

Project

40-42 Hatton Garden

19/12/2019



Thank you for considering Daikin VRV systems for your project.

Daikin are the world leading manufacturer of VRV systems and HVAC products and are renowned for the highest quality products available in the market.

This report is designed to offer you a complete overview of the system from a legislative perspective and we are happy to discuss any aspects of this report with you. Please note that all information contained herein is produced based on our best current understanding of your requirements and legislative practices.

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Project Summary

System Name	Efficiencies		Annual Energy Costs	EN378 (2016)	DELCO	ECA
1. GROUND FLOOR	EER	COP	Condenser Only £ 794.58 System Including Indoor Units £ 1,327.05	Min. Room Volume 47.14 m ³	381.43 kgCO _{2e} /kW cooling capacity	COOLING ($\eta_{s,c}$) PASS
	ESEER	SEER		Min. Room Area 16.84 m ²		HEATING ($\eta_{s,h}$) PASS
	ESCoP	SCoP				
2. FIRST FLOOR	EER	COP	Condenser Only £ 1,029.38 System Including Indoor Units £ 1,627.05	Min. Room Volume 56.19 m ³	389.69 kgCO _{2e} /kW cooling capacity	COOLING ($\eta_{s,c}$) Not Compliant
	ESEER	SEER		Min. Room Area 20.07 m ²		HEATING ($\eta_{s,h}$) PASS
	ESCoP	SCoP				
3. SECOND FLOOR	EER	COP	Condenser Only £ 1,186.60 System Including Indoor Units £ 1,867.02	Min. Room Volume 56.19 m ³	340.98 kgCO _{2e} /kW cooling capacity	COOLING ($\eta_{s,c}$) Not Compliant
	ESEER	SEER		Min. Room Area 20.07 m ²		HEATING ($\eta_{s,h}$) PASS
	ESCoP	SCoP				
4. THIRD FLOOR	EER	COP	Condenser Only £ 1,186.60 System Including Indoor Units £ 1,867.02	Min. Room Volume 56.19 m ³	340.98 kgCO _{2e} /kW cooling capacity	COOLING ($\eta_{s,c}$) Not Compliant
	ESEER	SEER		Min. Room Area 20.07 m ²		HEATING ($\eta_{s,h}$) PASS
	ESCoP	SCoP				
5. FOURTH FLOOR	EER	COP	Condenser Only £ 1,186.60 System Including Indoor Units £ 1,867.02	Min. Room Volume 56.19 m ³	340.98 kgCO _{2e} /kW cooling capacity	COOLING ($\eta_{s,c}$) Not Compliant
	ESEER	SEER		Min. Room Area 20.07 m ²		HEATING ($\eta_{s,h}$) PASS
	ESCoP	SCoP				



Project Summary (Continued)

System Name	Efficiencies		Annual Energy Costs	EN378 (2016)	DELCO	ECA
6. FIFTH FLOOR	EER	COP	Condenser Only	Min. Room	381.43	COOLING (η _{s,c})
	3.63	3.98		Volume		
	ESEER	SEER	System Including Indoor	47.14 m ³	kgCO _{2e} /kW	HEATING (η _{s,h})
	7.14	3.92		Units		
	ESCoP	SCoP	£ 1,327.05	Min. Room Area	cooling capacity	
7.9	5.74	16.84 m ²				
Centralized Controllers		Calculations not available as this group doesn't contain any condensing unit				
PROJECT TOTALS	ESEER	SEER	Without Indoor Units		Eligible for 1 BREEAM credit	Project NOT Eligible for ECA
	6.82	3.88	£ 6,178.34			
	ESCoP	SCoP	With Indoor Units			
	7	5.46	£ 9,882.21			

All information is provided based on our best understanding of the appropriate legislation at the time. We endeavor to keep this tool in line with that information, however, we cannot be held responsible for any errors or omissions caused from the use of the information contained within this document



Energy Efficiency

System Name	Cooling Condition	Heating Condition	EER	CoP	ESEER	SEER	ESCoP	SCoP
1. GROUND FLOOR	VRT Cooling	VRT Heating	3.63	3.98	7.14	3.92	7.9	5.97
2. FIRST FLOOR	VRT Cooling	VRT Heating	3.74	3.98	6.79	3.89	6.45	5.14
3. SECOND FLOOR	VRT Cooling	VRT Heating	3.52	3.88	6.62	3.84	6.58	5.22
4. THIRD FLOOR	VRT Cooling	VRT Heating	3.52	3.88	6.62	3.84	6.58	5.22
5. FOURTH FLOOR	VRT Cooling	VRT Heating	3.52	3.88	6.62	3.84	6.58	5.22
6. FIFTH FLOOR	VRT Cooling	VRT Heating	3.63	3.98	7.14	3.92	7.9	5.97
Centralized Controllers	Calculations not available as this group doesn't contain any condensing unit							

These efficiency calculations are calculated according to the part load presets of Part L. As such, the efficiency calculation is based on the chiller/office application example in the Building Services Non Domestic Compliance guide and are based on performance testing according to EN14511 for cooling and EN14825 in Heating.

In the future, SEER figures will be provided according to test standard EN14825 when Lot 21 comes into force.

Please note that systems containing AHU's do not contain any elements of the AHU efficiency, please consult the technical data from the AHU to determine the specific fan power.



Annual Running Costs

System Setup

Electricity Price
0.135 £/kWh

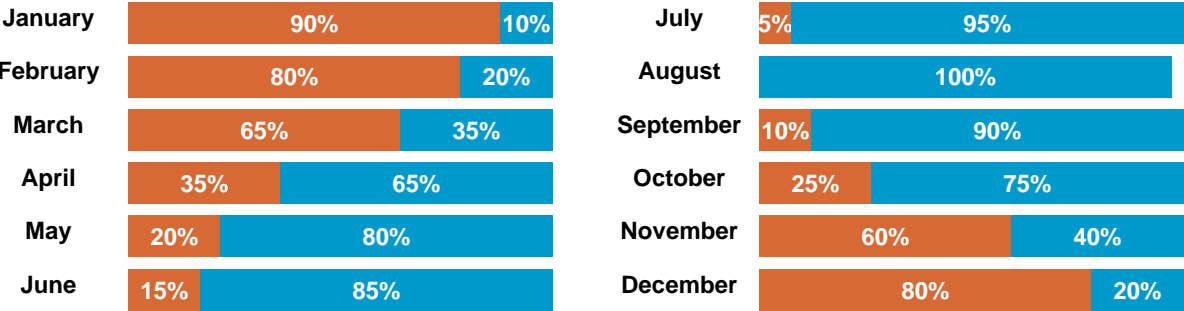
Hours / Day
10

Days / Week
5

Weeks / Year
51

Preset
Office

Heating / Cooling distribution



System Name	Condenser Only	System Including Indoor Units
1. GROUND FLOOR	£ 794.58 - 5,885.75 kWh	£ 1,327.05 - 9,830.04 kWh
2. FIRST FLOOR	£ 1,029.38 - 7,625.01 kWh	£ 1,627.05 - 12,052.22 kWh
3. SECOND FLOOR	£ 1,186.60 - 8,789.65 kWh	£ 1,867.02 - 13,829.80 kWh
4. THIRD FLOOR	£ 1,186.60 - 8,789.65 kWh	£ 1,867.02 - 13,829.80 kWh
5. FOURTH FLOOR	£ 1,186.60 - 8,789.65 kWh	£ 1,867.02 - 13,829.80 kWh
6. FIFTH FLOOR	£ 794.58 - 5,885.75 kWh	£ 1,327.05 - 9,830.04 kWh
Centralized Controllers	Calculations not available as this group doesn't contain any condensing unit	

This running cost information is estimated based on the system efficiency, monthly heat cool load variations and the selected load preset and is intended purely as a guide



EN378 (2016)

This calculation determines the minimum room size that the relevant systems pipework can travel through or terminate at. Typically this is a requirement for hotel room but can apply to other applications.

Rooms smaller than the minimum size may require refrigerant leak detection. Please consult the latest version of EN378 for full details

Daikin are able to provide leak detection options and also have the engineering ability to remove the need for leak detection entirely in many cases as we use far less refrigerant than may be found in similar systems. Please speak with a representative for more information.

System Name	Tot. Refrigerant Charge	Practical Limit	Min. Room Volume	Room Height	Min. Room Area
1. GROUND FLOOR	19.80 kg	0.42 kg/m ³	47.14 m ³	2.80 m	16.84 m ²
2. FIRST FLOOR	23.60 kg	0.42 kg/m ³	56.19 m ³	2.80 m	20.07 m ²
3. SECOND FLOOR	23.60 kg	0.42 kg/m ³	56.19 m ³	2.80 m	20.07 m ²
4. THIRD FLOOR	23.60 kg	0.42 kg/m ³	56.19 m ³	2.80 m	20.07 m ²
5. FOURTH FLOOR	23.60 kg	0.42 kg/m ³	56.19 m ³	2.80 m	20.07 m ²
6. FIFTH FLOOR	19.80 kg	0.42 kg/m ³	47.14 m ³	2.80 m	16.84 m ²
Centralized Controllers	Calculations not available as this group doesn't contain any condensing unit				



System type/name	R-number	System Capacity (kW)	Total Refrigerant Charge (kg)	Operational Life (yr)	Refrigerant global warming potential	Annual leakage rate	Annual purge release factor	Annual service release	Probability catastrophic failure	Refrigerant recovery efficiency	Refrigerant loss (operational)	Refrigerant loss (retirement)	Total lifetime refrigerant loss (kg)	CO ₂ equivalent (kg)	DELc factor
1. GROUND FLOOR	REYQ12U	33.6	19.80	15	2088	2%	0%	0%	0%	99%	5.94	0.2	6.14	12816.14	381.43
2. FIRST FLOOR	REYQ14U	39.2	23.60	15	2088	2%	0%	0%	0%	99%	7.08	0.24	7.32	15275.81	389.69
3. SECOND FLOOR	REYQ16U	44.8	23.60	15	2088	2%	0%	0%	0%	99%	7.08	0.24	7.32	15275.81	340.98
4. THIRD FLOOR	REYQ16U	44.8	23.60	15	2088	2%	0%	0%	0%	99%	7.08	0.24	7.32	15275.81	340.98
5. FOURTH FLOOR	REYQ16U	44.8	23.60	15	2088	2%	0%	0%	0%	99%	7.08	0.24	7.32	15275.81	340.98
6. FIFTH FLOOR	REYQ12U	33.6	19.80	15	2088	2%	0%	0%	0%	99%	5.94	0.2	6.14	12816.14	381.43
Centralized Controllers	Calculations not available as this group doesn't contain any condensing unit														

BES6001 Product Declaration for Daikin VRV Systems

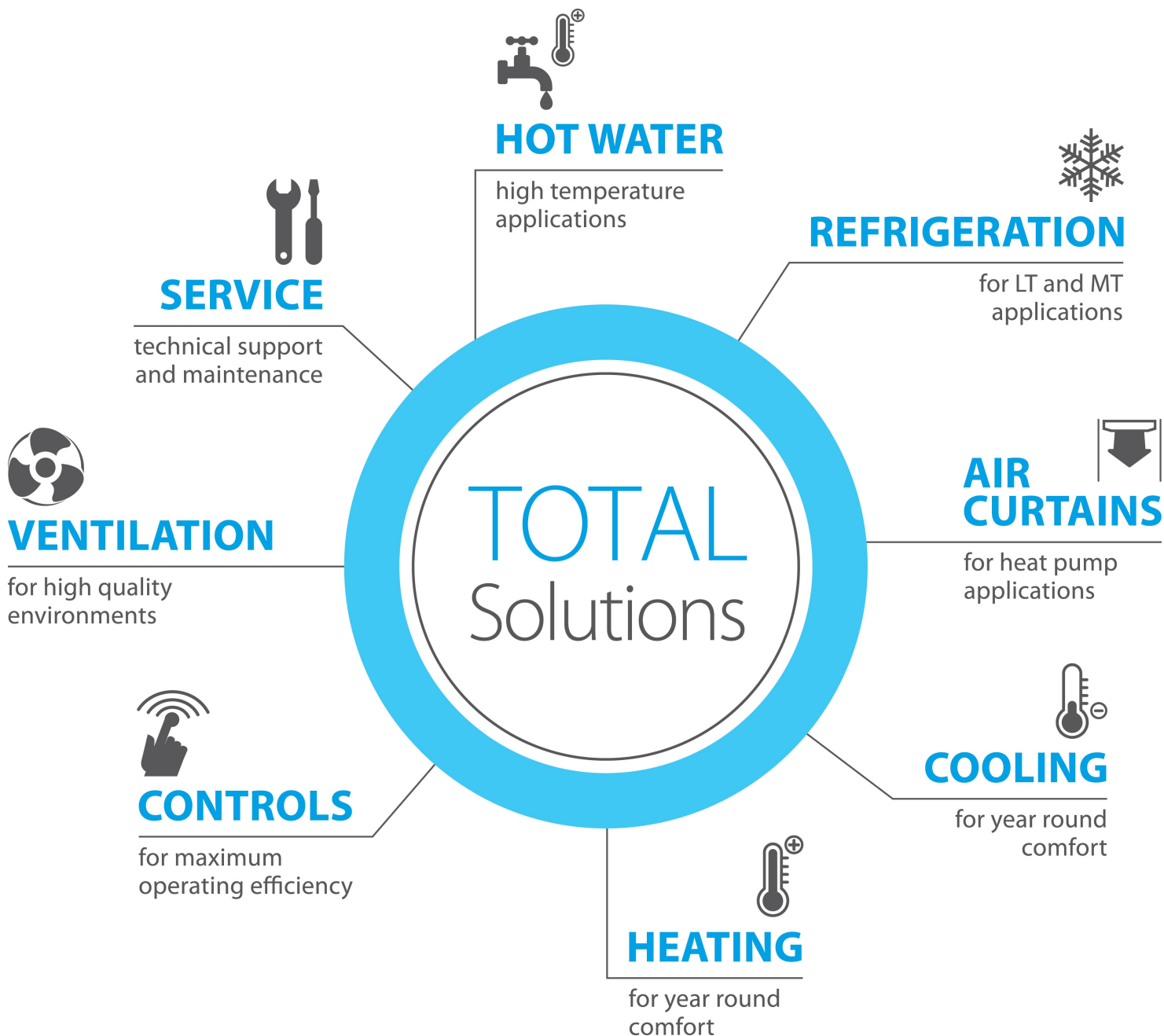
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BREEAM RSCS Score Level: 5		
BES6001 Material Report	Items	Qty.
METAL 2775.74 ^{kg}	REYQ16U	3
	REYQ14U	1
	REYQ12U	2
THERMOPLASTIC (TPO) 223.17 ^{kg}	KRCS01-4	59
	FXSQ40A	59
OTHER 396.90 ^{kg}	DCM601A51	1
	BS1Q10A	59

Daikin are the only HVAC Company worldwide to have this accreditation.

The BES6001 Standard was developed by the BRE to demonstrate responsible sourcing of materials throughout the supply chain by proving product stewardship against social, economic and environmental sustainability criteria.

This standard is recognised by BREEAM, the world's leading building rating scheme. Daikin have been rated 'Very Good' and specifiers and contractors can potentially gain additional BREEAM credits using the information provided in the statement, safe in the knowledge the products have been responsibly sourced and manufactured.



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