



**WSP/CoOp – Project Tone**

Arley Drive, Prescott, Knowsley, L34 4BF

## **PROPOSAL FOR TALBOTT MWE 300 BIOMASS BOILER SYSTEM AND AIR PLANTS DUST EXTRACTION SYSTEM**

Quote Ref; WSP060525-001/MQ Rev C

Date; 12<sup>th</sup> April 2026

Revision B now includes 13 benches, additional fan line and larger cyclofilter.

Revision C now includes relocation of plant to opposite side of building as per latest layout.





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## EXECUTIVE SUMMARY

We are pleased to present our proposal for the supply and installation of our Talbott MWE 300KW biomass heating system to provide low carbon heating and waste wood disposal for Project Tone at Arley Lane, Prescot.

Following review of the information provided during the design process with WSP and the client we are pleased to offer a full turnkey waste handling solution for the new factory incorporating the biomass plant, dust extraction plant, factory heating circuits and wood shredder system.

We have been advised by the designers that the site requires a 300KW heating system and the wood waste offcuts/dust produced when the factory is operational would be sufficient to support a plant of this size therefore we have allowed for supply and installation of our Talbott MWE300 biomass plant with an ATEX certified fuel silo which will handle upto 12 tonnes per week of waste throughput whilst providing upto 300KW of renewable heat for the factory.

The MWE300 biomass boiler will heat the factory building via a system of radiant panels (as specified by WSP) and integration with an AHU (Air Handling Unit) using LTHW water with a design flow temperature of 80c and a design return temperature of 60c. A summer heat dissipator will be installed externally allowing the client to burn waste continuously all year round irrespective of factory heat demand, maximising waste disposal savings and benefits for the site.

### MWE 300 biomass boiler system with heating pipework and radiant panels

The new Talbott MWE300 biomass boiler plant will utilise the site excess wood waste offcuts (chipped) and extracted dust to heat the factory areas as per WSP radiant panel/AHU design schedule with low carbon renewable heat via a "wet" pipework system. The MWE300 will burn upto 12 tonnes per week of chipboard waste material to provide 300KW of heating into the factory space. The new plant will be positioned externally in the rear yard area as per drawings agreed.

The new MWE biomass system is an advanced biomass system and comes with multiple additional automated features (such as auto-ignition, timer ignition function, automatic tube cleaning, automated grate cleaning, automated ash removal, remote internet control, 7 day timer, advanced emissions control, multiple safety circuits and more.



We have included for a new 25m<sup>3</sup> ATEX certified fuel silo. The modern Talbott fuel silo is a flat-bottomed design which is ideal for chipboard waste, it incorporates a rotary arm discharge system for automated fuel feed to the biomass boiler.

#### Gas back-up boiler

As requested by the client we have allowed for the supply and installation of a 300KW gas boiler within the biomass plantroom to act as a back-up heating system. We have allowed for the supply and installation of this. We understand that a suitable gas main will be connected to the plantroom by others to allow commissioning of the gas back-up boiler. This will be installed to act as back-up only and will not run at the same time as the biomass.

#### General heating design info

The factory heating scheme consists of various elements which can be summarised as below

1. Primary circuit from boilers to low loss distribution header.
2. Supply and installation of Baxi Gas fired back up boiler.
3. Back end biomass boiler protection via a 3-way valve
4. Pressurisation unit and expansion vessels.
5. Secondary circuit from header to zones on the site.
6. A Constant temperature circuit to the Air Handling unit
7. A constant temperature circuit to a total of four radiant panel zones as per WSP.
8. Supply and Installation of Radiant panel heaters as per WSP schedule
9. Supply and Installation of External heat dissipator
10. Heating pump control panel
11. Pipework flushing
12. Antifreeze dosing

From the information given and the drawing number 16367-P06 provided by WSP we have quoted for the installation as listed below.

#### Primary Circuit.

This consists of a flow and return pipe work system from the boiler to a low loss distribution header incorporating a shunt pump, isolation valves, commissioning set, and temperature and pressure gauges, expansion vessels and auto air valves.



#### Boiler back end protection(biomass)

There is a motorised 3 port valve to enable back end protection to the boiler which is used to allow the boiler to raise the water temperature prior to circulation through the heating system.

#### Boiler back end protection (gas).

The gas boiler has a separate small circulating pump and low loss header system self contained within its own circuit.

#### Pressurisation unit and expansion vessel

We have included for a pressurisation unit with filling loop and expansion vessel. This is supplied to ensure the system has the correct amount of water and pressure at all times and is fully automatic.

#### Factory Heating.

The heat output is 300 KW and the secondary circuit consists of a number of LPHW radiant panels to be provided by SPC as specified. These will be from their i28 range of heaters and will come complete with standard insulation . These will be located at positions shown on drawing xxx-wsp-xx-00-dr-x500101 to suit . All units to be fitted at high level and each will incorporate isolation valves to allow maintenance as required. Please note we have not allowed for any control valves on this circuit.

#### Air Handling unit pipework

We have allowed to run flow and return pipework from the low loss header in the plant room through to the AHU which is located at high level in between gridline 3-4 AB on the WSP drawing. We will provide isolation valves prior to the coil connection of the unit. We have not allowed any control valves on this circuit

#### External Dissipator/Heat Dump

We have also allowed for the supply and installation of an external Summer dissipator heat dump unit. This is designed to dump any excess heat that cannot be used within the main heating system or when the space is up to temperature. This will ensure the boiler does not overheat when demand is low. The unit is normally used fully in summer operation allowing the boiler to burn



excess waste wood materials for disposal without supplying heat to the factory. Provision of the dissipator along with the MWE control system negates the requirement for a buffer tank.

#### Control Panel.

We have allowed for a control panel to control the system pumps located within the biomass plantroom. This will include 3 Grundfos magna 3 pumps (one per circuit) to supply water at the correct flow rates to, Radiant circuit, AHU circuit and Dissipator circuit. The pumps are controlled by a hold off stat to ensure the correct water temperature in the low loss header prior to feeding the heating circuits and also a return stat to bring on the dissipator should all heat produced not be used.

#### General.

All pipework to be stainless steel crimped connections with adaptors to headers and heaters in screwed. This means we have no hot works on site with welding.

#### Budget cost for 4 zone controls

As requested we have included a provisional sum for the supply and installation of 4 zone control on the heating circuit, wired back to a central control panel in the biomass plantroom. This will consist of 4 x 3port valves and associated wiring/panel.

#### Bulldog BD-800 Wood shredder system

Additionally to the biomass heating plant we have allowed for supply and installation of our Bulldog BD-800 wood shredder. As agreed with the client in December the new shredder will be installed to the front of the factory and a simple weather shelter will be erected above it. Moving the shredder to this location has operational benefits for the factory however has increased the extraction scope with an increase "booster fan" on the extraction system to accommodate the longer run.

The Bulldog chipper range has been designed specifically for the chipping of waste wood/panel materials such as chipboard, into fuel for biomass heating plant. The Bulldog has capacity for a greater level of offcuts than currently created, allowing for additional material from new machinery/factory growth as the client settles into the new site.



Shredded material will be collected along with the extracted dust by the extraction transfer loop as discussed during our meeting, before being transferred together into the ATEX fuel silo for automatic feeding to the boiler.

Air Plants Dust Extraction System Quote ref Q14245(V3)

We have provided accompanying dust extraction quote ref Q14245 (V3), dated 27<sup>th</sup> March 2026 to inform the full dust extraction technical specification along with the drawings agreed.

The costs for the dust extraction system are within this Talbot's document to allow one single order with the Q14245(V3) document provided for specification detail only.

This version of the quote now includes the additional 13 workbenches and increased filter size to accommodate the additional air volume/extraction requirements, also now with the plant in the new location.

We have assumed that the optional acoustic enclosures for the fans will be required and have allowed for them within our grand total below.





### TALBOTT MWE 300 BIOMASS BOILER FEATURES

The Talbott MWE (Modern Wood Energy) boiler is a fully automatic system with a range of advanced features allowing unparalleled levels of biomass fuel flexibility coupled with ease of operation, and high efficiency. Key features of the MWE boiler include:

- Designed and manufactured in the UK specifically for biomass fuels arising from joinery & furniture production in the woodworking industries
- Modern PLC controls with large colour touch screen HMI, including full remote monitoring and maintenance via a LAN connection
- Built in back end, buffer tank and shunt pump control eliminate the need for external control panels
- Inverter controlled primary, secondary, and flue fans. Negative pressure controlled combustion chamber ensures safe operation in all conditions
- Automatic heat exchanger cleaning by compressed air maintains efficiency
- Twin zone moving grate with large burning area made from long life high chrome cast iron grate bars, with split three zone primary air control
- Water cooled combustion grate for burning of high ash fuels. Avoids clinker formation and extends life of the combustion grate by reducing temperatures. Allows high efficiency burning of MDF and chipboard residues
- Moving grate conveys ashes to the ash screw, which removes them to an external ash bin. Optional additional augers can elevate ash to an external skip.
- Twin electric automatic Ignition lights the fuel from underneath the grate, ensuring a good flame and a reliable boiler start without overfilling. 3 stage ignition control allows precise configuration to suit any fuel.
- Lambda control regulates fuelling to compensate for variation in fuel feed and maximise efficiency. Short term adjustments are made by altering the air supply rate, while longer term corrections are made to the fuel feeding rate. Unique lambda cleaning system using compressed air allows the use of dusty fuels and extends the life of the sensor
- Flue gas re-circulation allows the use of normal wood, and also the dry high calorific fuels such as MDF and chipboard residues. This feature keeps NOx emissions low on high Nitrogen fuels such as MDF and chipboard. Restricts furnace temperatures to safe levels
- Fully brick lined combustion chamber ensure high temperature burn and ultra low emissions, even when burning MDF and chipboard residues.
- Primary and secondary air pre-heating
- Air cooled combustion chamber with low surface temperatures minimises heat loss and therefore maximises efficiency. This also reduces wear and tear on the ceramic walls.
- ATEX certified fuel silo – Designed for safety



## ABOUT TALBOTT'S AND AIR PLANTS

Talbott's Biomass Energy Systems Ltd have been at the forefront of the biomass and wood heating industry in the UK for over 45 years. Since the 1970's we have completed more than 5500 installations and continue to develop innovative heating and wood waste solutions. Talbott's are a subsidiary of Air Plants Dust Extraction Ltd who we will work with to deliver aspects of this project.

Talbott's and Air Plants are proud to be part of the Smith Brothers Group of companies, which has been established for over 125 years. As such we are pleased to offer a truly excellent turnkey solution for any wood heating project include dust extraction, hydronic heating systems and our Talbott range of biomass boilers, Bulldog wood shredders and wood-fuelled heaters, which are manufactured in the UK to the highest quality standards.





## COST SUMMARY

| Product description                                                                                                                                                                     | Cost summary |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| Talbot MWE 300 biomass boiler system including ancillaries                                                                                                                              |              |
| Talbot ATEX certified fuel silo system with flat bottom fuel handling (3m diameter x 2 tier)                                                                                            |              |
| Supply and installation of stainless steel insulated flue system to comply with Building regs Part J                                                                                    | ✓            |
| Touchscreen control interface with PLC control (remote internet web access functionality included)                                                                                      | ✓            |
| Automatic ignition system (timer/push button etc)                                                                                                                                       | ✓            |
| Automatic de-ashing / cleaning systems                                                                                                                                                  | ✓            |
| Automatic heat exchange cleaning for max efficiency                                                                                                                                     | ✓            |
| Flue gas recirculation system (fully modulating)                                                                                                                                        | ✓            |
| Flue gas soot abatement plant (multi-cyclone)                                                                                                                                           | ✓            |
| Mechanical installation of boiler                                                                                                                                                       | ✓            |
| Electrical installation of boiler (field wiring)                                                                                                                                        | ✓            |
| Delivery and installation of plant and equipment                                                                                                                                        | ✓            |
| Commissioning and documentation                                                                                                                                                         | ✓            |
| Operator training session by commissioning engineer                                                                                                                                     | ✓            |
| Plantroom mechanical pipework inc low loss header, back-end protection circuit, pumps, gauges, mixing valve, heat meter, pressurisation plant. Spec as per APH doc attached as appendix |              |
| Supply and install 300KW gas back-up boiler in plantroom                                                                                                                                | ✓            |
| 4 zone control valves for radiant panels as described                                                                                                                                   |              |
| Supply and installation of factory heating pipework and radiant panels to WSP design, flow and return connection to AHU                                                                 | ✓            |
| Bulldog BD-800 wood shredder with RV stand and spill plates                                                                                                                             |              |
| Air Plants Dust Extraction system as per Q14245 (12/1/26) (including optional acoustic enclosures)                                                                                      |              |
| <b>TOTAL PROJECT COST</b>                                                                                                                                                               |              |



## Payment Terms and notable exclusions

### Notable Exclusions

1. Connection of Utilities
  - Suitable isolated mains electrical supplies to various items (schedule to be provided by Talbot's)
  - Internet connection to MWE control panel
  - Mains water supply to plantroom area
  - Compressed air connection required 24hrs a day for cleaning system(s)
  - Suitable gas supply to plantroom
  - Exclusions as per accompanying AP quote ref Q15245(v3) to be noted
2. Plant Hire
  - Crane contract lift to offload and position on delivery as required
  - Cherry Picker/Scissor lift for the erection of flue, silo, dust extraction and associated parts externally
  - Use of forklift truck for offloading equipment on delivery
  - Scissor lift required for installation of ductwork/pipework internally
3. Building Works
  - A suitable concrete base
  - Builders work in preparation and sealing of holes through building fabric for pipe work to run through
  - Pipe work lagging if required
  - Any works involving asbestos
  - A suitable 4 sided enclosure to protect biomass plant from weather
  - Skips for removal of waste during construction
4. Permits and Planning
  - It's the client's responsibility to ensure any relevant permits or planning consents are obtained and complied with.
5. Specialist Requirements (Where Applicable)
  - Out of hours working if required.
  - Air Handling Unit not included within this quotation.
  - Heatloss calculations and design work as per WSP specifications/design
6. Fuel Compliancy
  - It is the clients responsibility to ensure fuel being used in the biomass system is of the correct specification as listed in our technical accompaniment to be provided alongside this proposal.

### Payment Terms

30% deposit with order

65% payment no later than 1 week prior to scheduled dispatch date

5% final payment no later than 1 week following the first time the boiler is lit

Please note that this quotation is valid for 30 days only  
E&OE





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