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Design Access Statement

for

Installation of air conditioning system and associated works to a listed building at;

The Maltings, Fobney Street, Reading, Berkshire, RG1 6BT

Introduction

This Design Statement outlines the proposal for the installation of an air conditioning system to a listed building at The Maltings, Fobney Street, Reading. This document is to be read in conjunction with the application drawings and associated reports listed below.



Existing Building Description.

The Maltings is a 3 storey building originally constructed in the late 19th century, consisting of brick construction and a mansard roof finished in clay tiles. The property was previously part of Courage's Brewery (assumed malt house) later occupied as a restaurant. The building has undergone repair works in 1990 following a fire which also introduced several modern modifications. The building has also recently been converted under a change of use application (ref 19/0619) to a BI office with practical completion taking place in November 2020.

Design approach.

The layout and location of the units has been proposed to ensure that there is no visual impact to the building externally and the original building fabric is retained. Fig 1 shows the comparison west elevation to ensure the works do not interrupt the sympathetic restoration works that have already been carried out as part of the previously approved scheme ensuring the listed building is preserved as an asset of heritage value.



Fig 1 – Comparison West elevation, before and after restoration works.

Proposed Works.

The proposed works includes installing 5no. external air conditioning condenser units located within the existing bike store structure which was included within the previous approved change of use scheme. The units will be positioned away from the existing building to avoid any visual impact to the listed building and discretely contained within powder coated metal mesh cages also providing protection to the units. No cycle storage space will be lost due to the installation of the units. The location of the proposed units is shown on drawing 265-D-03 and Fig 2.



Fig 2 – Existing bike store and proposed AC unit location.

To ensure a sufficient acoustic barrier is achieved to the neighbouring residential units, a acoustic timber board fence is to be installed to the south and west elevations between the structure of the existing bike store in front of the existing boundary line. Details of this can be found in the noise impact assessment/ acoustic report included within the application documents. The fence is to be to the height of the cycle store, no less than 1.8m tall with a surface density of no less than 15kg/m². The installation of the acoustic fence also provides a security benefit, removing the cycle storage from view of the neighbouring property and public footpath to the south.

The works also include a new below ground service route to the proposed external units the existing building. The proposed connecting services will enter the building in the location of the previous AC units prior to the change of use works. The services will then be distributed through the building via the existing service risers preventing any further disruption to the fabric of the listed building than what was previously carried out whilst occupied as a restaurant.

Internally, 2no. air conditioning units are proposed to be installed at ceiling level to the ground and first floor. At second floor, 2no. further units will be mounted on the existing trusses at high level. Details of all the proposed units can be found in appendix A.

Viability and market reaction.

The previous change of use scheme was granted permission to ensure a long term occupant/ use to the listed building to simultaneously improve the local area and site security. The property has been marketed since October 2020 and the feedback from the majority of the applicants is that air conditioning would be required in the building. The proposed system has been designed by a specialist to ensure minimal visual impact both internally and externally and to be as sympathetic as possible.

Other reports

For the submission of the planning application the following reports have been prepared:

- Noise impact assessment

The proposal is in line with the above reports.

Conclusion

The proposal aspires to retain the Listed Building with minimal alterations to the original building fabric. The proposed works will help introduce a building occupant with very little negative impact to the existing listed building whilst resulting in a positive impact for the site and local area.

The End

Appendix A – Proposed AC Unit Specifications.

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Toshiba Air Conditioning - RAV-GM Data Sheet

RAV-GM2241AT8-E Outdoor Unit

Features

- Redesigned for use with refrigerant R32
- New compressor design
- Reduced refrigerant charge - 5 kg
- Flexible, can be utilised for twin, triple and quad indoor applications
- Compact size

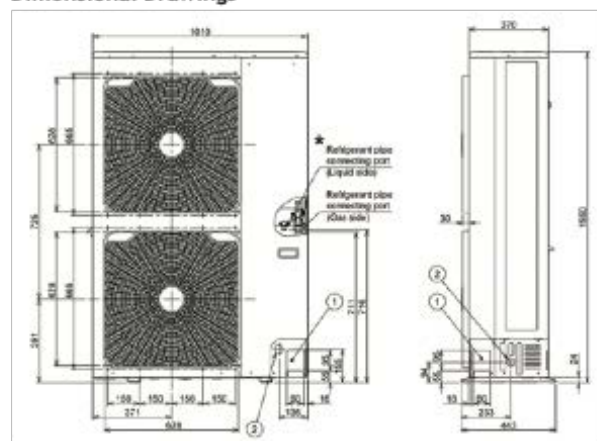


Technical Data

Model reference		RAV-GM2241AT8-E
Nominal cooling	kW	19.0
Nominal heating	kW	22.4
Maximum air flow	m³/h	9150
Maximum air flow	l/s	2541
Sound power (cool/heat)	dB(A)	76/76
Sound pressure (cool/heat)	dB(A)	58/60
Dimensions (H x W x D)	mm	1550 x 1010 x 370
Unit weight	kg	142
Power supply	V-ph-Hz	380/415-3-50
Interconnecting cable		3 core + earth
Suggested fuse size	A	16
Maximum operating current (cooling)	A	.*
Operating range, cooling	°C	-15 to 46
Operating range, heating	°C	-27 to 15
Pipe sizes (liquid - suction)	inch	1/2 - 1-1/8
Minimum/maximum pipe length	m	5/60
Maximum height difference	m	30
Pre-charge pipe length	m	30

* Waiting for published data

Dimensional Drawings



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Raising the Standards in Air Conditioning Distribution

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All UK duties are based on Cooling Indoor air temperature 22°C DB/16°C WB Outdoor air temperature 28°C DB 50% RH, high fan speed, 5 m pipe run.
Heating Indoor air temperature 20°C DB Outdoor air temperature -5°C DB 100% RH, high fan speed, 5 m pipe run. Values are based on the maximum compressor output.
Data obtained from Toshiba Air Conditioning Published Data September 2019.

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Toshiba Air Conditioning - RAV-GM Data Sheet

RAV-GM1401ATP-E Outdoor Unit

Features

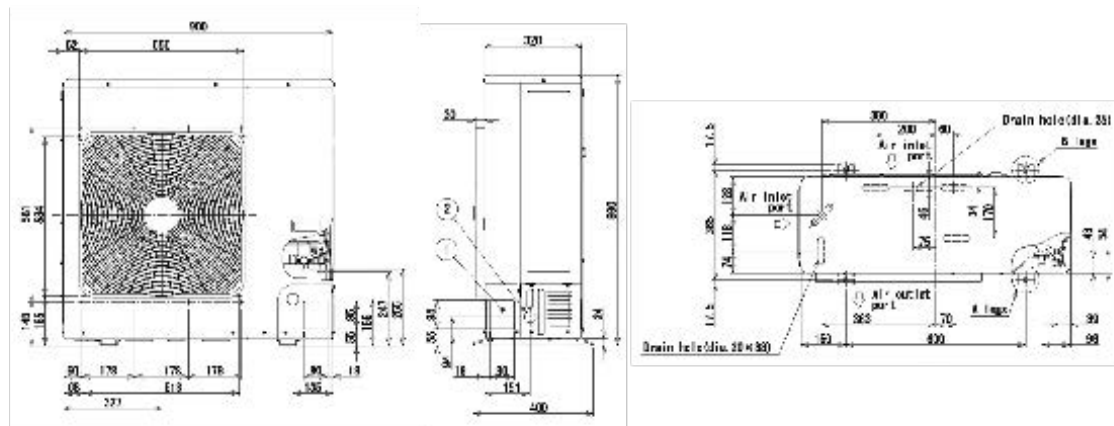
- Redesigned for use with refrigerant R32
- Wide operating range (cooling mode -15°C to +46°C)
- Auto-diagnostic function
- Flexible, can be utilised for single, twin, triple and quad indoor applications
- Compact size



Technical Data

Model reference	RAV-GM1401ATP-E		
Nominal	Cooling Capacity	kW	12.0
	Heating Capacity	kW	12.8
Operating Range	Cooling/Heating	°C	-15 to 46/-15 to 15
	Air Flow	m ³ /h - l/s	4200 - 1167
Sound	Pressure High Cooling/Heating	dB(A)	55/57
	Power High Cooling/Heating	dB(A)	70/74
Unit	Height x Width x Depth	mm	890 x 900 x 320
	Weight	kg	68
Pipe Connection	Flare Connections (gas - liquid)	inch	5/8 - 3/8
	Min.-Max. Length	m	5-50
	Maximum Height Difference	m	±30
	Drain Port Connection	mm	16
Refrigerant R32	Base Charge/Chargeless Length	kg/m	2.1/30
	Additional Charge Liquid Side	g/m	35
Run Current	Maximum	A	20.75
Power Cable	Outdoor to Indoor		3 core + earth
Power Supply	Suggested Fuse Size	V/ph/Hz-A	220-240/1/50-32

Dimensional Drawings



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Data obtained from Toshiba Air Conditioning Published Data July 2018.

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Toshiba Air Conditioning - RAV-RM Data Sheet

RAV-RM801CTP-E Ceiling-suspended

Features

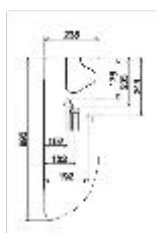
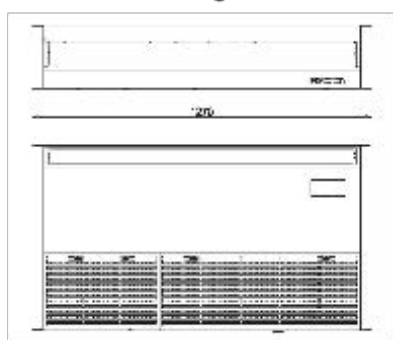
- Redesigned for use with refrigerant R32
- The best solution when no ceiling void is available
- Self-cleaning
- Air flow angle is automatically set to the most suitable setting, according to requirements



Technical Data

Model reference		RAV-RM801CTP-E	
Nominal	Cooling Capacity	kW	6.9
	Heating Capacity	kW	7.7
	EER/COP	W/W	2.9/3.62
UK	Cooling Total/Sensible	kW	6.60/5.00
	Heating	kW	5.51
Cooling EN14825	Range Min. - Max.	kW	1.5 - 7.4
	Power Input	kW	2.38
	Pdesign	kW	6.9
	SEER/Energy Efficiency Class		5.62/A+
	Seasonal Energy Consumption	kWh/a	429
Heating EN14825	Range Min. - Max.	kW	1.5 - 9.0
	Power Input	kW	2.13
	Pdesign	kW	5.10
	SCOP/Energy Efficiency Class		4.21/A+
	Seasonal Energy Consumption	kWh/a	2372
Air Flow	High - Medium - Low	l/s	392 - 278 - 208
	High - Medium - Low	m³/h	1410 - 1000 - 750
Sound	Pressure High - Medium - Low	dB(A)	41 - 36 - 29
	Power High - Medium - Low	dB(A)	56 - 51 - 44
Unit	Height x Width x Depth	mm	235 x 1270 x 690
	Weight	kg	29
Pipe Connection	Flare Connections (gas - liquid)	inch	5/8 - 3/8
	Drain Pipe Connection Upper - Lower	mm	VP26/20
Remote Controller		RBC-AMT32E	
Power Cable		Outdoor to Indoor	
		3 core + earth	

Dimensional Drawings



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Heating Indoor air temperature 20°C DB Outdoor air temperature -5°C DB 100% RH, high fan speed, 5 m pipe run. Values are based on the maximum compressor output.
Data obtained from Toshiba Air Conditioning Published Data September 2014.

Toshiba Air Conditioning - RAV-RM Data Sheet

RAV-RM801KRTP-E High-Wall



Features

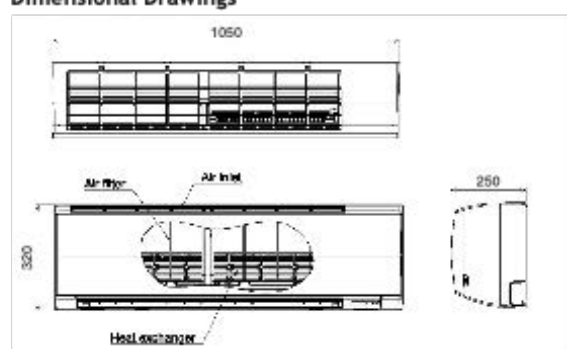
- Redesigned for use with refrigerant R32
- Self-cleaning feature
- Automatic louvre swing pattern to distribute the air evenly into the room
- Wireless remote controller with pre-set functions or hard-wired remote controller option

Technical Data

Model reference		RAV-RM801KRTP-E	
Nominal	Cooling Capacity	kW	6.7
	Heating Capacity	kW	7.7
	EER/COP	W/W	2.75/2.95
UK	Cooling Total/Sensible	kW	6.36/4.66
	Heating	kW	5.51
Cooling EN14825	Range Min. - Max.	kW	1.5 - 8.0
	Power Input	kW	2.44
	Pdesign	kW	.*
	SEER/Energy Efficiency Class		5.73/A+
	Seasonal Energy Consumption	kWh/a	.*
Heating EN14825	Range Min. - Max.	kW	1.5 - 9.0
	Power Input	kW	2.61
	Pdesign	kW	.*
	SCOP/Energy Efficiency Class		4.01/A+
	Seasonal Energy Consumption	kWh/a	.*
Air Flow	High - Medium - Low	l/s	289 - 253 - 189
	High - Medium - Low	m ³ /h	1040 - 910 - 680
Sound	Pressure High - Medium - Low	dB(A)	45 - 41 - 35
	Power High - Medium - Low	dB(A)	60 - 56 - 51
Unit	Height x Width x Depth	mm	320 x 1050 x 250
	Weight	kg	14
Pipe Connection	Flare Connections (gas - liquid)	inch	5/8 - 3/8
	Drain Pipe Connection OD/ID	mm	VP16/14
Remote Controller		WH-TA09NE (Infra-red)	
Power Cable		Outdoor to Indoor	
		3 core + earth	

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Dimensional Drawings



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