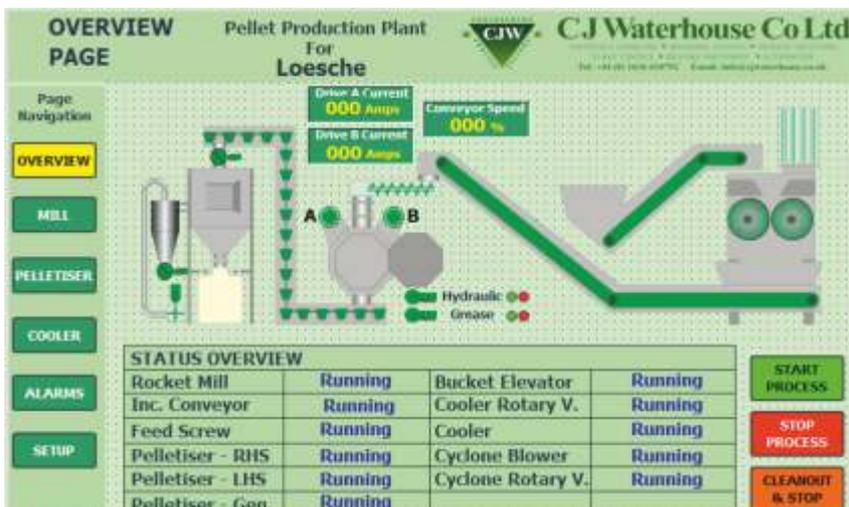
The pelletiser delivery system collects the material from the discharge of the rocket mill via a buffer hopper forming an integral part of the downstream take-off conveyor. This take-off conveyor is an inclined, flighted variable speed belt conveyor which elevates and transfers the milled material to the downstream process. The take-off conveyor discharges its contents to a twin flight screw feeder via an interface chute which directly feeds the pelletiser inlet.

Pelletiser Feed System

The finished pellets are discharged from the pelletiser into a vertical bucket elevator which transfers them to the inlet of the cooler unit. This elevator discharges the pellets into the top of the cooler unit via a rotary valve to provide a controlled flow of material. The cooler is used to dry and cool the pellets via a vacuum pump system which draws air through the unit as the pellets fall under gravity to the downstream tote bin. Extracted air drawn through the cooler is fed through a cyclone unit with a rotary discharge valve to collect and dust or small particles that may be carried with the air flow.



Control System



The materials handling control system comprises of a central automation panel housing a Siemens PLC and door mounted HMI unit. This panel provides fully automated control of the materials handling system and interfaces with the mill control panel.

The HMI display provides the operators with a live graphical representation of the plant together with presenting data and permitting system operation. In addition to this an internal Wi-Fi-link permits the HMI screens and controls to be replicated on remote laptops and tablets.