

Design, Access and Noise Statement

For

**Retail to ground floor; 1no 2 bed apartment
to first and roof floors**

at

land at 10 Rochdale Rd, Middleton

On Behalf of

Mr M Moghami



M A H E
Architecture

The following Design and Access Statement has been written to meet the requirements of the Government Guidance on changes to the development control system which became effective from the 10th August 2006.

The Statement should be read in conjunction with all other information that forms the Planning Application for the proposed office building.

This Design and Access Statement accompanies the full planning application for the demolition of the unsuitable single storey metal clad storage building at the entrance to the industrial site and its replacement with a new building containing light industrial area, office and welfare facilities. There is also a warehouse extension elsewhere on the site. The new buildings will enhance facilities for the staff at the site.

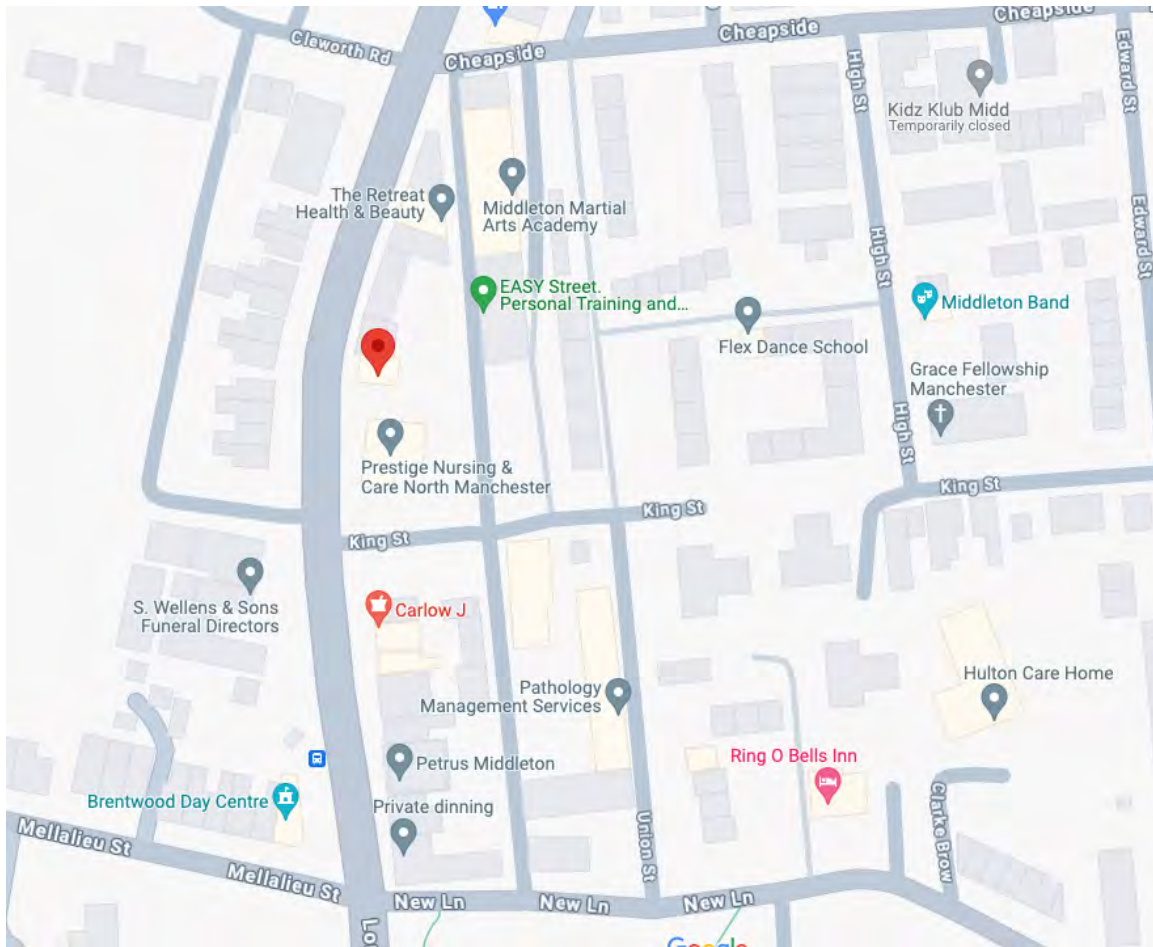
An appraisal of the context is followed by an explanation of how the proposed building and change of use relates to this, followed by how the design principles and concepts in relation to the amount, layout, scale, landscaping and appearance relate to the development. The proposed access arrangements are also considered to ensure inclusive access for all

Site & Surroundings

The application site is located at land adjacent to No10 Rochdale Rd, Middleton M24 6DP.

The site is located close to Middleton town centre with strong links into Oldham, Ashton and Greater Manchester via the nearby M60 Ring road.

The site is an unused and undeveloped site with the entrance to the road taken directly from Rochdale Rd A664



Map extract of site and surrounding area (NTS)



surrounding area (NTS)



The site (NTS)

The 180sqM site has pedestrian and vehicular access from Rochdale Rd to the West. It is located centrally in an dominant residential area. The site is currently an overgrown eyesore and is undeveloped.

The full area of the site is also bounded by No10 to the north, no 4-8 to the south and Spring Gardens at a raised level to the east.

History

Upon searching the Local Authorities planning records, an approval was granted under ref 15/00293/FUL in March 2015 for a retail unit at ground floor, with a 2bed apartment over.

The approval has never been implemented

Planning – Application Summary

[Help with this page](#)

15/00293/FUL | Erection of two storey building comprising shop (use class A1) to ground floor and self-contained, two-bedroom flat to first floor (Resubmission of 14/00290/FUL) | Land Adjacent 10 Rochdale Road Middleton Rochdale Lancashire

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Reference	15/00293/FUL
Application Validated	Mon 09 Mar 2015
Address	Land Adjacent 10 Rochdale Road Middleton Rochdale Lancashire
Proposal	Erection of two storey building comprising shop (use class A1) to ground floor and self-contained, two-bedroom flat to first floor (Resubmission of 14/00290/FUL)
Status	Decided
Decision	Grant subject to conditions
Decision Issued Date	Fri 10 Jul 2015
Appeal Status	Unknown
Appeal Decision	Not Available

There is 1 [case](#) associated with this application.

There is 1 [property](#) associated with this application.

Design Considerations

The proposal for the site is to continue the existing theme of commercial/residential mix by erecting a shop at the ground floor level and a two bedroom self-contained flat on the first / attic floor.

The proposed building is designed to match (in external appearance) to the existing adjacent buildings with brick walls and grey coloured roof tiles. The proposed design of front elevation reflects the existing properties by retaining arches over the windows, window cills and the vertical aspect of the windows. A three windows arrangement has been designed at the first floor level to reflect the adjoining properties.

The proposed elevation to the shop front has exceeded in design the existing properties by decorative timber features which is also shown below the cill levels of the shop windows.

The Proposed side elevation has been enhanced by the introduction of vertical course above the door and window and the window on the first floor, above the door has been brought in line with the door on the ground floor and the same window has been changed to a conventional type to compliment the door arrangement.

Similarly, the rear elevation has been amended by introducing two windows at first floor level. The rear elevation is broken visually by a rear outrigger.

Although there are a number of shops in the vicinity, the improvement in the economy of the local area starting to take place, it is anticipated that a positive affect will soon take over the area.

Access

Horizontal

The building will provide full wheel chair access with level threshold access.

Vertical Access

The staircases will be building regulation compliant for residential use.

Refuse

The proposal landscaped the area to the rear to provide green space and to provide a secure yard located to the rear which contains the space for bins. There are separate areas for the retail and residential space. The bins would then be brought onto Rochdale Rd via the side entrance alongside the commercial bins for collection by the refuse department.

Parking

There are no parking spaces allocated directly on the site. This is due to its location close to the town centre and on a main A road. Parking can be on Spring Gardens

Public transport

Due to the site location on trunk roads, the proposed site is easily accessible by public transport.

Cycling

Currently, the scheme does not accommodate for off storage for cycles. The client proposes to install 2no Sheffield bike racks for use by staff to eliminate the use of car journeys.

There will also be a shed installed for use by the apartment for cycle storage and the like



Refuse and Site Waste

Refuse storage will be provided within the unit for both general and recyclable waste. Recycling bins will be provided inline with LA guidelines.

Access to site for others

Site is readily available for access for deliveries. Vehicles can enter and leave the site in forward gear.

Noise

Noise Assessment Criteria

In BS 8233: 2014 (Sound Insulation and Noise Reduction in Building, Ref.4) design criteria is provided for noise levels inside buildings : summarised these are :

Bedrooms : $L_{Aeq} = 30$ dBA

Lounge : $L_{Aeq} = 35$ dBA

The above 30 dBA level is acceptable as avoiding sleep disturbance.

Road Noise

Average-sized cars will account for most of the traffic noise. Even in areas where the percentage of heavy vehicles is more than usual, the noise of normal cars will still dominate, as they tend to travel at faster speeds.

Cars produce two types of noise: propulsion noise and tyre noise. Under 34 mph, propulsion noise is the main issue, and over that speed, the sound of the tyres on the road becomes the main cause of noise pollution. However, due to advancing engine technologies, tyre noise from new vehicles can become an issue at just over 12 mph.

- The legal noise limit for a car exhaust in the UK is **82dB**.
- The average car produces **62dB** driving at 30 mph.
- At 50 mph, a car produces noise emissions of **~70dB**

Trucks are disproportionately responsible due not only to their size, but the height of their diesel stack. This can be a particular problem on smaller backstreets where the truck is likely to accelerate and decelerate, and where body rattle is more audible. In areas where trucks make frequent deliveries, the reversing siren is yet another pain point that will need to be factored into any soundproofing solution.

- Drop-sided trucks produce noise in the range 40-50 Hz mostly due to exhaust noise.
- HGVs have two frequency peaks: 63 Hz and 630 Hz, due to exhaust and body rattle.

Noise from motorbikes can be especially intrusive. There are restrictions on the maximum noise levels for a motorbike, yet these vary depending on when the bike was first used, meaning that you can often hear bikes producing noise of over **80dB** – and mostly in the low and mid-low range that can be tricky to combat.

- Cruiser bikes (i.e. Harley Davidson) produce noise that tends to lie predominantly in the 100-400 Hz range. **84.8dB Lmax**
- Mopeds and scooters tend to dominate the 1000-2000 Hz range, with a broad range from 200-5000 Hz. **62.3dB Lmax**
- Sports bikes tend to have a fairly flat spectrum in the 125-8000 Hz range. **78.3dB Lmax**

The design of the new structure elements has to be designed for the worst case scenario. The upgrades will achieve the attenuation that must be offered in order to achieve the required internal levels as above.

It is generally accepted that an open window will achieve an attenuation of 15 dBA to the external noise – however it has been suggested that this figure is too high and is more likely to be in the region of 10 dBA – as a compromise a figure of 12 dBA has been used for the attenuation of an open window.

The requirements specified in the following report should be regarded as the minimum.

Also relevant are the World Health Organisation (WHO) Guidelines for Community Noise – these identify that sleep may be disturbed by short term noise events and the level associated with this is 45 dB LA_{max} inside the bedroom – this relates to 60 dB LA_{max} external to the bedroom.

Discussion

Utilising BS8233 for Standard road noise for the report, the standard for this site is:-

Traffic max DBA – 66

Utilising BS4142 for Standard for commercial sound for the report, the standard for this site is:-

Entertainment DBA - 77

If it is assumed that the structure of the proposed properties is based on the requirement to attenuate the highest level of sound for traffic then the noise level at the facades of the proposed properties could be **LA Max = 66** catering for the 'worst case situation'.

LA max needs to be attenuated by $66 - 30 = 36$ **dB**.

The above required attenuations can be achieved by using – for example – IGU's of 10mm / 6 to 20mm / 6 mm which have – with reference to the data sheet at the end of the report – a quoted 37 dB.

With respect to the ventilation of the habitable rooms these are usually regarded as the bedrooms, lounges, dining kitchens and kitchens but only if they are dining kitchens.

The type of ventilation fitted will depend also upon the number of air changes per hour that are required by Building Regulations – this is beyond the scope of this report – however suppliers of suitable acoustically treated ventilation systems can be found on the following web sites;

www.passivent.com

These supply vents that fit into the window header and can be acoustically treated or:

www.vents.com

supply core vents that are wall mounted.

Both these types of vent will be suitable acoustically provided that they meet the minimum attenuation requirements

Or any ventilation unit having a quoted $D_{n,ew}$ **in excess of 22 dB.**

The above specification caters for the 'worst case situation' for the highest noise level with respect to BS 8233 : 2014.

It is anticipated that the glazing will be two different specifications – acoustic to front elevation and traditional double glazed units to the rear. It is important that they are fitted into the correct windows.

It is important that the windows are correctly fitted into the wall – gaps and holes around the frames must be kept to a minimum and those that occur must be fully sealed with a high density sealer – *on no account must light weight expanding foams be used.*

In general the construction of the building must be undertaken with great care as even small gaps will reduce the attenuation provided by the structure and even if a complete wall, which may have an attenuation of 50 dBA has a hole in it equivalent to 1/1000 of the wall area the effective attenuation of the wall is limited to a maximum of 30 dBA.

When the windows are open the only important consideration is the area of the opening: if it is 10% of the total area the noise attenuation will be of the order of 12 dBA regardless of the construction of the remaining 90% of the wall.

With regard to the roof, it is a pitched tiled roof with an under ceiling and mineral fibre insulation then an attenuation of the order of 45 dBA should be achieved.

The attenuations required will be easily met with the proposed construction of the external walls .

The external noise can also be further reduced by introducing an acoustic doors at the entrances. For entrance to the apartment, this could be achieved by means of a 54mm thick timber fire door (1 hour fire rated) which has a quoted attenuation of $R_w = 35$ dB. If required this door can have a 900mm x 175mm vision panel of 7mm fire resistant glass.

The entrance to the shop will be glazing.

It is very important that both these doors are fully sealed onto their respective frames around the whole perimeter of the door.

External Walls

The building requires maximum noise protection from the elevation fronting Rochdale Rd Market Place. The proposed walls are to be constructed in line with the current building control requirement (as at time of construction). The suggested specification is:-

100mm suitable facing brick; 50mm clear residual cavity; 75mm Kingspan Kooltherm insulation fixed to internal leaf. Inner leaf constructed using 100mm, 0.15 W/m²K lightweight block, e.g. Celcon solar, Thermalite turbo. Internal finish to be 12.5mm plasterboard on dabs.

The thermal spec for the wall is to achieve minimum U Value of 0.18 W/m²K

This specification provides both acoustic and thermal compliance

External Areas

These are governed by the requirements of The World Health Organisation which briefly states that the noise level in private amenity areas should not exceed 55 dBA for serious annoyance or 50 dBA for moderate annoyance.

Using external levels at 65dBA max, this is in excess of the levels required by the WHO.

Therefore to the boundary of the proposed residential development there needs to be an acoustic screen constructed - according to **BS 5228 : Part1 : 2009 Section F.2.2.2.1 Section C** an attenuation to the noise from this source of the order of 5 to 10 dBA expected –an attenuation of 10 dBA is assumed – if this is the case then the noise level at the residential properties could be of the order of **55 dBA**.

To the rear boundaries, the screen must be of solid construction and be at least 2.0m high and have a mass of 15 kg / sq m – for a timber fence then there must be no gaps between the fence and the support posts or the ground.

It is worth noting that BS 8233 : 2014 states that the main criteria to be considered are the internal levels in the various rooms – and as can be seen from the above if the glazing / ventilation specified is installed then these will be met

Therefore the external levels in 'private amenity areas' whilst obviously desirable are possible not the main criteria and as additional acoustic screening has been recommended to be included then it is likely that the above is the best that can be practically achieved.

Conclusion

- The proposed walls are to be built to satisfy the current building regulations at the time of construction
- The glazing / ventilation recommended above will result in internal levels within the proposed residential properties that comply with the requirements of BS 8233 : 2014.
- It is recommended that an acoustic barrier is constructed on the boundary of the proposed properties to a height of 2.0m.
- The proposed party floors are to be built to satisfy the current building regulations at the time of construction
- The proposed party wall is to be upgraded to satisfy the current building regulations at the time of construction

Summary

Upon the successful planning approval, the proposal will:-

Bring a disused brownfield site back into use in line with national guidelines

Provide additional economic functions to the local authority, employment market etc

Provide improved street scene by completing the architectural amenity

Improve the visual amenity of the area by removing areas of unmaintained landscaping

An improved eco-friendly build

Rationalisation of the street frontage

Providing additional residential unit for local market rent

APPENDIX

List of Drawings in support of the application

807-01 Location Plan / Existing site Layout

807-02 Proposed Layouts / site plan

807-03 Proposed Elevations

Acoustic Glazing

Acoustic Door



Pilkington Optiphon™

	dB sound reduction index by octave band – Hz						$R_w(C;C_{tr})$	R_w	R_w+C	R_w+C_{tr}
	125	250	500	1000	2000	4000				

Configuration single glazing

6.8 mm Pilkington Optiphon™	21	26	31	35	37	38	35(-1;-3)	35	34	32
8.8 mm Pilkington Optiphon™	24	28	34	38	37	43	37(-1;-4)	37	36	33
10.8 mm Pilkington Optiphon™	28	31	36	38	39	47	38(-1;-2)	38	37	36
12.8 mm Pilkington Optiphon™	30	32	37	39	41	51	39(-0;-2)	39	39	37
16.8 mm Pilkington Optiphon™	29	34	37	39	46	55	40(-0;-2)	40	40	38

Configuration Insulating Glass Unit (IGU), thickness in mm

6 / 6 to 20 mm / 6.8 Pilkington Optiphon™	23	24	34	42	43	52	38(-2;-5)	38	36	33
6 / 6 to 20 mm / 8.8 Pilkington Optiphon™	24	26	40	48	46	54	41(-3;-7)	41	38	34
6 / 6 to 20 mm / 10.8 Pilkington Optiphon™	23	28	41	47	45	55	42(-3;-7)	42	39	35
6 / 6 to 20 mm / 12.8 Pilkington Optiphon™	20	29	43	47	46	49	42(-3;-8)	42	39	34
8.8 Pilkington Optiphon™ / 6 to 20 mm / 12.8 Pilkington Optiphon™	26	36	46	50	52	63	47(-2;-7)	47	45	40
16.8 Pilkington Optiphon™ / 6 to 20 mm / 16.8 Pilkington Optiphon™	29	40	45	47	54	68	48(-2;-6)	48	46	42

The above IGUs with Pilkington K Glass™ on one pane and a 16 mm 90 % Argon-filled cavity achieve a U value of 1.5 W/m² K

Further information on solar and thermal performance is available on the Pilkington website using the Spectrum program: www.pilkington.com/spectrum

Impact classification EN12600 Class 1(B)1 for all above Pilkington Optiphon™ products

$R_w(C;C_{tr})$ are in accordance with EN171-1

Non Pilkington Optiphon™ glass products. Figures from BS EN 12354

	dB sound reduction index by octave band – Hz						$R_w(C;C_{tr})$	R_w	R_w+C	R_w+C_{tr}
	125	250	500	1000	2000	4000				

Configuration single glazing

4 mm Float Glass	17	20	26	32	33	26	29(-2;-3)	29	27	26
6 mm Float Glass	18	23	30	35	27	32	31(-2;-3)	31	29	28
8 mm Float Glass	20	24	29	34	29	37	32(-2;-3)	32	30	29
10 mm Float Glass	23	26	32	31	32	39	33(-2;-3)	33	31	30
12 mm Float Glass	27	29	31	32	38	47	34(-0;-2)	34	34	32

Configuration Insulating Glass Unit (IGU), Float glass, thickness in mm

4 / 6 to 20 mm / 4	21	17	25	35	37	31	29(-1;-4)	29	28	25
6 / 6 to 20 mm / 6	20	18	28	38	34	38	31(-1;-4)	31	30	27
6 / 6 to 20 mm / 4	21	20	26	38	37	39	32(-2;-4)	32	30	28
10 / 6 to 20 mm / 4	24	21	32	37	42	43	35(-2;-5)	35	33	30
10 / 6 to 20 mm / 6	24	24	32	37	37	44	35(-1;-3)	35	34	32

Note that these are conservative figures and cover all products by European glass manufacturers.

R_w = Weighted sound reduction. This scale allows for the response of the human ear and could be used for determining a suitable product to reduce noise such as voices.

C = An adjustment to the R_w scale that could be used for selecting a product to reduce noise from music, radio, tv, high speed traffic and other medium to high frequencies.

C_{tr} = An adjustment to the R_w scale that could be used for selecting a product to reduce noise from urban road traffic, disco music and other noises with a large component of low frequencies.

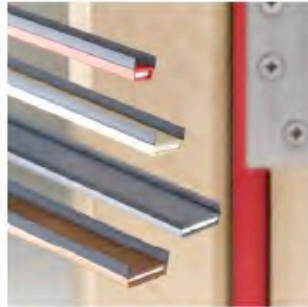
Note that a 3 dB difference is barely discernable, 5 dB is clearly discernable and 10 dB is a doubling or halving of the noise.

Acoustic, Smoke and Fire Seals

Our DS and Finesse™ seals offer the ultimate in acoustic, smoke and fire protection with the added benefit of thermal containment too. Their unique design means that whichever way around the product is installed, the seal can always be fitted in the correct place, maintaining the integrity of the acoustic and smoke seal at the ironmongery points.

DS and Finesse™ Seals

- Superior acoustic performance to meet the requirements of Approved Document E.
- Successfully tested for fire and smoke performance in accordance with BS 476: Pt.22: 1987, BS 476: Pt.31.1: 1983 and BS EN 1634-1:2008 (Approved Document B).
- Exceptionally low frictional resistance for ease of door operation (Approved Document M).
- Successfully tested for air tightness under BS 476: Pt.31.1: 1983 – this makes a positive contribution to thermal containment between spaces within a building, as well as for external doors.
- Highly durable – has achieved over 1,000,000 opening and closing cycles on a full size door assembly.
- A choice of sizes to cover both 30 and 60 minute applications.



DS Seal

- Available in a range of standard colours, with black fins – to blend or contrast with the doorset as required. White fins are also available (please ask for details).
- Its unique shape allows the product to be stacked, ensuring minimal storage space and protection of the fins.



Finesse™ Seal

- Available in a range of standard colours, plus woodgrain and metallic finishes for superior aesthetics.
- Its transparent fin construction provides a virtually invisible fitted product – ideal for upgrading doorsets in heritage projects.

LAS8005 si Drop Seal

Medium Duty



A slim-line, concealed drop seal featuring a high efficiency mechanism. The seal is lifted clear of the floor as soon as the door is opened by a few millimetres – resulting in exceptionally low door operating forces. It requires no power connection.

Key benefits

- Tested for acoustic performance with BS EN ISO 10140-2: 2010.
- Meets the smoke leakage performance requirements of BS 9999 when tested in accordance with BS 476: Pt.31.1: 1983.
- Tested for reliability, the seal completed 1,000,000 cycles without failure.
- Can be fitted to aluminium doors by door fabricators.

Location

- Single swing doors.
- For use on both right and left handed doors.

Use with

- Any perimeter seal.

Min/max gap size

- 1mm/13mm.

Seal material

- Grey silicone rubber.

Lengths

- 335mm, 435mm, 535mm, 635mm, 735mm, 835mm, 935mm, 1035mm, 1135mm and 1235mm.
- Note: Each length can be cut to the next size down.
- 335mm can be cut back to 255mm.

Fixing

- This seal is mortised, and screw fixed via the flanges.
- Fixing screws are supplied; fixing holes are pre-drilled and countersunk.

Adjustment

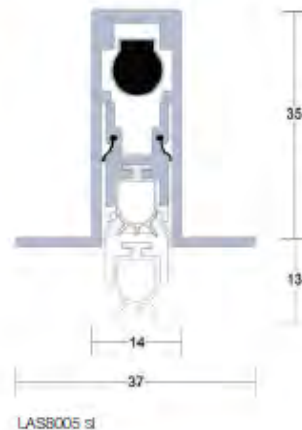
- Self-levelling on uneven surfaces. Seal height can be adjusted independently of the fixing screws.

Finishes

- Silver anodised aluminium, with grey or black plastic end caps. Grey or black silicone rubber.

Acoustic Performance

- Weighted Sound Reduction Index (Rw): 31dB.



LAS8005 si


LAS8005 si
(Shown with LAS4001)
