Your Air Source Heat Pump Design and Proposal

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Reference:	BAM001
Date:	18.06.25

Thank you for requesting a proposal for an air source heat pump system from ELT Heat. Following our discussions and calculations we are pleased to summarise our findings and recommendations below:

Heat Loss

Your property has a total heat loss of:

3.37 kW

This is the calculated amount of heat energy that would be required each hour to keep your property at a constant temperature when it is -2°c outside. This measure allows us to understand what size heat pump will be required to keep your property comfortably warm at all times of year.

Total Heat Requirement

The total heat energy required by your property in a year is:

11066 kWh

This includes the heat necessary to provide adequate heating to all areas of your home and to keep you furnished with useable hot water at all times.

If your current boiler is 80% efficient it will burn approximately **13,833 kWh** of fossil fuel energy each year.

Heat Pump

Your recommended heat pump is:

5kW Samsung Gen6 EHS R32

This is based upon your property's heat loss and our discussions about the best product fit for your requirements.

Heat Pump Efficiency

Your selected heat pump is expected to deliver **3.35 kWh** of heat for every 1kWh of electrical energy it consumes.

This efficiency measure, called SCOP, is seasonally-adjusted, meaning the performance across all seasons is taken into account.

Energy Bill Impact

The amount you can expect to save on your energy bills in the first year is:

£6.05

This is based upon an assumption you pay the current Ofgem-set price cap for each of the energy your house uses. These are currently:

5.48p/ kWh gas
22.36p / kWh electricity

Energy bill savings will **increase** as you **lower** your cost of electricity.

For example if you take advantage of available tariffs and your effective cost of electricity is lowered to **17p**, then your first year's energy bill saving would increase to **£186.31** all else being equal.

Total Cost

As outlined in the detailed quotation below, the total payable by you is:

£4,605

This is the total project cost after the application of £7,500 of Boiler Upgrade Scheme funding is applied.

Future Energy Consumed

With your new heat pump you will have all the heat you require whilst consuming just **3,363 kWh** of electrical energy.

This is based upon the heat requirement of your property and heat pump's SCOP.

CO_2 Saving

Your annual CO_2 emmissions from the heating and hot water requirements of your home are expected to fall from approximately:

2.9 tonnes to 0.9 tonnes

This is based upon the assumption that 1kWh of gas accounts for 0.21kg of CO_2 emmissions and 1kWh of electricity accounts for 0.275kg of CO_2 emmissions, on average.

Next up: Your detailed room by room heat loss calculations are shown below, together with recommendations for radiator replacement where the calculations show necessary.

Room by Room Heat Losses and Radiators

Room	Heat Loss	Target Temp	Type	Height	Length	Output	Type	Height	Length	Output	Type	Height	Length	Output	Heat Output	% of Heat Loss
Kitchen	215	18				-				-				-	-	-
Hallway 1	100	18	K1	750	500	292				-				-	292	292%
Living Room	607	21	K2	1,800	450	898				-				-	898	148%
Dining Room	815	21	K2	1,800	450	898				-				-	898	110%
Laundry Room	209	18				-				-				-	-	-
Hallway 2	35	18	K1	700	480	265				-				-	265	756%
Bedroom 3	339	18	K2	600	1,000	864				-				-	864	255%
Bathroom	**440**	**22**	**K1**	**700**	**500**	**228**				**-**				**-**	**228**	**52%**
Bedroom 2	142	18	K1	700	1,100	606				-				-	606	427%
Bedroom 1	321	18	K1	700	1,450	799				-				-	799	249%
Store Room	- 16	18				-				-				-	-	-
Hallway 3	162	18				-				-				-	-	-

Total Heat Loss at Design:	**3,369**

RECOMMENDED CHANGES

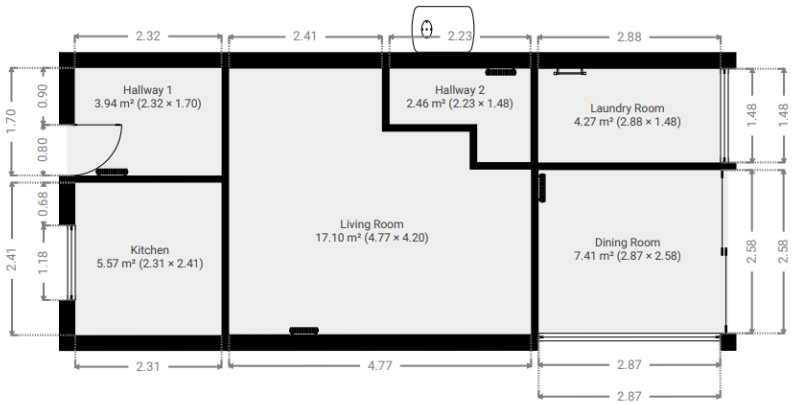
Room	Heat Loss	Target Temp	Type	Height	Length	Output	% of Heat Loss	Temp at Design	Price
Bathroom	440	22	Duel - Fuel	450	750	300	68%	15	£202.46
								Total:	**£202.46**

Next up: The design if your system is shown below. The heat pump outdoor unit has been sited to comply with all necessary performance measures required by the manufacturer, in addition to meeting regulatory standards on noise and visual impact, so as to preserve the amenity of the area. Where heat pump placement necessitates planning permission we will assist you in the process. It is your responsibility to obtain planning.

Heat Pump and Hot Water Cylinder Placement

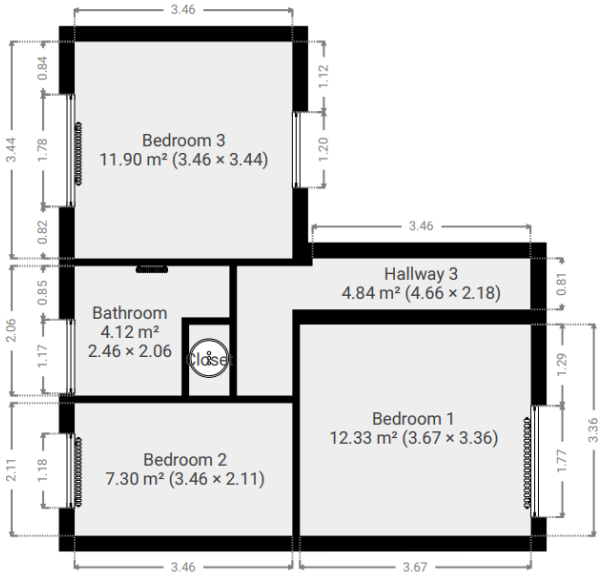
▼ **Ground Floor**

TOTAL AREA: 40.71 m² · LIVING AREA: 40.71 m² · ROOMS: 6



▼ **1st Floor**

TOTAL AREA: 41.21 m² · LIVING AREA: 41.21 m² · ROOMS: 6



Next up: Your project quotation based upon the current design. This may change with any amendments to the design made in consultation with you. We will issue you a final quotation with full terms and conditions once the design is in final form.

Heat pump quotation

Quote

GOODS	
Heat Pump and Controls	£2,891.36
Hot Water Cylinder	£1,151.25
Mechanical and electrical ancillary materials	£2,999.79
Radiators	£202.46
Total Goods	**£7,244.86**

SERVICES	
System Design	£395.00
Mechanical and electrical engineering	£3,900.00
Project management, testing, commissioning & registration	£495.00
Total Services	**£4,790.00**

Goods and Services Sub-Total	**£12,034.86**
Delivery	£70.00
VAT	£0.00
TOTAL PROJECT	**£12,104.86**

Our intention is to give you a full and clear cost for the installation of the system. Providing nothing unforeseen should occur the only additional costs would be those associated with the Energy Performance Certificate (if not included above) and any planning-related issues should they be required.

The Total Project Cost payable by you after £7,500 Boiler Updage Scheme Funding is:

£4,604.86

Our team are available to discuss any questions you may have about this proposal, including any queries on the installation process, timeline and next steps.