

# QUHZ-W40VA

Ecodan R744

**Monobloc** Air Source Heat Pump



## Key Features:

- Compact design
- Low noise levels
- Boiler replacement ready
- Zero carbon solution
- MELCloud Enabled

## Key Benefits:

- Minimal installation space required
- Flexible product placement
- Suitable for both new and existing homes
- Help to tackle the climate crisis
- Remote control, monitoring, maintenance and technical support

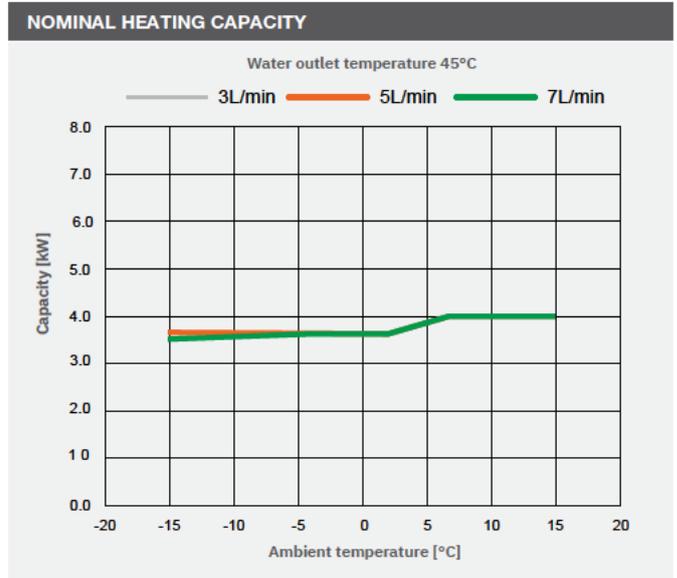


**ecodan**<sup>®</sup>  
Renewable Heating Technology

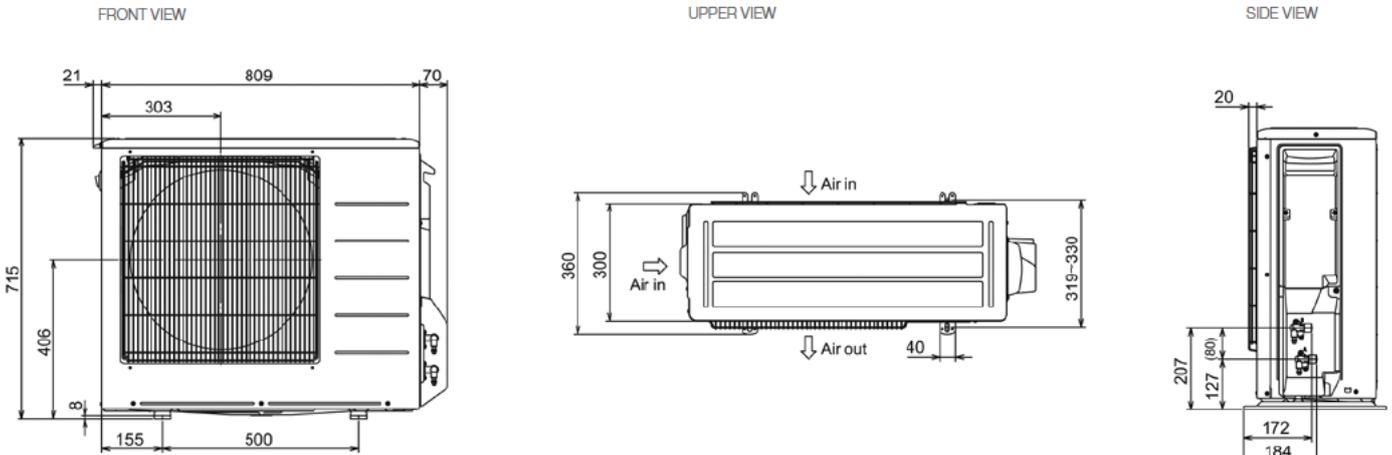
OUTDOOR UNIT		QUHZ-W40VA
HEAT PUMP COMBINATION	ErP Rating	A+
HEATER - 55°C	$\eta_s$	117%
	SCOP (MCS)	2.91
HEAT PUMP COMBINATION	ErP Rating	A
HEATER - Large Profile <sup>1</sup>	$\eta_{wh}$	129%
	COP	3.00
HEATING <sup>2</sup>	Capacity (kW)	4.32
(A-3/W55)	Power Input (kW)	2.18
	COP	1.98
OPERATING AMBIENT TEMPERATURE (°C DB)		-15 ~ +35
SOUND PRESSURE LEVEL AT 1M (dBA) <sup>3</sup>		43
SOUND POWER LEVEL (dBA) <sup>4</sup>		53
WATER DATA		
	Pipework Size (mm)	15
	Flow Rate (l/min)	3 to 8
DISTANCE BETWEEN OUTDOOR UNIT AND THERMAL STORE (m)		
	Height Difference	5
	Piping Length	15
DIMENSIONS (mm)		
	Width	809+70*5
	Depth	300+20*5
	Height	715
WEIGHT (kg)		57
ELECTRICAL DATA Powered from indoor unit		
REFRIGERANT CHARGE (kg) / CO <sub>2</sub> EQUIVALENT (t)		1.15 / 0.0015
	R744 (GWP 1)	

### Notes:

- \*1 Combination with EHPT20Q-VM2EA Thermal Store.
  - \*2 Under normal heating conditions at outdoor temp: -3°CDB / -4°CWB, outlet water temp 55°C, inlet water temp 47°C.
  - \*3 Under normal heating conditions at outdoor temp: 7°CDB / 6°CWB, outlet water temp 55°C, inlet water temp 47°C as tested to BS EN14511.
  - \*4 Sound power level tested to BS EN12102.
  - \*5 Grille or pipe cover.
  - \*6 MCB Sizes BS EN60898-2 & BS EN60947-2.
- $\eta_s$  is the seasonal space heating energy efficiency (SSHEE)  $\eta_{wh}$  is the water heating energy efficiency



### QUHZ-W40VA DIMENSIONS



All dimensions (mm)

**MITSUBISHI ELECTRIC**  
Changes for the Better

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Note: Refer to 'Installation Manual' and 'Instruction Book' for further 'Technical Information'. The fuse rating is for guidance only and please refer to the relevant databook for detailed specification. It is the responsibility of a qualified electrical/ electrical engineer to select the correct cable size and fuse rating based on current regulation and site specific conditions. Mitsubishi Electric's air conditioning equipment and heat pump systems contain a fluorinated greenhouse gas, R410A (GWP:2088), R32 (GWP:675), R407C (GWP:1774), R134a (GWP:1430), R513A (GWP:631), R454B (GWP:466), R1234ze (GWP:7) or R1234yf (GWP:4). \*These GWP values are based on Regulation (EU) No 517/2014 from IPCC 4th edition. In case of Regulation (EU) No 626/2011 from IPCC 3rd edition, these are as follows: R410A (GWP:1975), R32 (GWP:550), R407C (GWP:1650) or R134a (GWP:1300).

Effective as of May 2020





**MICROGENERATION INSTALLATION STANDARD: MCS 020**

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MCS Planning Standards for Permitted  
Development Installations of Wind  
Turbines and Air Source Heat Pumps  
on Domestic Premises

This Standard has been approved by the Steering Group of the Microgeneration Certification Scheme.

This standard was prepared by MCS, Defra, DECC and DCLG.

### **REVISION OF MICROGENERATION INSTALLATION STANDARDS**

Microgeneration Installation Standards will be revised by issue of revised editions or amendments. Details will be posted on the website at [www.mcscertified.com](http://www.mcscertified.com)

Technical or other changes which affect the requirements for the approval or certification of the product or service will result in a new issue. Minor or administrative changes (e.g. corrections of spelling and typographical errors, changes to address and copyright details, the addition of notes for clarification etc.) may be made as amendments.

The issue number will be given in decimal format with the integer part giving the issue number and the fractional part giving the number of amendments (e.g. Issue 3.2 indicates that the document is at Issue 3 with 2 amendments).

**Users of this Standard should ensure that they possess the latest issue and all amendments.**

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# 1. INTRODUCTION

- 1.1 This document sets out the MCS Planning Standard which must be complied with for domestic installations of wind turbines and air source heat pumps to be 'permitted development'.
- 1.2 It is designed to allow MCS Contractors to establish clearly whether an installation will comply with the MCS Planning Standard and includes a calculation procedure designed to confirm whether the permitted development noise limit of 42 dB  $L_{Aeq,5mins}^*$  would be met. The Standard, and the notes and calculations carried out by MCS Contractor, will also be used by local planning authorities and the MCS to verify compliance.
- 1.3 Compliance with the MCS Planning Standard on its own does not bestow permitted development rights – there are a number of other conditions and limitations which must be complied with for an installation to be permitted development. The full requirements for installations in England can be found at [www.planningportal.gov.uk](http://www.planningportal.gov.uk). Requirements in other countries may differ. MCS Contractors are advised to contact the local planning authority with any queries.
- 1.4 MCS Contractors shall be under a duty to ensure compliance with the MCS Planning Standard in relation to any installation carried out as permitted development. The MCS may impose penalties or sanctions if an MCS Contractor fails to ensure compliance with this MCS Planning Standard prior to undertaking an installation. An installation which does not meet the MCS Planning Standard may also be subject to enforcement action by the local planning authority.
- 1.5 Section 2 of this document outlines the MCS Planning Standard for the installation of a wind turbine. Section 3 outlines the MCS Planning Standard for the installation of an air source heat pump. The standards contained in these sections must be used independently of each other and only for the purposes of establishing whether a proposed installation will meet one of the requirements to be permitted development. Section 4 contains a glossary of terms.
- 1.6 MCS Certification Bodies shall be able to limit the scope of an MCS Contractor's certification against this standard if required, i.e. the MCS Certification Body will be able to certificate an MCS Contractor against either Section 2 of this document, Section 3 of this document, or both Sections 2 and 3 of this document.

\* at the assessment position (ignoring the effect of that façade)

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## 2. MCS PLANNING STANDARD FOR WIND TURBINES

2.1 The MCS Planning Standard for wind turbines is as follows:

- (a) The wind turbine product shall be certificated in accordance with MCS 006<sup>1</sup>;
- (b) The wind turbine shall be installed by an MCS Contractor certificated in accordance with MIS 3003<sup>2</sup>; and
- (c) The installation shall be carried out in compliance with the calculation procedure contained in Table 1. MCS Contractors must complete the 'result/notes' column in Table 1 for each step of the calculation procedure to show how it has been followed.

### WIND TURBINE CALCULATION PROCEDURE

- 2.2 The wind turbine calculation procedure is set out in Table 1 of this section. MCS Contractors must complete this table for the assessment position nearest to the proposed wind turbine. To follow the instructions and complete the table, MCS Contractors will need to refer to the definitions at the start of the table and Notes 1-5 set out after the table. A glossary of terms can be found in Section 4.
- 2.3 MCS Contractors must insert their results in the 'results/notes' column for each step of the calculation procedure to show how it has been followed. MCS Contractors must retain one copy of the completed table for their records and provide another copy to the client.
- 2.4 Explanation of the calculation procedure is supported by a worked example which is in italics at the end of each step in the table. In the example a free-standing wind turbine

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<sup>1</sup>The Microgeneration Certification Scheme standard MCS 006 – Issue 2.1. **Product Certification Scheme Requirements: Micro and Small Wind Turbines**. Dated 15/01/2014

<sup>2</sup>The Microgeneration Certification Scheme MCS Contractor Standard MIS 3003 – Issue 3.4. Requirements for contractors undertaking the supply, design, installation, set to work commissioning and handover of micro and small wind turbine systems. Dated 01/05/2015

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with a rotor hub height of 10.2 metres is used. The example assessment position is 108 metres away. This example is used for the purposes of illustrating the calculation procedure only.

**TABLE 1**

<p><b>Date calculation undertaken:</b></p>	
<p><b>Definitions:</b> For the purposes of this standard:</p> <ul style="list-style-type: none"> <li>• <b>Assessment position</b> means a position one metre external to the centre point of any door or window to a habitable room of a neighbouring property as measured perpendicular to the plane of the door or window.</li> <li>• <b>Habitable room</b> means a room other than a bathroom, shower room, water closet or kitchen.</li> <li>• <b>Neighbouring property.</b> Means any building used for any of the purposes of Class C of the Town and Country Planning (Use Classes) Order 1987 (as amended) (includes dwellings, houses, hotels, residential institutions and houses in multiple occupation). In instances where the proposed wind turbine will be free standing or is to be installed on a detached building within the curtilage of a block of flats, neighbouring property includes flats within the same block of flats (excluding the flat of the 'owner(s)' of the wind turbine). Building mounted wind turbines installed on blocks of flats are not permitted development.</li> </ul>	
<p><b>Description of assessment position that is nearest to the proposed wind turbine</b></p> <p>(This must be detailed enough to allow for identification, including property address and exact location of window / door opening and floor level. It is recommended that a map, sketch, photo or other record be attached to these workings.)</p>	<p><b>Slant distance to nearest assessment position. (See <u>Note 5: Slant distance</u>)</b></p>
<p><i>Example: The nearest assessment position is a ground floor south facing window on The Meadows, Sheriff Lane, Gilstead, BD16 3LS, 108 metres to the north of the proposed turbine location.</i></p>	<p>108 metres</p>

Step	Instructions	MCS contractor results / notes
1.	<p><b>Obtain the Ordinance Survey grid reference for the location of the proposed turbine. Eight character grid references must be shortened to six character grid references. See '<u>Note 1: DECC wind speed database</u>'.</b></p> <p><i>Example: The proposed wind turbine will be installed at eight character grid reference SE125391. This must be shortened to a six character grid reference (i.e. SE1239).</i></p>	STEP 1 RESULT =
2.	<p><b>Use the DECC wind speed database to obtain wind data at 10metres above ground level. See '<u>Note 1: DECC wind speed database</u>'.</b></p> <p><i>Example: The DECC wind speed database says that grid reference SE1239 is 4.3 m/s at 10 metres above ground level.</i></p>	STEP 2 RESULT =
3.	<p><b>Calculate the wind speed using the following calculation (rounding to two decimal places). See '<u>Note 2: 1.72 Figure</u>'.</b></p> <p><b>1.72 x (STEP 2 RESULT)</b></p> <p><i>Example: 1.72 x 4.3 = 7.39 m/s</i></p>	STEP 3 RESULT =
4.	<p><b>Calculate the rotor centre (hub) height of the wind turbine. See '<u>Note 3: Rotor centre (hub) height</u>'</b></p> <p><i>Example: The rotor centre (hub) height is 10.2metres.</i></p>	STEP 4 RESULT =

5.	<p>Calculate the wind speed at the rotor centre (hub) height using the following calculation (rounding to one decimal place).</p> <p><math>(\text{STEP 3 RESULT}) \times (\text{STEP 4 RESULT} / 10)^{0.2}</math></p> <p><i>Example: <math>7.39 \times (10.2/10)^{0.2} = 7.4 \text{ m/s}</math></i></p>	STEP 5 RESULT =
6.	<p>Draw a horizontal line from (STEP 5 RESULT) on the 'wind speed (m/s) at hub' side of the noise map to where the red and green lines meet. Draw a vertical line from where the red and green lines meet to the bottom of the noise map and read off the 'slant distance (m) from rotor centre' value. (<u>see Note 4: Noise label and Note 5: Slant distance</u>).</p> <p><i>Example: 'Slant distance from rotor centre' value reads off as 51 metres.</i></p>	STEP 6 RESULT =
7.	<p>Is the result from STEP 6 lower than the slant distance to the nearest assessment position?</p> <p>If <u>YES</u> - the wind turbine will comply with the permitted development noise limit and may be permitted development (subject to compliance with other permitted development limitations/conditions and parts of this standard).</p> <p>If <u>NO</u> - the wind turbine will not be permitted development. This installation may still go ahead if planning permission is granted by the local planning authority.</p>	<p>FINAL RESULT =</p> <p>YES/NO (delete as appropriate)</p>

	<p><i>Example: 51 metres is less than 108 metres. Therefore the wind turbine in this location may be permitted development (subject to compliance with other permitted development limitations/conditions).</i></p>	
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**NOTE 1: DECC WIND SPEED DATABASE (STEP 1 AND STEP 2)**

The Department of Energy and Climate Change (DECC) wind speed database can be accessed via the following link:

<https://www.gov.uk/guidance/onshore-wind-part-of-the-uks-energy-mix#windspeed-database>

The database does not contain live data but can be used for reference purposes as part of the calculation procedure.

A six character grid reference for the location of the proposed wind turbine should be used (e.g. TM1494). The section in the wind speed database titled ‘using the wind speed database’ provides advice on obtaining a grid reference. Eight character grid references (e.g. SE125391) must be shortened by removing the 5<sup>th</sup> and 8<sup>th</sup> characters (e.g. SE12~~5~~391 = SE1239),

The wind speed database should be used to obtain the annual mean wind speed data for the site. From the link above click on ‘access the interactive database online’. Input the six character grid reference in the box at the bottom of the page and click ‘find wind data’. The highlighted yellow figure in the “wind speed at 10m agl (in m/s)” box is the figure needed to fulfil Step 2.

**NOTE 2: 1.72 FIGURE (STEP 3)**

For information the factor 1.72 converts the DECC wind speed database result, which represents an annual average windspeed, to a higher windspeed typical of the windspeed that would be exceeded no more than 10% of the time.

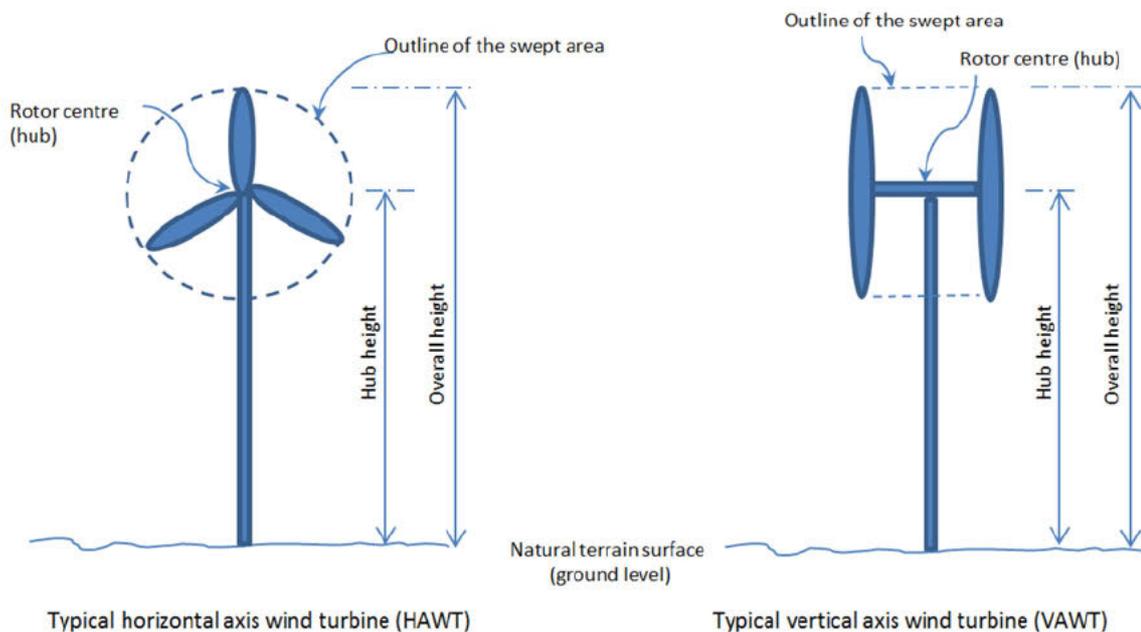
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### NOTE 3: ROTOR CENTRE (HUB) HEIGHT (STEP 4)

The rotor centre (hub) height will be the vertical distance between natural ground level and the rotor centre (hub) of the proposed wind turbine. The rotor centre (hub) is the geometric centre of the swept area of the wind turbine rotor. The rotor centre (hub) height is illustrated below.

The natural ground level should be used. This is the level of the ground immediately adjacent to the proposed wind turbine. Where the ground level is not uniform (e.g. if the ground is sloping) then the ground level is the highest part of the surface of the ground next to the proposed wind turbine (excluding any base structures). The natural ground level should not include any additional structures laid on top of the ground such as a concrete base.

Rotor centre (hub) illustration



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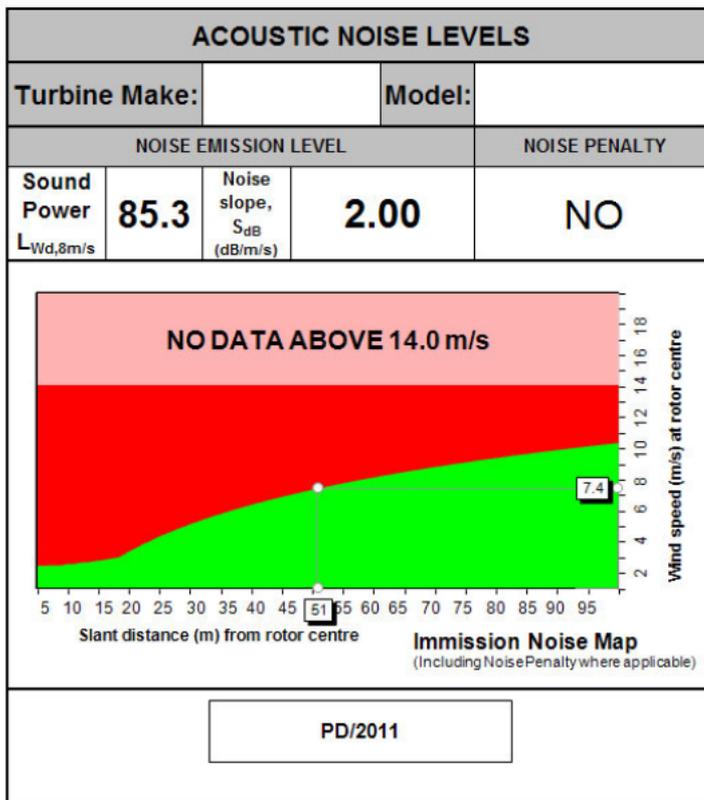
**NOTE 4: NOISE LABEL (STEPS 6 & 7)**

The noise label summarises the acoustic data for the wind turbine. Each turbine will have its own product specific noise label, which can be obtained from the manufacturer.

Each noise label contains a noise map. The noise map shows colour coded zones where sound (free field) from the wind turbine at distances from the turbine rotor centre (hub) is likely to fall within the following ranges:

- Red – greater than permitted development noise limit of 42 dB  $L_{Aeq, 5 mins}$
- Green – less than permitted development noise limit of 42 dB  $L_{Aeq, 5 mins}$

An example noise label containing a noise map is provided below. This is included for the purposes of the worked example only. The example noise map also contains a pink zone, which indicates that no data was available. Zones where data is not available should be regarded as red for the purposes of this calculation procedure. Acoustic data for the proposed wind turbine should be obtained from the product manufacturer.



The noise map can be read by drawing a horizontal line from the recorded wind speed at hub (right hand side of the map) to where the red and green lines meet. Drawing a vertical line from

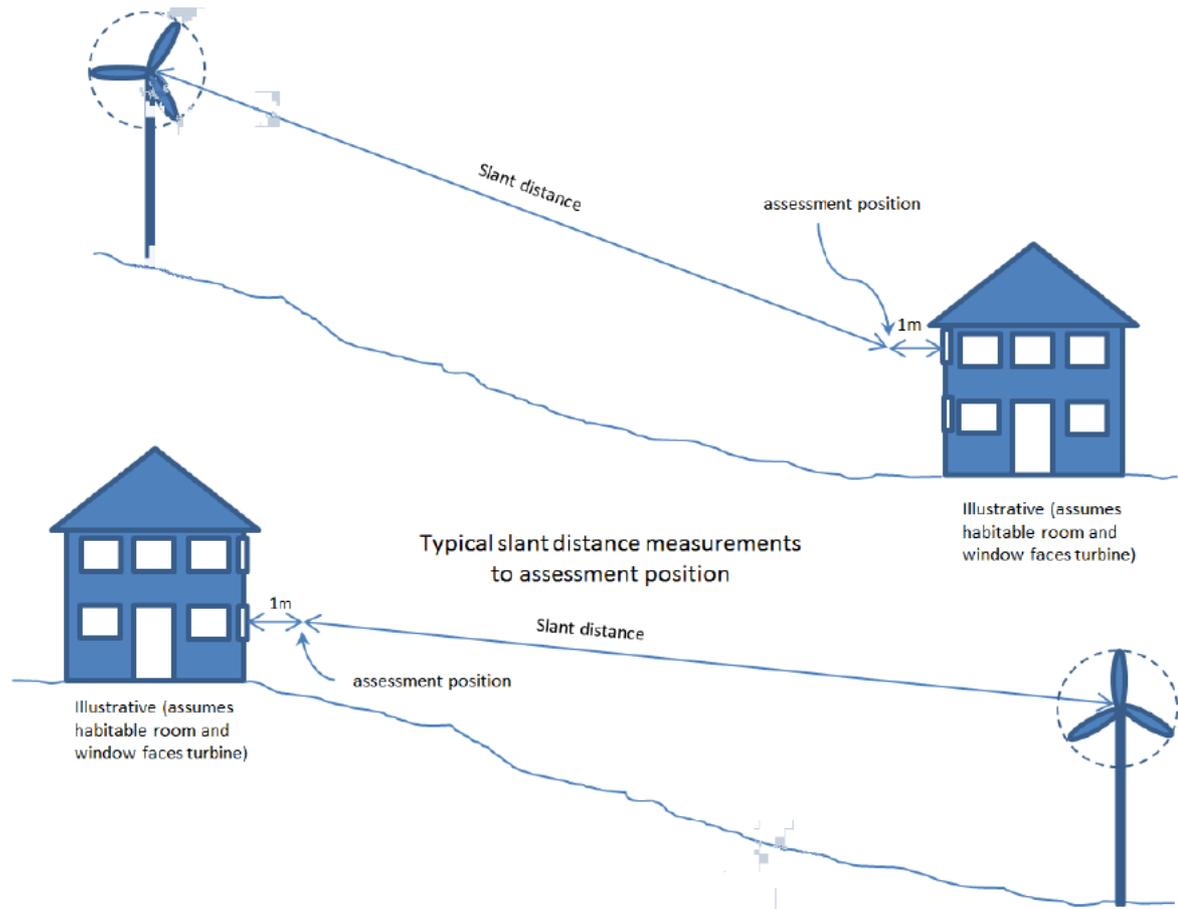
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this point to the bottom of the map will give the maximum slant distance in metres from rotor centre (hub) at which a wind turbine could be installed to stay within the noise range. For clarity, MCS Contractors must draw a single line that is no greater than the thickness of a standard biro.

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**NOTE 5: SLANT DISTANCE**

The slant distance is measured by drawing a straight line on a 1:500 scaled elevation plan (to be attached to the completed calculation procedure) between the rotor centre (hub) of the wind turbine and the assessment position, taking account of any difference in levels between the two points. The straight line is then measured to give the slant distance. This is illustrated below.



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### 3. MCS PLANNING STANDARD FOR AIR SOURCE HEAT PUMPS

3.1 The MCS Planning Standard for air source heat pumps is as follows:

- (a) The air source heat pump product shall be certificated in accordance with MCS 007<sup>3</sup>;
- (b) The air source heat pump shall be installed by an MCS Contractor in accordance with MIS 3005<sup>4</sup>; and
- (c) The installation shall be carried out in compliance with the calculation procedure contained in Table 2. MCS Contractors must complete the 'results/notes' column in Table 2 for each step of the calculation procedure to show how it has been followed.

#### **AIR SOURCE HEAT PUMP CALCULATION PROCEDURE**

3.2 The air source heat pump calculation procedure is set out in Table 2. MCS Contractors must complete one table for each assessment position that could potentially be affected by noise from the air source heat pump. To follow the instructions and complete the table, MCS Contractors will need to refer to the definitions at the start of the table and Notes 1-7 set out after the table. A glossary of terms can be found in Section 4.

3.3 MCS Contractors must insert their results in the 'results/notes' column for each step of the calculation procedure to show how it has been followed. MCS Contractors must retain one copy of the completed table for their records and provide another copy to the client.

3.4 Explanation of the calculation procedure is supported by a worked example which is in italics at the end of each step in the table. In the example, an air source heat pump with a sound power of 55 dB(A) mounted on the ground and against a single wall is used. An assessment position is 4 metres away. This example is used for the purposes of illustrating the calculation procedure only.

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<sup>3</sup>The Microgeneration Certification Scheme Standard MCS 007 – Issue 4.0. Product Certification Scheme Requirements: Heat Pumps. Dated 01/05/2015

<sup>4</sup>The Microgeneration Certification Scheme MCS Contractor Standard MIS 3005 – Issue 4.2. Requirements for Contractors Undertaking the Supply, Design, Installation, Set to Work Commissioning and Handover of Microgeneration Heat Pump Systems. Dated 01/05/2015

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**TABLE 2: USE ONE TABLE FOR EACH ASSESSMENT POSITION TESTED**

<p><b>Date calculation undertaken:</b></p> <p><b>Note:</b> for the purposes of this calculation procedure:</p> <ul style="list-style-type: none"><li>• <b>Assessment position</b> means a position one metre external to the centre point of any door or window to a habitable room of a neighbouring property as measured perpendicular to the plane of the door or window.</li><li>• <b>Habitable room</b> means a room other than a bathroom, shower room, water closet or kitchen.</li><li>• <b>Neighbouring property.</b> Means any building used for any of the purposes of Class C of the Town and Country Planning (Use Classes) Order 1987 (as amended) (includes dwellings, houses, hotels, residential institutions and houses in multiple occupation). In instances where the air source heat pump would be installed on block of flats, neighbouring property includes flats within the same block of flats (excluding the flat of the "owner(s)" of the air source heat pump.</li></ul>
<p><b>Description of assessment position tested</b></p> <p>(This must be detailed enough to allow for identification, including property address and exact location of window / door opening and floor level. It is recommended that a map, sketch, photo or other record be attached to these workings.)</p>
<p><i>Example: The assessment position is the first floor bedroom window of 1 Oak Street and it is 4 metres away from the location of the proposed air source heat pump.</i></p>

Step	Instructions	MCS contractor results / notes
1.	<p>From manufacturer's data, obtain the A-weighted sound power level of the heat pump. See '<u>Note 1: Sound power level</u>'. The highest sound power level specified should be used (the power in "low noise mode" should not be used).</p> <p><i>Example: Manufacturer's data states the sound power level of the heat pump is 55 dB(A).</i></p>	STEP 1 RESULT =
2.	<p>Use '<u>Note 2: Sound pressure level</u>' and '<u>Note 3: Determination of directivity</u>' below to establish the directivity 'Q' of the heat pump noise.</p> <p><i>Example: The heat pump is to be installed on the ground and against a single wall hence the directivity (Q) of the heat pump noise is Q4.</i></p>	STEP 2 RESULT =
3.	<p>Measure the distance from the heat pump to the assessment position in metres.</p> <p><i>Example: Distance between heat pump and assessment position is 4 metres.</i></p>	STEP 3 RESULT =
4.	<p>Use table in '<u>Note 4: dB distance reduction</u>' below to obtain a dB reduction.</p> <p><i>Example: 4metres @ Q4 = -17 db.</i></p>	STEP 4 RESULT =

5.	<p><b>Establish whether there is a solid barrier between the heat pump and the assessment position using '<u>Note 5: Barriers between the heat pump and the assessment position</u>' and note any dB reduction.</b></p> <p><i>Example: There is a brick wall between the heat pump and the assessment position. Moving less than 25cm enables the assessment position to be seen. dB reduction = -5 dB.</i></p>	STEP 5 RESULT =
6.	<p><b>Calculate the sound pressure level (see '<u>Note 2: Sound pressure level</u>') from the heat pump at the assessment position using the following calculation:</b></p> <p><b>(STEP 1) + (STEP 4) + (STEP 5)</b></p> <p><i>Example (55) + (-17) + (-5)=55 - 17 - 5 =33 dB(A) Lp</i></p>	STEP 6 RESULT =
7.	<p><b>Background noise level. For the purposes of the MCS Planning Standard for air source heat pumps the background noise level is assumed to be 40 dB(A) Lp. For information see '<u>Note 6: MCS Planning Standard for air source heat pumps background noise level</u>'.</b></p> <p><i>Example: Background noise level is 40 dB(A).</i></p>	STEP 7 RESULT = 40 dB(A)
8.	<p><b>Determine the difference between STEP 7 background noise level and the heat pump noise level using the following calculation:</b></p> <p><b>(STEP 7) - (STEP 6)</b></p>	STEP 8 RESULT =

	<p><i>Example: 40 dB(A) (background) - 33 dB(A) (heat pump) = 7dB(A).</i></p>	
9.	<p><b>Using the table in 'Note 7: Decibel correction' obtain an adjustment figure and then add this to whichever is the higher dB figure from <u>STEP 6</u> and <u>STEP 7</u>. <u>Round this number up to the nearest whole number.</u></b></p> <p><i>Example: Adjustment figure is 0.8 dB and the higher figure is 40 dB(A).</i></p> <p><i>40 + 0.8 = 40.8 dB(A).</i></p> <p><i>Rounded up to 41 dB(A)</i></p> <p><i>Final result at this assessment position is 41 dB(A).</i></p>	FINAL RESULT=
10.	<p><b>Is the FINAL RESULT in STEP 9 equal to or lower than the permitted development noise limit of 42.0 dB(A)?</b></p> <p><b>If <u>YES</u> - the air source heat pump will comply with the permitted development noise limit for this assessment position and may be permitted development (subject to compliance with other permitted development limitations/conditions and parts of this standard). NOTE - <u>Other assessment positions may also need to be tested.</u></b></p> <p><b>If <u>NO</u> - the air source heat pump will not be permitted development. This installation may still go ahead if planning permission is granted by the local planning authority.</b></p> <p><i>Example: 41 dB(A) is equal to or lower than 42.0 dB(A).</i></p>	<p>Final result is equal to or lower than 42.0 dB(A)</p> <p>YES / NO (delete as appropriate)</p>

### NOTE 1: SOUND POWER LEVEL (STEP 1)

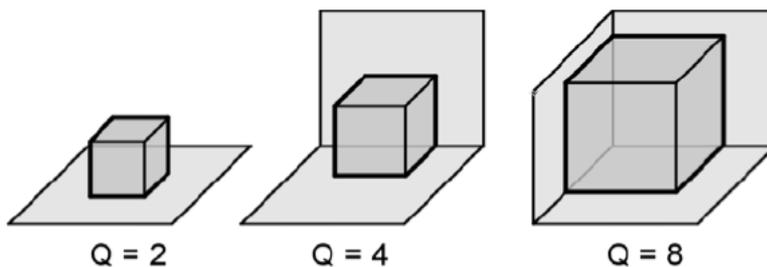
Sound power is the *total* acoustical energy emitted by a sound source and is an absolute value. It is **not** affected by the environment or the location of the listener.

### NOTE 2: SOUND PRESSURE LEVEL (STEP 2)

Sound pressure is what we hear. It is a pressure disturbance at a specific point in the atmosphere whose intensity is influenced not only by the sound power of the source, but also by the surroundings and the distance from the source to the point at which the sound is heard.

### NOTE 3: DETERMINATION OF 'DIRECTIVITY' (STEP 2)

The sound pressure level increases with the number of reflecting surfaces. Use the illustrations below to establish the directivity 'Q' for the installation. A reflective surface is any surface (including the ground) within 1 metre of the air source heat pump.



The following examples may be used as a guide:

- Q2 = an air source heat pump with one reflecting surface (i.e. the ground or a single wall if mounted on a wall off the ground).
- Q4 = an air source heat pump with two reflecting surfaces (i.e. ground mounted and against a wall or mounted off ground level against two walls)
- Q8 = an air source heat pump with three reflecting surfaces (i.e. ground mounted and against two walls or mounted off ground level between three walls).
- **NOTE - an air source heat pump with more than three reflective surfaces (for example those within small lightwells) will not meet the MCS planning standards.**

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**NOTE 4: DB DISTANCE REDUCTION (STEP 4)**

		Distance from Heat Pump (metres) (STEP 3 RESULT)													
		1	1.5	2	3	4	5	6	8	10	12	15	20	25	30
Q (STEP 2 RESULT)	2														
	2	-8	-11	-14	-17	-20	-21	-23	-26	-28	-29	-31	-34	-36	-37
	4	-5	-8	-11	-14	-17	-19	-20	-23	-25	-26	-28	-31	-33	-34
	8	-2	-5	-8	-11	-14	-16	-17	-20	-22	-23	-25	-28	-30	-31

Where a precise distance is not indicated in the above table, then the next lowest value for that distance should be used. E.g. if the distance was 2.5m, then the values for 2m should be used.

**NOTE 5: BARRIERS BETWEEN THE HEAT PUMP AND THE ASSESSMENT POSITION (STEP 5)**

A correction should be made for attenuation due to barriers between the air source heat pump and an assessment position. A correction will be necessary if an MCS Contractor is unable to see an assessment position from the top edge of the air source heat pump. Use the following instructions to determine whether a correction is appropriate:

- For a solid barrier (e.g. a brick wall or a fence) that completely obscures an MCS Contractor's vision of an assessment position from the top edge of the air source heat pump attenuation of -10 dB may be assumed.
- Where a solid barrier completely obscures an MCS Contractor's vision of an assessment position from the top or side edges of the air source heat pump, but moving a maximum distance of 25 cm in any direction to the air source heat pump allows an assessment position to be seen, attenuation of -5 dB may be assumed.
- If it is possible for an MCS Contractor to see any part of an assessment position from the top or side edges of the air source heat pump no attenuation may be assumed.

**NOTE 6: MCS PLANNING STANDARD FOR AIR SOURCE HEAT PUMPS BACKGROUND NOISE LEVEL (STEP 7)**

The MCS Planning Standard assumes a background noise level of 40 dB(A) for the purposes of the air source heat pump calculation procedure. A different value for background noise should not be used as part of this calculation procedure.

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**NOTE 7: DECIBEL CORRECTION (STEP 9)**

Please note that the left hand column should be used for both positive and negative differences (e.g. a difference of +3 and -3 both attract a correction of 1.8 dB).

<b>Difference between the two noise levels (db) (+/-)</b>	<b>Add this correction to the higher noise level (db)</b>
0	3.0
1	2.5
2	2.1
3	1.8
4	1.5
5	1.2
6	1.0
7	0.8
8	0.6
9	0.5
10	0.4
11	0.3
12	0.3
13	0.2
14	0.2
15	0.1

## 4. GLOSSARY OF TERMS

<b>Agl</b>	Above ground level.
<b>Attenuation</b>	Reduction in the intensity of sound due to absorption, scattering or spreading.
<b>dB</b>	A logarithmic unit used to describe a ratio. When used in the context of acoustics dB represents the ratio of a measured sound pressure to a reference sound pressure. A doubling of sound pressure gives rise to an increase of 3 dB.
<b>dB(A)</b>	The sound pressure ratio described using the A-weighting network. The A-weighting network is commonly used to represent the frequency response of the human ear.
<b>Hub</b>	Fixture for attaching the blades or blade assembly to the rotor shaft.
<b>L<sub>Aeq, 5mins</sub></b>	The A weighted equivalent continuous sound level over a 5 minute period that contains the same sound energy as the actual varying sound over the same time period.
<b>MCS</b>	The Microgeneration Certification Scheme which certifies products and MCS Contractors of renewable technologies.
<b>Permitted Development</b>	Exemption from the requirement to seek express planning permission for certain minor works. Permitted development rights are laid down in the General Permitted Development Order 1995 (as amended) (SI. No 418).

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<b>Rotor</b>	Rotating part of a machine e.g. a wind turbine.
<b>Rotor centre</b>	The geometric centre of the swept area of the wind turbine rotor, also known as hub.
<b>Swept area</b>	Projected area perpendicular to the wind direction that a rotor will describe during one complete rotation.
<b>Use Class Order</b>	The Town and Country Planning (Use Classes) Order 1987 (as amended) (SI. No 764). Defines uses of land and buildings and puts these into various categories known as 'Use Classes'.

## AMENDMENTS ISSUED SINCE PUBLICATION

Document number	Amendment details	Date
1.0	First Issue	19/08/2011
1.1	Clarification to Step 10 under Air Source Heat Pumps. New explanatory note added to wind Step 3.	22/07/2013
1.2	Updated definitions and section numbering.	01/05/2015
1.3	Rebranding of document, update of email and website addresses and cosmetic changes.	19/06/2019

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Business Centre G.2 Waverley Court 4 East Market Street Edinburgh EH8 8BG Email: [planning.support@edinburgh.gov.uk](mailto:planning.support@edinburgh.gov.uk)

Applications cannot be validated until all the necessary documentation has been submitted and the required fee has been paid.

Thank you for completing this application form:

ONLINE REFERENCE 100515254-004

The online reference is the unique reference for your online form only. The Planning Authority will allocate an Application Number when your form is validated. Please quote this reference if you need to contact the planning Authority about this application.

## Type of Application

What is this application for? Please select one of the following: \*

- Application for planning permission (including changes of use and surface mineral working).
- Application for planning permission in principle.
- Further application, (including renewal of planning permission, modification, variation or removal of a planning condition etc)
- Application for Approval of Matters specified in conditions.

## Description of Proposal

Please describe the proposal including any change of use: \* (Max 500 characters)

Roof extension of flat.

Is this a temporary permission? \*

Yes  No

If a change of use is to be included in the proposal has it already taken place?  
(Answer 'No' if there is no change of use.) \*

Yes  No

Has the work already been started and/or completed? \*

No  Yes – Started  Yes - Completed

## Applicant or Agent Details

Are you an applicant or an agent? \* (An agent is an architect, consultant or someone else acting on behalf of the applicant in connection with this application)

Applicant  Agent

## Agent Details

Please enter Agent details

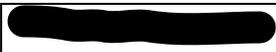
Company/Organisation:	Andrew Megginson Architecture		
Ref. Number:		You must enter a Building Name or Number, or both: *	
First Name: *	Andrew	Building Name:	Andrew Megginson Architecture
Last Name: *	Megginson	Building Number:	
Telephone Number: *	0131 557 9129	Address 1 (Street): *	128 Dundas Street
Extension Number:		Address 2:	New Town
Mobile Number:		Town/City: *	Edinburgh
Fax Number:		Country: *	Scotland
		Postcode: *	EH3 5DQ
Email Address: *	andrew@andrewmegginsonarchitecture.com		

Is the applicant an individual or an organisation/corporate entity? \*

Individual  Organisation/Corporate entity

## Applicant Details

Please enter Applicant details

Title:	Other	You must enter a Building Name or Number, or both: *	
Other Title:	Mr/ Mrs	Building Name:	61/ 5
First Name: *	Vilfrido	Building Number:	61
Last Name: *	Lo Rizzo	Address 1 (Street): *	Falcon Avenue
Company/Organisation		Address 2:	
Telephone Number: *		Town/City: *	Edinburgh
Extension Number:		Country: *	Scotland
Mobile Number:		Postcode: *	EH10 4AN
Fax Number:			
Email Address: *			

## Site Address Details

Planning Authority:

City of Edinburgh Council

Full postal address of the site (including postcode where available):

Address 1:

3F1

Address 2:

61 FALCON AVENUE

Address 3:

NEWBATTLE

Address 4:

Address 5:

Town/City/Settlement:

EDINBURGH

Post Code:

EH10 4AN

Please identify/describe the location of the site or sites

Northing

671467

Easting

324687

## Pre-Application Discussion

Have you discussed your proposal with the planning authority? \*

Yes  No

## Site Area

Please state the site area:

100.00

Please state the measurement type used:

Hectares (ha)  Square Metres (sq.m)

## Existing Use

Please describe the current or most recent use: \* (Max 500 characters)

Residential

## Access and Parking

Are you proposing a new altered vehicle access to or from a public road? \*

Yes  No

If Yes please describe and show on your drawings the position of any existing. Altered or new access points, highlighting the changes you propose to make. You should also show existing footpaths and note if there will be any impact on these.

Are you proposing any change to public paths, public rights of way or affecting any public right of access? \*  Yes  No

If Yes please show on your drawings the position of any affected areas highlighting the changes you propose to make, including arrangements for continuing or alternative public access.

How many vehicle parking spaces (garaging and open parking) currently exist on the application Site?

How many vehicle parking spaces (garaging and open parking) do you propose on the site (i.e. the Total of existing and any new spaces or a reduced number of spaces)? \*

Please show on your drawings the position of existing and proposed parking spaces and identify if these are for the use of particular types of vehicles (e.g. parking for disabled people, coaches, HGV vehicles, cycles spaces).

**Water Supply and Drainage Arrangements**

Will your proposal require new or altered water supply or drainage arrangements? \*  Yes  No

Are you proposing to connect to the public drainage network (eg. to an existing sewer)? \*

Yes – connecting to public drainage network

No – proposing to make private drainage arrangements

Not Applicable – only arrangements for water supply required

Do your proposals make provision for sustainable drainage of surface water?? \*  Yes  No  
(e.g. SUDS arrangements) \*

Note:-

Please include details of SUDS arrangements on your plans

Selecting 'No' to the above question means that you could be in breach of Environmental legislation.

Are you proposing to connect to the public water supply network? \*

Yes

No, using a private water supply

No connection required

If No, using a private water supply, please show on plans the supply and all works needed to provide it (on or off site).

**Assessment of Flood Risk**

Is the site within an area of known risk of flooding? \*  Yes  No  Don't Know

If the site is within an area of known risk of flooding you may need to submit a Flood Risk Assessment before your application can be determined. You may wish to contact your Planning Authority or SEPA for advice on what information may be required.

Do you think your proposal may increase the flood risk elsewhere? \*  Yes  No  Don't Know

**Trees**

Are there any trees on or adjacent to the application site? \*  Yes  No

If Yes, please mark on your drawings any trees, known protected trees and their canopy spread close to the proposal site and indicate if any are to be cut back or felled.

**Waste Storage and Collection**

Do the plans incorporate areas to store and aid the collection of waste (including recycling)? \*  Yes  No

If Yes or No, please provide further details: \* (Max 500 characters)

Provision as existing.

## Residential Units Including Conversion

Does your proposal include new or additional houses and/or flats? \*

Yes  No

## All Types of Non Housing Development – Proposed New Floorspace

Does your proposal alter or create non-residential floorspace? \*

Yes  No

## Schedule 3 Development

Does the proposal involve a form of development listed in Schedule 3 of the Town and Country Planning (Development Management Procedure (Scotland) Regulations 2013) \*

Yes  No  Don't Know

If yes, your proposal will additionally have to be advertised in a newspaper circulating in the area of the development. Your planning authority will do this on your behalf but will charge you a fee. Please check the planning authority's website for advice on the additional fee and add this to your planning fee.

If you are unsure whether your proposal involves a form of development listed in Schedule 3, please check the Help Text and Guidance notes before contacting your planning authority.

## Planning Service Employee/Elected Member Interest

Is the applicant, or the applicant's spouse/partner, either a member of staff within the planning service or an elected member of the planning authority? \*

Yes  No

## Certificates and Notices

CERTIFICATE AND NOTICE UNDER REGULATION 15 – TOWN AND COUNTRY PLANNING (DEVELOPMENT MANAGEMENT PROCEDURE) (SCOTLAND) REGULATION 2013

One Certificate must be completed and submitted along with the application form. This is most usually Certificate A, Form 1, Certificate B, Certificate C or Certificate E.

Are you/the applicant the sole owner of ALL the land? \*

Yes  No

Is any of the land part of an agricultural holding? \*

Yes  No

## Certificate Required

The following Land Ownership Certificate is required to complete this section of the proposal:

Certificate A

# Land Ownership Certificate

Certificate and Notice under Regulation 15 of the Town and Country Planning (Development Management Procedure) (Scotland) Regulations 2013

Certificate A

I hereby certify that –

(1) - No person other than myself/the applicant was an owner (Any person who, in respect of any part of the land, is the owner or is the lessee under a lease thereof of which not less than 7 years remain unexpired.) of any part of the land to which the application relates at the beginning of the period of 21 days ending with the date of the accompanying application.

(2) - None of the land to which the application relates constitutes or forms part of an agricultural holding

Signed: Andrew Megginson

On behalf of: Mr/ Mrs Vilfrido Lo Rizzo

Date: 05/09/2022

Please tick here to certify this Certificate. \*

## Checklist – Application for Planning Permission

Town and Country Planning (Scotland) Act 1997

The Town and Country Planning (Development Management Procedure) (Scotland) Regulations 2013

Please take a few moments to complete the following checklist in order to ensure that you have provided all the necessary information in support of your application. Failure to submit sufficient information with your application may result in your application being deemed invalid. The planning authority will not start processing your application until it is valid.

a) If this is a further application where there is a variation of conditions attached to a previous consent, have you provided a statement to that effect? \*

Yes  No  Not applicable to this application

b) If this is an application for planning permission or planning permission in principle where there is a crown interest in the land, have you provided a statement to that effect? \*

Yes  No  Not applicable to this application

c) If this is an application for planning permission, planning permission in principle or a further application and the application is for development belonging to the categories of national or major development (other than one under Section 42 of the planning Act), have you provided a Pre-Application Consultation Report? \*

Yes  No  Not applicable to this application

Town and Country Planning (Scotland) Act 1997

The Town and Country Planning (Development Management Procedure) (Scotland) Regulations 2013

d) If this is an application for planning permission and the application relates to development belonging to the categories of national or major developments and you do not benefit from exemption under Regulation 13 of The Town and Country Planning (Development Management Procedure) (Scotland) Regulations 2013, have you provided a Design and Access Statement? \*

Yes  No  Not applicable to this application

e) If this is an application for planning permission and relates to development belonging to the category of local developments (subject to regulation 13. (2) and (3) of the Development Management Procedure (Scotland) Regulations 2013) have you provided a Design Statement? \*

Yes  No  Not applicable to this application

f) If your application relates to installation of an antenna to be employed in an electronic communication network, have you provided an ICNIRP Declaration? \*

Yes  No  Not applicable to this application

g) If this is an application for planning permission, planning permission in principle, an application for approval of matters specified in conditions or an application for mineral development, have you provided any other plans or drawings as necessary:

- Site Layout Plan or Block plan.
- Elevations.
- Floor plans.
- Cross sections.
- Roof plan.
- Master Plan/Framework Plan.
- Landscape plan.
- Photographs and/or photomontages.
- Other.

If Other, please specify: \* (Max 500 characters)

Provide copies of the following documents if applicable:

- |  |   |   |
|--|---|---|
| A copy of an Environmental Statement. *  | <input type="checkbox"/> Yes            | <input checked="" type="checkbox"/> N/A |
| A Design Statement or Design and Access Statement. *                                   | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> N/A            |
| A Flood Risk Assessment. *   | <input type="checkbox"/> Yes            | <input checked="" type="checkbox"/> N/A |
| A Drainage Impact Assessment (including proposals for Sustainable Drainage Systems). * | <input type="checkbox"/> Yes            | <input checked="" type="checkbox"/> N/A |
| Drainage/SUDS layout. *  | <input type="checkbox"/> Yes            | <input checked="" type="checkbox"/> N/A |
| A Transport Assessment or Travel Plan  | <input type="checkbox"/> Yes            | <input checked="" type="checkbox"/> N/A |
| Contaminated Land Assessment. *  | <input type="checkbox"/> Yes            | <input checked="" type="checkbox"/> N/A |
| Habitat Survey. *  | <input type="checkbox"/> Yes            | <input checked="" type="checkbox"/> N/A |
| A Processing Agreement. *  | <input type="checkbox"/> Yes            | <input checked="" type="checkbox"/> N/A |

Other Statements (please specify). (Max 500 characters)

## Declare – For Application to Planning Authority

I, the applicant/agent certify that this is an application to the planning authority as described in this form. The accompanying Plans/drawings and additional information are provided as a part of this application.

Declaration Name: Mr Andrew Megginson

Declaration Date: 13/12/2021

Andrew Megginson Architecture.  
FAO Andrew Megginson  
128 Dundas Street  
Edinburgh  
EH3 5DQ

Mr & Mrs Lo Rizzo  
Flat 5 61 Falcon Avenue  
Edinburgh  
EH10 4AN

**Decision date: 6 January 2023**

TOWN AND COUNTRY PLANNING (SCOTLAND) ACTS  
**DEVELOPMENT MANAGEMENT PROCEDURE (SCOTLAND) REGULATIONS 2013**

Roof extension  
At 3F1 61 Falcon Avenue Edinburgh EH10 4AN

**Application No:** 22/04429/FUL

**DECISION NOTICE**

With reference to your application for Planning Permission registered on 5 September 2022, this has been decided by **Local Delegated Decision**. The Council in exercise of its powers under the Town and Country Planning (Scotland) Acts and regulations, now determines the application as **Refused** in accordance with the particulars given in the application.

Any condition(s) attached to this consent, with reasons for imposing them, or reasons for refusal, are shown below;

**Reason for Refusal:-**

1. The proposal fails to comply with policy Des 12 of the Edinburgh Local Development Plan as its design and form, choice of materials and positioning is not compatible with the character of the existing building, and it will be detrimental to neighbourhood character.
2. The proposal fails to comply with policy Des 1 of the Edinburgh Local Development Plan as its design and form, choice of materials and positioning is not compatible with the character of the existing building, and it will be detrimental to neighbourhood character.

Please see the guidance notes on our [decision page](#) for further information, including how to appeal or review your decision.

Drawings 01-07, represent the determined scheme. Full details of the application can be found on the [Planning and Building Standards Online Services](#)

The reason why the Council made this decision is as follows:

The proposal, in its design and form, choice of materials and positioning is not compatible with the character of the existing building. The proposal does not comply with LDP policy Des 1 and Des 12 and the overall objectives of the Development Plan. There are no material considerations which outweigh this conclusion.

This determination does not carry with it any necessary consent or approval for the proposed development under other statutory enactments.

Should you have a specific enquiry regarding this decision please contact Weronika Myslowiecka directly at [weronika.myslowiecka@edinburgh.gov.uk](mailto:weronika.myslowiecka@edinburgh.gov.uk).



**Chief Planning Officer**  
**PLACE**  
**The City of Edinburgh Council**

## NOTES

1. If the applicant is aggrieved by the decision to refuse permission for or approval required by a condition in respect of the proposed development, or to grant permission or approval subject to conditions, the applicant may require the planning authority to review the case under section 43A of the Town and Country Planning (Scotland) Act 1997 within three months beginning with the date of this notice. The Notice of Review can be made online at [www.eplanning.scot](http://www.eplanning.scot) or forms can be downloaded from that website. Paper forms should be addressed to the City of Edinburgh Planning Local Review Body, G.2, Waverley Court, 4 East Market Street, Edinburgh, EH8 8BG. For enquiries about the Local Review Body, please email [localreviewbody@edinburgh.gov.uk](mailto:localreviewbody@edinburgh.gov.uk).

2. If permission to develop land is refused or granted subject to conditions and the owner of the land claims that the land has become incapable of reasonably beneficial use in its existing state and cannot be rendered capable of reasonably beneficial use by carrying out of any development which has been or would be permitted, the owner of the land may serve on the planning authority a purchase notice requiring the purchase of the owner of the land's interest in the land accordance with Part 5 of the Town and Country Planning (Scotland) Act 1997.