Nether Moor Farm
Sandy Lane, South Crosland
Huddersfield, HD4 7BX

Conversion of existing Agricultural Barns attached to existing Farmhouse to form 4 Dwellings

Noise and Pollution
Additional Justification

On behalf:

Mr & Mrs Bradley

OCT 2017

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1. INTRODUCTION

1.1. This supporting and justification statement has been prepared on behalf of the applicant specifically to address the concerns raised in the noise and pollution consultation.

1.2. The noise and pollution consultation is included in appendix 1 for ease of reference. The consultation has been prepared in response to the planning application 2017/91733 to convert the existing Nether Moor Farm stone barns to 4 dwellings.

2. CONSULTATION SUPPORT

2.1. It is important to understand that the consultation supports application in principle but only if the new 4 dwellings are occupied by “the owner, staff or dependants of Nether Moor Farm”.

2.2. This recommended restrictive condition will result in a minimum of 4 additional full time workers in addition to the existing 4 workers together with their families to line in the new dwellings. To justify this the land holding area of agricultural sheds and number of livestock would also have to double. This is simply not physically or economically feasible.

2.3. It is important to note that the concerns raised about noise and odour are not so significant to prevent use for dwellings, given the consultation recommends conversion for dwellings for staff and their children without any further justification

2.4. For the avoidance of doubt the need behind the current proposal is to reuse their existing Grade II listed farm buildings given that it is generally accepted they are beyond practical use for agricultural operations. A reuse as dwellings is generally accepted as the most appropriate, this use must be self-sustaining. There would be little point in converting to agricultural workers dwellings when there is no need.

3. PROPOSAL ADDRESSES NOISE CONCERNS

3.1. Design guidance

3.1.1. It is generally understood that there are acceptable noise levels under which people in dwellings will not suffer from noise disturbance. Kirklees, The World Health Organisation and BS 8233 all set out noise levels within dwellings that should be achieved.

3.1.2. Good acoustic design is based on site specific noise levels measured to establish the source noise level. Alternatively typical or generic noise data can be used on which to base acoustic insulation design.

3.1.3. It is generally accepted that it is possible within reason to design any level of acoustic insulation to reduce the source noise to an acceptable limit in the receiving/habitable room. I would expect that the potential noise maximum noise associated with the farming operations will not be so excessive that it would prevent a design solution to ensure the noise climate within the dwellings is within the normal prescribed limit.

3.2. Layout

3.2.1. The new portal framed agricultural buildings together with the agricultural farmland all sit to the north of the listed building proposed to be converted. The layout of the existing buildings is generally with the primary elevations facing south away from the continuing agriculture use, with windows predominantly to the south and minimum windows to the north.

3.2.2. The natural orientation of the conversion buildings away from the agricultural use combined with the proposed conversion designed to maximise the outlook to the south is in principle a good acoustic layout.

3.2.3. The proposed internal layouts where possible have placed the circulation to the north side of the building this will act as a noise buffer to the habitable rooms and bedrooms separated from the north side by the stair/circulation space. Units 1, 2, and 5 all benefit from this type of layout.

3.3. Alterations

3.3.1. The existing stone barns are generally have a solid wall construction which on average is 450mm thick. This existing density of the walls is a very good starting point for acoustic insulation as mass of the stone walls will provide good acoustic insulation on its own. The conversion of the buildings in to dwellings will incorporate a lining to the internal face of all the external walls, this is primarily to address thermal insulation, damp and odour from the existing walls previous use. The lining can additionally be specified to improve the acoustic insulation to achieve the necessary noise reduction.

3.3.2. As a practice we have experience of converting farm building in areas of continuing agricultural use and have not had any issues with noise disturbance from the agricultural use. This type of insulated acoustic linings to thick stone walls have proved that they work.

3.3.3. The proposed internal linings can are generally confirmed in the Design and Access Statement under item 5.2

3.4. Ventilation

3.4.1. Noise disturbance can occur when windows need to be opened in the warmer weather for ventilation. This will obviously allow noise ingress no matter how well the building is acoustically lined.

3.4.2. To address the improvements in thermal efficiency and air tightness of the conversion which will alter the vapour paths of the traditional fabric a Heat recovery continuous ventilation system is proposed. This will provide continuous ventilation and result in occupants not relying on opening windows for ventilation and mitigate concerns of noise ingress through open windows.

4. PROPOSAL ADDRESSES SMELL CONCERNS

4.1. Design guidance

4.1.1. There is no guidance that sets out prescribed odour limits in dwellings from adjacent agricultural uses. The issues of Odour ingress are generally associated with air ingress, openable windows and ventilation.

4.2. Orientation

4.2.1. The buildings to be converted are located to the south of the continuing agricultural operations. The prevailing wind will generally work with the conversion blowing any odours from the agricultural buildings to the north away from the proposed dwellings.

4.3. Ventilation

4.3.1. A whole house ventilation system will be incorporated in to each of the new dwellings a system can be specified to incorporate filters to remove odours from the incoming ventilation. See appendix 2 literature for a ventilation system designed to filter odours. There are many different systems and specific filters for specific odours.

5. SUMMARY & DETERMINATION SUGGESTION

5.1. The consultation clearly supports a residential use but raises concerns how both potential noise and odour disturbance can be addressed.

5.2. We think it is reasonable to accept that noise disturbance can be mitigated by ensuring the industry noise levels in dwellings are met. This can be achieved with the careful design of the internal linings and ventilation system.

5.3. We think it is reasonable to accept that possible agricultural odours can be filtered out by a correctly specified filtered ventilation system.

5.4. Whilst both issues are a material consideration in determining the application both issues can be addressed with a careful design and specification based on specialist testing and reports if necessary.

5.5. We would suggest that if concerns remain with the detailed design to mitigate both noise and odour that this could be conditioned requiring further detail to be submitted and approved prior to commencement.

APPENDIX 1

KIRKLEES COUNCIL
INVESTMENT & REGENERATION

PNC1B

Town and Country Planning Act 1990
Application for Permission to Develop Land

Response from Pollution & Noise Control

PNC Reference No:	WK/201711158
Name of Planning Officer dealing with the matter:	Nick Hirst
Application Number:	2017/91733
Proposed Development:	Erection of extensions and alterations to existing farmhouse and erection of extensions and alterations to existing attached agricultural barns to form 4 dwellings (Listed Building)
Location:	Nether Moor Farm, Sandy Lane, South Crosland, Huddersfield, HD4 7BX
Date Required By Planning:	15th June 2017

COMMENTS

I have reviewed the application for residential in the middle of a working farm. I have concerns in relation to noise and odours from the existing uses affecting the new residential use. In the first instance I would recommend the following condition:

- The 4 residential premise hereby permitted shall not be occupied other than by the owner, member of staff or dependents thereof of the Nether Moor Farm unless otherwise agreed in writing by the local planning authority.

If this condition cannot be applied to the application then I recommend the further conditions:

1. Before development commences a report specifying the measures to be taken to protect the development from noise from the working farm and cattle shed shall be submitted to and approved in writing by the LPA

The report shall

(i) Determine the existing noise climate

(ii) Predict the noise climate in gardens (daytime), bedrooms (night-time) and other habitable rooms of the development

(iii) Detail the proposed attenuation/design necessary to protect the amenity of the occupants of the new residences (including ventilation if required).

Unless otherwise agreed in writing with the LPA the development shall not be occupied until all works specified in the approved report have been carried out in full and such works shall be thereafter retained.

Note

A competent person should undertake any noise survey and developers may wish to contact the Association of Noise Consultants http://www.association-of-noise-consultants.co.uk/Pages/Links.htm (01736 852958) or the Institute of Acoustics http://www.ioa.org.uk (01727 848195) for a list of members.

2. Before determining the application an odour assessment shall be submitted and approved by the local planning authority. The report shall use the following odour assessment tools:

- Qualitative
- Semi-quantitative
- Modelling
- Monitoring of odour ambient in the air
- The report shall Detail the proposed attenuation/design necessary to protect the amenity of the occupants of the new residences (including ventilation if required).

If the report demonstrates an unacceptable level of odour it may be that refusal of the permission is recommended.

Date:	6 July 2017	**Officer:**	Andrew Robinson 01484221000

APPENDIX 2

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1st Edition

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A filter to take care of health and home

The focus on Indoor Air Quality has never been as strong as it is today. Pressure on local councils require air quality reports to be completed in most habitable areas whilst changes to local construction legislation puts responsibility on developers to ensure air to dwellings is filtered to increasingly higher standards.

Whilst the Vent-Axia Mechanical Ventilation with Heat Recovery (MVHR) range offers high levels of particle filtration, up to and including F7, the New Vent-Axia Pure Air now sets the benchmark for high level filtration. The Vent-Axia Pure Air targets pollutants generated outside of the home, by traffic and industrial processes, and reduces these before supplying the air into the dwelling.

MVHR is the most energy efficient and effective method of ventilation in new homes. Air is extracted from 'wet' rooms (bathrooms, kitchen) and exhausted to outside. At the same time fresh, filtered, pre-warmed air is supplied into 'habitable' rooms (lounge and bedrooms). Clean filtered air is circulated throughout the home every two hours.

MVHR not only extracts harmful pollutants but also allows the air coming into the home to be filtered, taking out harmful airborne bacteria and dangerous contaminants. The Vent-Axia Pure Air filter is fitted to the intake airflow and incorporates two types of filtration:

- Enhanced activated Carbon which removes unpleasant odours and harmful gasses such as Nitrous Oxide (NO_2).
- G4 or F7 particulate filters which can remove tiny airborne contaminants such as pollen, bacteria and even PM2.5 diesel particulates.

The combination of MVHR and Vent-Axia Pure Air filtration offers the ideal indoor environment.

Vent-Axia®

Vent-Axia Pure Air

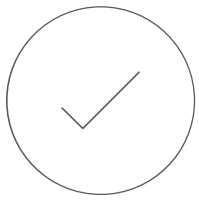
The Indoor Air Quality Filtration System

Particle Filtration

Vent-Axia Pure Air is available with G4 or F7 particle filters. G4 filters can remove up to 90% of the PM10 particles in the air, this includes some bacteria, most pollens and many types of industrial dust. The finer F7 filters remove up to 80% of the tiny PM2.5 particles, this includes fine diesel particulates.

Nitrogen Dioxide Filter

In urban areas vehicles are responsible for about 99% of Nitrogen Dioxide pollution. Respiratory problems and increased incidences of asthma result from high levels of NO_2. The Vent-Axia Pure Air filters incoming air, helping to meet World Health Organisation guidelines for NO_2 levels in homes.



Meeting IAQ levels

Particle filters conform to EN 779 and combined with specially formulated gas filters, help meet indoor air quality levels conforming to EU Directive 2008/50/EC.

Extensive Model Range

From small apartments to large offices, Vent-Axia Pure Air has a range of sizes to suit. The size and specification of each unit will be determined by the required airflow of each application.

Spigot Options

A range of rectangular and round spigot sizes, including combinations of both offer unique versatility at the point of installation. The filter unit can be installed vertically or horizontally allowing optimum use of space.

Noise Attenuation

In addition to improving air quality, external noise is attenuated as it passes through the unit thus reducing induct noise and helping to achieve specified sound levels in dwellings.

Consultant's Specification

Product Specifications

The unit shall comprise of a galvanised steel outer casing. Physical media panel filters contained in a cardboard housing shall be located at both spigot ends of the unit. Panel filters of Grade G4 to EN779 having an arrestance above 90% making it suitable for the removal of PM10 particulates. An additional particulate filter of grade F7 to EN779 can be included to further reduce smaller particles (PM2.5) to an efficiency between 80 and 80% at 0.4µm.

Example Stock Ref: PA 50 - 125 125 - 25

- PA: Pure Air
- 50: Litres Per Second
- 125: Intake Spigot Dia.
- 125: Exhaust Spigot Dia.
- 25: PM Filter Grade

Stock Ref	Airflow l/s	Intake Spigot (mm)*	Exhaust Spigot (mm)*	Filter Types	Clean Filter Pressure Drop (Pa)	Approximate Unit Weight (kg)	Curve Ref
PA50-125125-25	50	125Ø	125Ø	PM2.5	100	25	1
PA50-125204-25	50	125Ø	204 x 60	PM2.5	100	25	1
PA50-204204-25	50	204x60	204x60	PM2.5	100	25	1
PA50-125125-10	50	125Ø	125Ø	PM10	45	25	2
PA50-125204-10	50	125Ø	204x60	PM10	45	25	2
PA50-204204-10	50	204x60	204x60	PM10	45	25	2
PA100-150150-25	100	150Ø	150Ø	PM2.5	100	49	3
PA100-150220-25	100	150Ø	220x90	PM2.5	100	49	3
PA100-220220-25	100	220x90	220x90	PM2.5	100	49	3
PA100-150150-10	100	150Ø	150Ø	PM10	45	49	1
PA100-150220-10	100	150Ø	220x90	PM10	45	49	1
PA100-220220-10	100	220x90	220x90	PM10	45	49	1
PA200-200200-10	200	200Ø	200Ø	PM10	45	96	4
PA200-250250-10	200	250Ø	250Ø	PM10	45	96	4
PA300-315315-10	300	315Ø	315Ø	PM10	45	144	5

*Airflow may be reversed through the unit to offer alternative spigot options.

Accessories

Model	Stock Ref.
50 l/s insulating jacket	PAJAC-50
100 l/s insulating jacket	PAJAC-100
Spare PM2.5 filter	PAFIL-25
Spare PM10 filter	PAFIL-10
Spare Gas filter	PAFIL-NO2

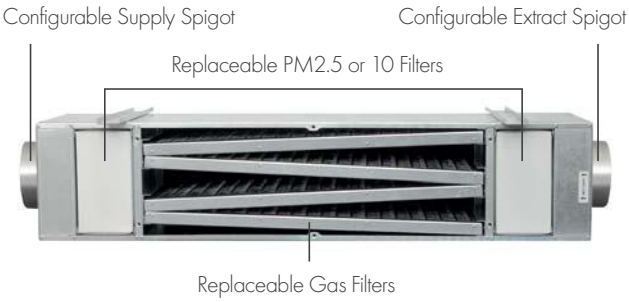
Installation

The Vent-Axia Pure Air may be installed in a vertical or horizontal orientation. When installing on the 'atmosphere' side of the MVHR unit, insulated jackets are available. Access to filters is available on both sides via bolted lift off panels. Various spigots including rectangle and round are available to suit ductwork systems for both domestic and commercial duct work.

Pollutant Gases, NO_2, SO_2, O_3, VOC

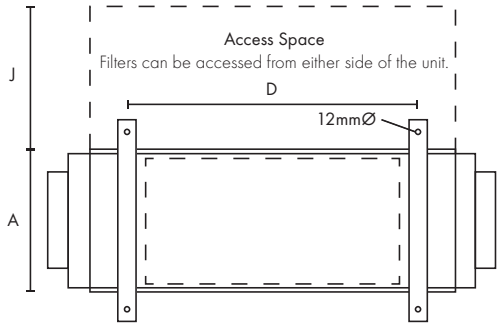
A specially formulated activated carbon and chemical mix acts upon pollutant concentrations common in dirty city air, reducing them to below guidelines set by current legislation. Gas and particulate filters are removable from either side of the unit.

Unit Configuration

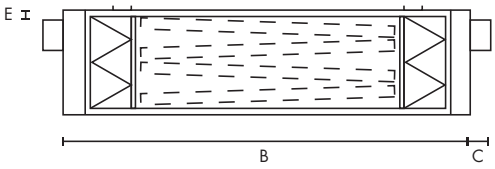


Technical Specification

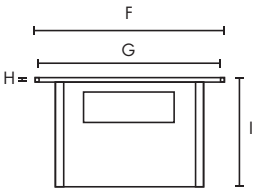
Dimensions (mm)



Top



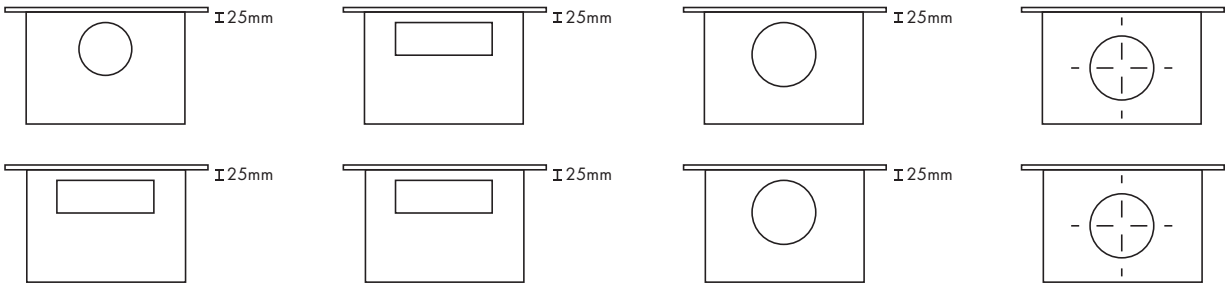
Side



Front

Airflow l/s	A	B	C	D	E	F	G	H	I	J
50	310	980	50	700	25	435	405	10	220	340
100	620	980	50	700	25	730	700	10	220	650
200	620	980	50	700	110/85	730	700	10	420	650
300	620	980	50	700	160	730	700	10	630	960

Spigot Configuration



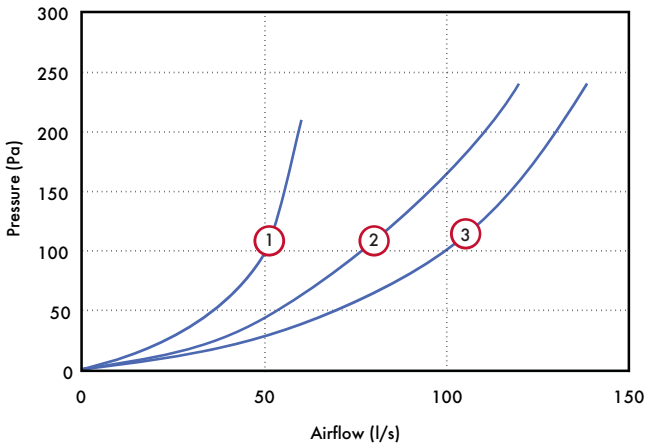
125Ø to 204x60
150Ø to 220x90

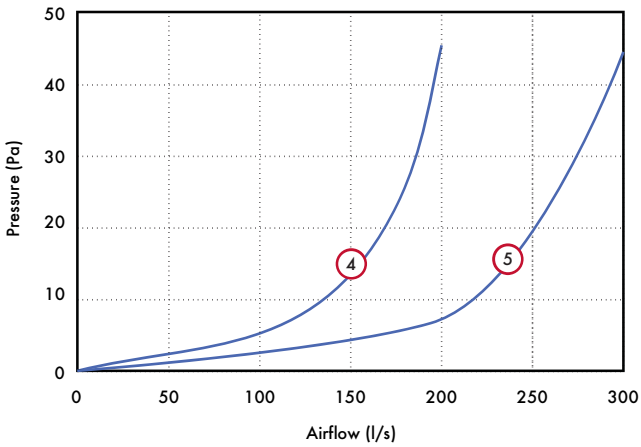
204x60 to 204x60
220x90 to 220x90

125Ø to 125Ø
150Ø to 150Ø

200Ø to 200Ø
250Ø to 250Ø
315Ø to 315Ø

Pressure Drop





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