



Hann Tucker Associates

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PROJECT TECHNICAL MEMORANDUM

JOB TITLE : Greenfinch, Didsbury

REF : HT: 2675/PTM1

DATE : 31 May 2022

FROM : Jake Howarth

ISSUED TO : Wren Properties

RE: GREENFINCH, DIDSBURY

It is proposed to provide a conversion of former Greenfinch Public House including selective demolition to provide office accommodation (use class E) and 3 apartments (use class C3), and redevelopment of site to provide 9 dwellings (use class C3) with associated works including landscaping and car parking.

The scheme (Application No.130831/FO/2021) was granted planning consent on 29 May 2020 subject to a number of conditions. One of which, condition 14, relates to noise and requires discharging before the work commence. For ease of reference the wording of condition 14 is provided below:

"Before the development commences a scheme for acoustically insulating the proposed residential accommodation against noise from Palatine Road and the proposed office shall be submitted to and approved in writing by the City Council as local planning authority. There may be other actual or potential sources of noise which require consideration on or near the site, including any local commercial/industrial premises. The approved noise insulation scheme shall be completed before any of the dwelling units are occupied.

Noise survey data must include measurements taken during a rush-hour period and night time to determine the appropriate sound insulation measures necessary. The following noise criteria will be required to be achieved:

- *Bedrooms (night time - 23.00 - 07.00) 30 dB L_{Aeq} (individual noise events shall not exceed 45 dB $L_{Amax,F}$ by more than 15 times)*
- *Living Rooms (daytime - 07.00 - 23.00) 35 dB L_{Aeq}*
- *Gardens and terraces (daytime) 55 dB L_{Aeq} .*

The following sections address the pre-commencement section of condition 14 and provide design evidence with a view to discharging the condition.

Sponsor Member of The Institute of Acoustics; Members of UKELA & IEMA, The Association of Noise Consultants,
A UKAS Accredited testing laboratory No.4083 for Sound Insulation and Air Tightness Testing; ISO 9001 Accredited
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1.0 Noise Survey

An environmental noise survey was carried at 1No location on the site 2021 between approximately 10:30 hours on Wednesday 13 January 2021 to 14:30 hours on Friday 15 January 2021 to establish incident noise levels over a weekend period.

Detailed information relating to the noise survey are provided in Hann Tucker Report 28495/NIA1 dated 20 January 2021, however, for ease of reference a summary of the measured environmental noise levels are presented below:

Pos	Daytime (07:00 – 23:00 hrs)		Night-time (23:00 – 07:00 hrs)		
	L _{Aeq,16h}	Typical L _{A90,15min}	L _{Aeq,8h}	Typical L _{A90,15min}	15 th Highest L _{Amax,15min}
1	65	51	59	31	81

It should be noted that the survey was carried out during COVID-19 restrictions. However, comparisons between the results of the Hann Tucker survey and noise surveys carried out by others pre-lockdown were undertaken at the time of writing. Based on these comparisons the restrictions did not appear to significantly affect the noise levels on the site and the noise levels measured were considered to be representative of “normal” conditions.

2.0 Proposed Constructions

2.1 External Walls

We understand that the existing external walls for the greenfinch pub are of a masonry construction and the proposed walls of the houses are to be a cavity masonry construction.

We would expect the sound insulation performance of the external walls outperform the glazing and would achieve the following octave band sound reduction indices as a minimum:

Location	Sound Reduction Index, R, (dB) at each Octave Band Centre Frequency (Hz)						
	63	125	250	500	1000	2000	4000
External Wall	34	37	40	45	50	55	55

2.2 Glazing

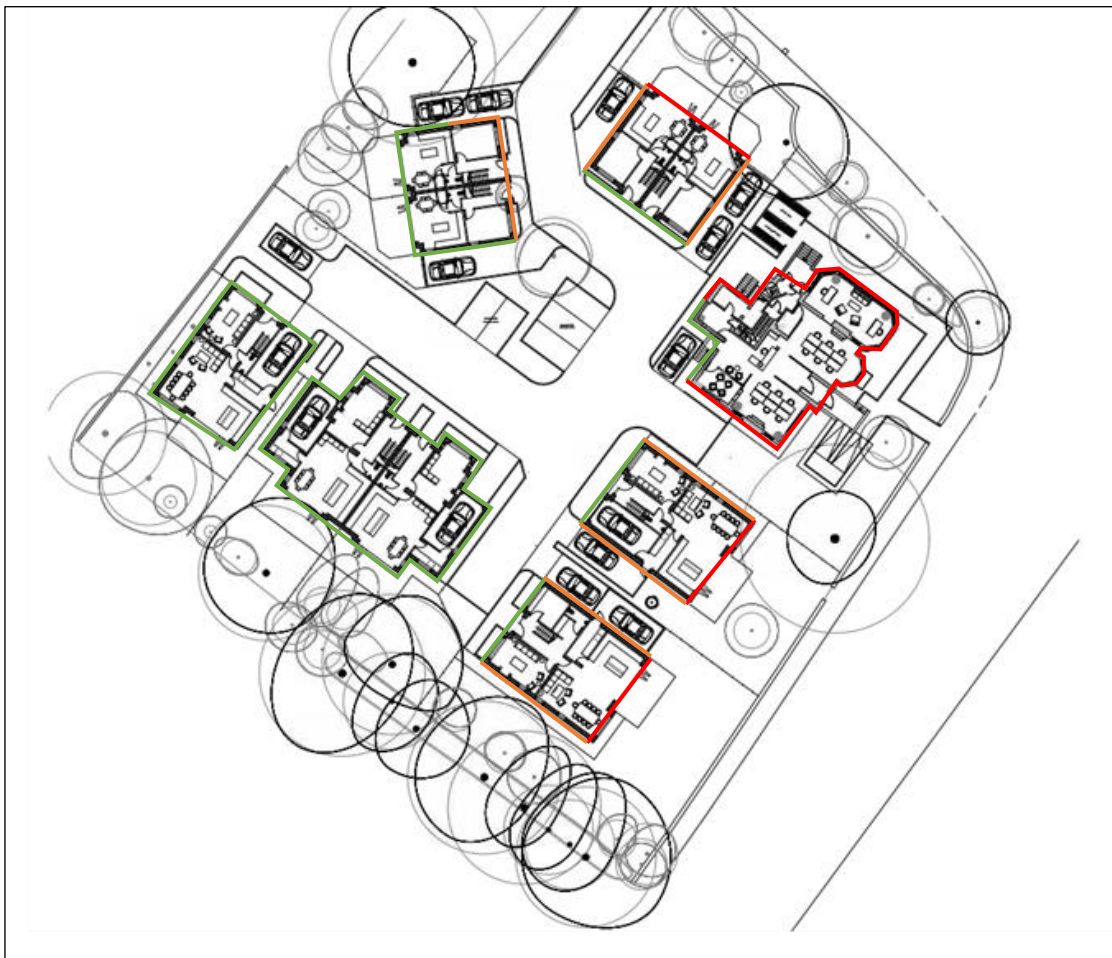
At this stage the exact glazing configurations are unknown, however, based on the results of the noise survey, the following detailed specifications for the windows are provided.



It is essential that prospective suppliers can demonstrate compliance with the acoustic performance detailed in the above specification rather than simply offering a generic glazing configuration.

Zone	Sound Reduction Index, R, (dB) at each Octave Band Centre Frequency (Hz)						
	63	125	250	500	1000	2000	4000
Red	23	25	28	40	43	45	47
Orange	23	24	26	40	43	45	47
Green	20	20	23	30	30	30	30

The location of each glazing zone is shown on the plan below:



Glazing Type Zones for Residential Dwellings

It should be noted that the glazing to the Greenfinch pub is to be retained. It is unlikely that the existing glazing would be sufficient in controlling noise ingress. As such, where glazing to the proposed dwellings is to be retained a suitable secondary glazing system will likely be required.



3.0 External Amenity

On this scheme, there are private gardens to the rear of all of the 10 No houses within the development, in this regard, MCC has a desired maximum noise level of 55 dB $L_{Aeq,T}$, which BS8233:2014 states “*might not be possible at the outer edge of these areas, but should be achievable in some areas of the space*”.

Our calculations indicate that the private gardens to the rear of the development (ie those gardens that are away from the adjacent roads are likely to achieve the desired level of 55 dB $L_{Aeq,T}$. However, the gardens that look out to the adjacent roads are expected to have noise levels up to 65 dB $L_{Aeq,T}$. See the plan below showing the expected noise levels across the development.



We understand that following liaison with the planners at MCC, a desire to avoid any fencing was expressed by MCC due to the visual impact of any fencing. Therefore, the scheme is being designed with a dense hedgerow around the perimeter gardens.



Ultimately, given the context of the site, the potential benefits of the development and the planners initial desire to avoid fencing should be considered when considering the noise in gardens and that introducing any screening to reduce the noise levels in the most affected gardens will affect the aesthetics of the development.

4.0 MVHR Noise

We understand that all the dwellings will be ventilated via a dedicated MVHR unit to meet the requirements of Part F of the building regulations. As selections have not been made, the contractor shall ensure that noise from the MVHR systems do not exceed the following specifications:

Noise levels does not exceed the following Noise Rating (NR) levels when measured with a precision grade sound level meter set to “fast” response.

Area	MEP Upper Noise Limit to Internal Areas (L_{eq})
	Trickle (Background)
Bedroom	Day – NR30 Night - NR25
Living Room / Kitchen	Day - NR30
Bathroom, En-suite	NR40

“NR” refers to Noise Rating curves as defined in ISO R 1996.

5.0 Internal Noise Transfer (Office to Dwellings)

The ground floor unit of the former Greenfinch is to be an office for Wren Properties. The office will be used for typical office use between the hours of 08:30 and 17:30.

The floor construction between the office and the dwellings above is understood to be British Gypsum Silent Flooring System (C204003) with a sacrificial ceiling below for services. For clarity the construction is understood to be as follows:

- 21mm T&G wood flooring on Gyproc Plank 19mm on Gypframe SIF Floor Channel
- Timber joists at 450mm centres. Gypframe RB1 Resilient Bars fixed at 450mm centres lined with an inner layer of Gyproc Plank 19mm and an outer layer of Gyproc FireLine 12.5mm with 100mm Isover Spacesaver Ready-Cut in the cavity.
- Sacrificial ceiling (assumed 12.5mm Wallboard) supported on MF to allow for ceiling lights and to conceal services.



We would expect the above to achieve at least $D_{nTw} + C_{tr}$ 45 dB if built to a good standard.

With regards to a suitable noise transfer limit, we would suggest that as the units will be ventilated via MVHR units and with consideration the need for spectral noise control in octave bands, we would propose that reverberant noise levels from the office unit within the residential spaces above should be controlled so as to not exceed NR 20 $L_{eq,T}$ in the proposed dwellings.

Based on the above the table below details the limiting sound pressure level in the ground floor office such that noise transfer does not exceed NR20 in the apartment above.

Description	Octave Band Centre Frequency (Hz)					
	125	250	500	1k	2k	4k
Daytime Criteria in Dwelling (NR 20)	39	31	24	20	17	14
Level difference of Proposed Floor (dB <i>D</i>)	35	48	56	60	65	65
Internal noise level limit in retail unit (dB L_{eq})	74	79	80	80	82	79

The above limiting noise level equates to an A-weighted sound pressure level of 86 dB L_{Aeq} which is unlikely to be exceeded by typical office use. As such, we consider the proposed floor construction suitable in controlling noise transfer between the proposed office and the apartment above.