Calculator instructions and guidance notes
Humidifier Selector

The Gibbons calculators use accurate ideal gas equations to provide a realistic calculation to demonstrate the energy savings that can be achieved by installing our humidification system. The calculations required to model the operation of the air system are complex and make use of iterative mathematics.

Enthalpy Control
This method of control is very common when steam humidifiers are installed. Enthalpy control produces a lower load on the humidifiers but cannot take advantage of "free cooling" which comes from making use of more fresh air in temperate conditions. The reason for this is that the temperate air in spring and autumn is fairly dry and would put significantly more load on the humidifiers. For a steam humidifier, this would require a substantial increase in energy input.

Temperature Control
The energy required by the Gibbons system is less than 1% of that required by a steam humidifier for the same load. It is therefore possible to change the control method and take full advantage of "free cooling" that can be realised by using more fresh air in the air system. This control method removes a considerable load from the chillers and brings the building into balance

Outside air data
We have made use of MET office data for Kew in London to give an accurate representation of the outside air conditions that would be encountered by the air system. For locations where the meteorological conditions are significantly different from those at Kew, caution should be exercised with the results of the energy saving calculations.

Efficiencies
The calculator assumes that the efficiency of the heating system is 100%. The coefficient of performance for the cooling system is taken into account.

Energy Prices
The energy prices are set by the user and can be put in at today's values. It is widely reported that energy prices are set to increase for the foreseeable future. The monetary value of the savings will increase with energy prices so it is possible to see how big the savings will be in the future by adjusting the energy prices accordingly.

It is entirely normal for the Gibbons humidification system to pay for its self in one to two years. The results from the energy savings calculators are very much in line with our years of experience.

Please feel free to contact Steve Rix (07966 423165) or steve.rix@gibbonsgroup.co.uk if you should have any questions or queries.

Circular references

If a circular reference warning is displayed it is because the iteration function in Excel is not enabled. To cure the problem, enable iteration and set the maximum iterations to 1000 and the minimum change to 0.0001. We recommend that the workbook calculation is set to Automatic.

Go to File, Excel options and formulas to make these adjustments.