**RenewEV Ltd.**

Chippenham Town Council Net Zero Initiative:

Stanley Park Sports Ground

**Air Source Heat Pump Specification**

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# Aim

The purpose of this specification document is to provide sufficient information to enable potential bidders to submit a full quotation to Chippenham Town Council for the supply, installation and commissioning of a turnkey air source heat pump (ASHP) system at Stanley Park Sports Ground.

The intention of this project is to deliver cost savings and reduce the dependency of fossil fuels at Stanley Park, by replacing the current heating system of 2x 60kw gas boilers and 4x 27kw gas calorifiers.

The CTC declared a climate emergency in 2019 and has set a target of decarbonising it’s estate by 2030. A key part of the strategy is reducing the energy usage of their buildings as well as switching to sustainable sources of energy.

# Budget

£150,000 Ex VAT

# Scope of supply

## Removal and disposal of existing system

* 2No existing boilers
* 4No Calorifiers
* Ducted fan coil units and heat batteries throughout the building where applicable
* Pumps and heat exchangers if applicable
* Old radiators in non-changing rooms and defunct equipment and controls

## New system

* Hot water storage suitable for supply to all changing rooms year-round, a minimum of 2,000l heat pump ready storage. Hot water storage connected to the existing hot water infrastructure and serviced by the new ASHP system with a minimum SCoP of 2.6.
* The existing wet heating system is to be serviced by an ASHP system with a minimum SCoP of 3.0 connected to the existing network, however, where deemed necessary upgrades to network and emitters may be required.
* The existing mechanical ventilation system shall be upgraded to an MVHR Plus system with a minimum 75% heat recovery and a minimum SCoP of 4.6 connected to the existing ductwork.
* The works should include all local pipe and ductwork modifications, all associated electrical, controls, groundworks and mechanical works. Works should also include removal of all LPG infrastructure.
* A new centralised controller offering control over all areas and the ability to program set-back zones should also be included. The ASHP plant is therefore sized to meet all heating and hot water loads with air and recovered heat the source of energy.
* Metering of the electricity for the heat pumps
* All affected areas must be made good following the installation of the new systems.

*Supporting documentation and layout drawings are listed in Appendix 6.1.*

*Heat loss data and target U-values for the building are presented in Appendix 6.2 and 6.3 respectively.*

## Assumptions/Parameters

* Stanley Park sports facility that was built within the past 20 years and has been assumed to adhere to 2003 building regulations.
* On weekends there can be as many as 1,500 people using the facilities who consume large quantities of hot water by showering.
* This hot water is currently supplied using 4 calorifiers (one is currently broken) which use LPG boilers to heat the water.
* There are 12 changing rooms with 4 showers in each, design flow rate 8 l/min.
* 2,000 litres of hot water at 55°C recovery time 85 minutes (from 30°C) is sufficient to meet current demands
* All communal areas are wet radiator heated
* Storage areas are wet heated
* Planning is not required or is to be arranged by others
* Available space in the plant room for installation: 16.5m2. See Appendix 6.1 for layout drawing.

## Commissioning

All new systems must be flushed, balanced, tested, and recommissioned ready for occupation by 1st April 2023.

## Handover

A handover pack and full customer training shall be provided following the commissioning of the new system. This shall include demonstration of all operational controls and detailed maintenance scheduling. The installer shall be required to provide customer support for a minimum period of 24 months following the commissioning of the system.

## Carbon requirements

The supplier should demonstrate that refrigerants used within the newly installed plant has a low Global Warming Potential and shall ensure measures are taken reduce refrigerant leakage in installation and operation.

# MCS and Industry Standards

The design and installation shall be carried out by an MCS accredited installer to MCS standard MIS 3005.

The removal/disposal of existing plant and materials, and the installation and commissioning of the new system completed to all other relevant industry standards.

# Site visit Opportunity

Bidders will be invited to attend a site visit

# Appendix

## Drawings and documentation

* Stanley Park Landscape plan
* Stanley Park Lighting layout dwg
* Stanley Park Roof Void layout dwg
* Stanley Park Small Lighting, Power and Alarm layout dwg
* Heating System Spec (pgs 1-17)
* Boiler Room schematic
* Changing Room extraction schematic
* Heating layout plan
* Hot/Cold Water layout plan
* Ventilation additions and mods plan
* Ventilation layout plan
* Stanley Park Plant layout dwg
* Stanley Park layout dwg

## Heat loss data

|  |  |
| --- | --- |
| Heating System | LPG & Electric Heaters |
| Usable Floor Area | 717 m2 |
| Estimated Peak Building Heat Loss | 40 kW |
| Estimated Peak Hot Water Load | 145 kW |

## Target U-values

|  |  |
| --- | --- |
| Building Element | Target U-Value |
| Walls | 0.30 |
| Windows | 1.60 |
| Doors | 2.40 |
| Roof | 0.18 |
| Floor | 0.80 |