



SUPPORTING STATEMENT

The planning application is for the change of use of garage/workshop from residential to commercial so Mr Addison, the property owner, can convert at most 4 vans to camper vans (but in reality it will probably be two maximum) as a hobby.

The van conversion is a hobby of Mr Addison who has no intention to turn this into a full time business. The conversions will be carried out in Mr Addison's spare time. The works will be carried out on an occasional basis but at most Monday to Friday from 9am to 5pm although many weeks there will no activity at all on site.

The hobby does not require any HGV deliveries to the site although there will be van deliveries but no more so than any domestic property from online shopping.

The noises emanating from the hobby will be no more than would be expected from domestic properties tending to their gardens (lawn mowers for example) or carrying out DIY.

No hazardous chemicals will be used with this hobby.

A Noise Impact Assessment was carried out to ascertain whether there would be any negative impact from noise at nearby residential properties and the conclusion of the same was that there was unlikely to be any significant impact on neighbours and as the noisier activities would only be carried out at most 2-3 days per year, the impact is effectively negligible.

In addition to the above, the Noise Consultant made the following points:-

- The Environment Health Officer assumed that the sound of metal cutting would potentially be produced for 20 minutes in every hour of every week when it will only occur very infrequently and at most a few hours a year, and will not be increased.
- The noise produced will only happen a few hours a year and as such the noise impact will be negligible and no more than domestic tasks such as lawn mowing or hedge trimming.



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**Noise Impact Assessment of Activities
in new garage facility**
17/00044/APP

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Date: 24 May 2017

1. Introduction

The planning application 17/00044/APP was submitted with the title: Proposed change of use of domestic garage to commercial garage at 17 Cathay Terrace, Cullen. It was submitted on advice from the Planning Service that it is required for the activities the owner plans to conduct within it.

This Noise Impact Assessment had been based on the applicant's stated plans for the garage. He is aware that if his plans were to change, resulting in a significant change to the sound emissions, then a re-assessment may be required and approval may, or may not be given.

Two issues are clear from discussions with the applicant:

1. The intended use of this garage is similar to activities that would normally be acceptable in domestic garages
2. The amount of work done in the garage will be very much less than in a commercial garage, resembling domestic usage.

The Environmental Health Service have requested that the sound emissions from the use of this facility be assessed using PAN1 2011. The flow chart for this is shown in Figure 1. This requires a qualitative assessment of whether the emissions will cause disturbance, as well as a quantitative assessment, following BS4142(2014)¹.

2. Description of use

It is recognised that the use of this facility is unusual: a recently built building that has applied for permission to conduct business as a commercial garage would normally be expected to operate as a commercial garage. However, the applicant is clear that commercial work will be minimal, no-one will be employed and the intention is for the building to allow the applicant to pursue his hobby of converting camper vans, albeit that the vans will be sold once converted. Whilst the application was for the conversion of 4 campervans the applicant was advised that the planning service may only allow a reduced number. He wanted to be sure that there will be permission for the conversion of 2 campervans per year.

For illustration, a campervan undergoing conversion is shown in Figure 2. The view shown to the garage door, which will normally be closed, is shown in Figure 3 and the interior of the campervan with the hole cut in the roof is shown in Figure 4.

¹ PAN 1 was written prior to the updating of BS4142. The most recent version of the British Standard will be used for the quantitative assessment.

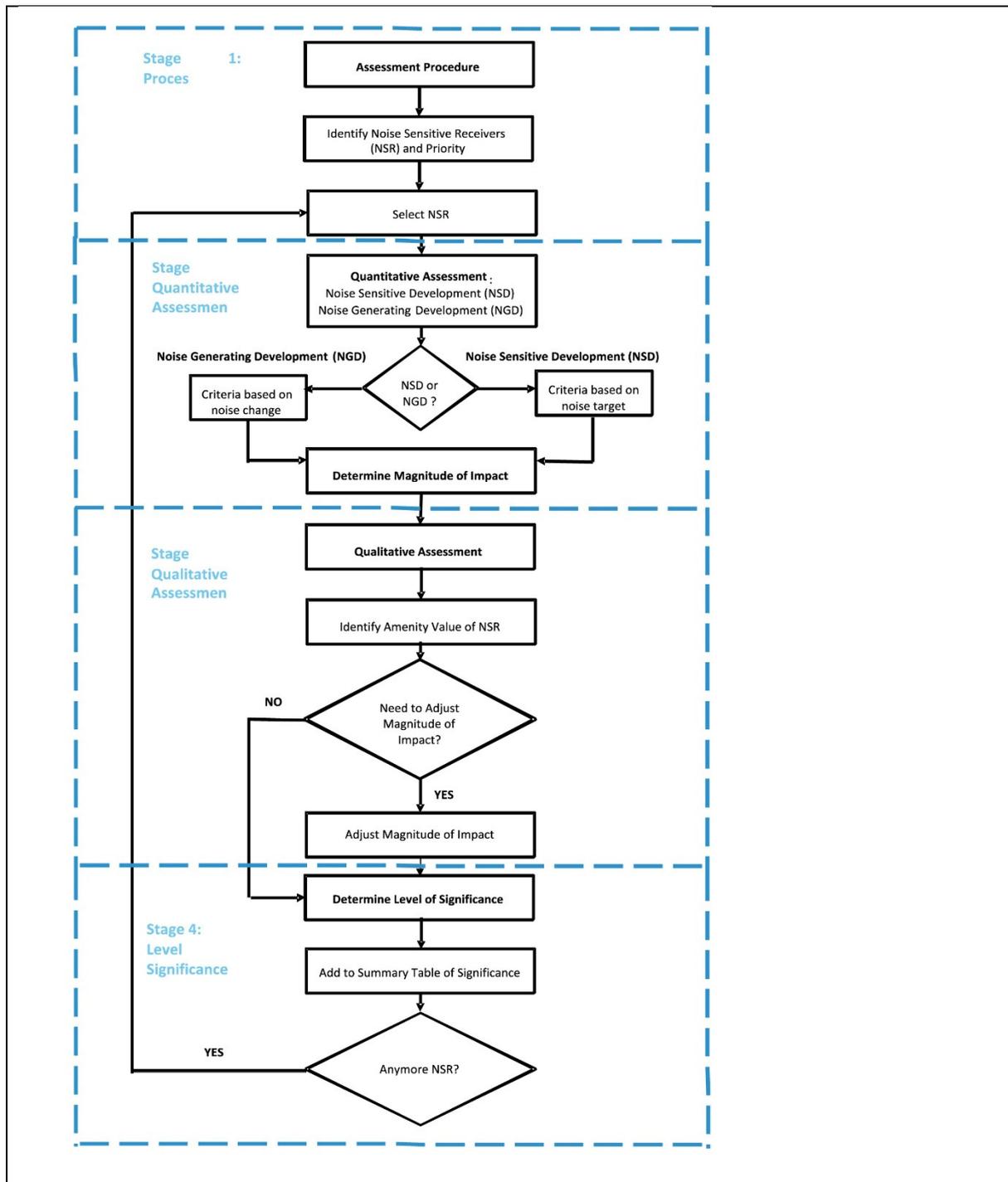


Figure 1: Flow chart of assessment procedure required by PAN1 2011

3. Identify Noise Sensitive receptors

This garage is located in a residential area. Its location can best be seen using the aerial image on: www.google.co.uk/maps, and entering the location: 57.687087, -2.818392. The nearest neighbours are houses, so are at high risk, as defined by PAN1 2011. The closest house is the other side of a

adjacent pathway. The distance from garage to the house is about 6 m. There is a school playing field behind the garage but the school buildings are at a greater distance, 40 – 50 m. The nearby houses are considered the highest priority.



Figure 2: Campervan in garage, looking from left hand side



Figure 3: Campervan in garage, looking from rear, right corner

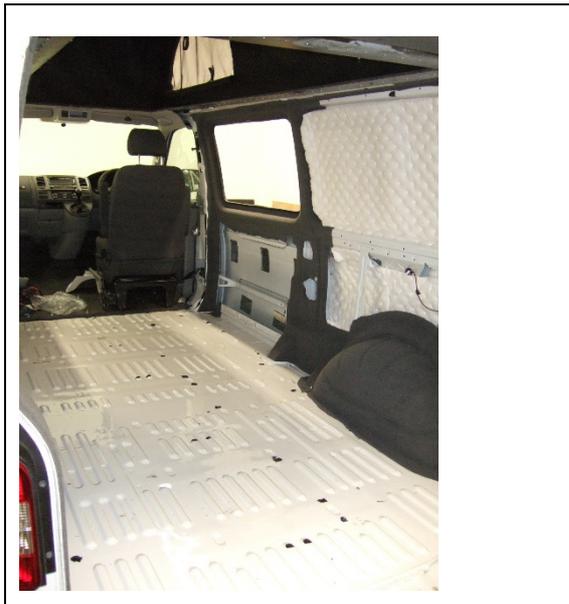


Figure 4: Campervan in garage, showing interior,

The information required to be reported by BS4142(2014) is listed in section 12 of the standard. This is provided below using the same headings, in italics.

4. Information to be reported for a BS4142(2014) assessment

a. Statement of qualifications, competency, professional memberships and experience

The author is a member of the Institute of Acoustics, has provided noise consultancy services for over 25 years and has attended recent meetings on BS4142(2014).

b. Source being assessed as follows:

1) description of the main sound sources and of the specific sound;

The owner advises that there are only two activities that make significant noise: cutting the hole in the roof of the van; and router holes out of wooden panels for the interior. Both these are done inside, with the doors shut, so benefit from attenuation of the building structure. The pressure washer needs to be used outside but this is for occasional car cleaning, and is a domestic operation.

2) hours of operation;

The garage will only be used between 9 am to 5 pm for jobs with any significant sound emissions.

3) mode of operation (e.g. continuous, twice a day, only in hot weather); statement of operational rates of the main sound sources

The cutting of the hole in the roof of the campervan takes a maximum of half a day, so the total noise emissions will be restricted to a half day twice per year.

Router of panels will be more frequent but the total operation will not amount to more than 2 – 3 days per year, in short periods over the year.

c. Subjective impressions, including:

1) dominance or audibility of the specific sound; and

Whilst it was not possible to test the metal cutting equipment the router was operated at the end of the monitoring test. When heard from outside the garage it was audible but of relatively low volume and sound frequency. The impression was that short periods of this type of sound would not be unduly disturbing.

2) main sources contributing to the residual sound.

During site visits there was much sound from children playing in the field adjacent to the property.

d. The existing context including an assessment of the sensitivity of the receptor

The sound levels in the residential areas would normally have elevated noise levels from, for example: noise from children playing nearby, grass cutting/strimming and normal domestic activities such as pressure washing, hedge trimming and building maintenance. It would not be

unusual for householders to spend a half day periodically maintaining their car, which might involve vacuum cleaning, buffing or sanding, all of which make noise, and may not be done inside an enclosed garage.

e. Measurement locations, their distance from the specific sound source, the topography of the intervening ground and any reflecting surface other than the ground, including a photograph, or a dimensioned sketch with a north marker. A justification for the choice of measurement locations should also be included.

This site is enclosed so finding a suitable site which kept the equipment safe was difficult and required some compromises. The location of the microphone is shown in Figure 5. Whilst this is located higher than normal, the location was chosen to approximate the sound levels in the neighbouring garden, and to keep it out of the way. Installing in the site owner's garden would have elevated sound levels from the surrounding vegetation. Whilst there was some concern that the microphone was too close to the garage wall, all other possible sites in the owner's property had greater concerns. It was considered that the site chosen was a reasonable indication of the sound levels in the neighbour's garden.



Figure 5: Garage showing Sound Level Meter's microphone arrowed on right



Figure 6: Amenity area of applicant's house showing garage on right and anemometer arrowed

f. Sound measuring systems, including calibrator or piston phone used:

1) type	Type 1 Sound level meter 2250 Calibrator 4231
2) manufacturer;	Brüel & Kjær
3) serial number; and	3000578 - SLM 3001468 - Calibrator
4) details of the latest verification test including dates.	23/11/2015 - SLM 27/06/2016 - Calibrator

g. operational test:

- 1) reference level of calibrator 94 dB
- 2) meter reading(s) before and after measurements with calibrator 93.9 dB
- after

h. Weather conditions, including:

1) wind speed(s) and direction(s);	0.5 – 2.5 m/s 75° N - 290° N
2) presence of conditions likely to lead to temperature inversion;	None
3) precipitation;	None
4) fog;	None
5) wet ground;	None
6) frozen ground or snow coverage;	None
7) temperature; and	Daytime 15° C
8) cloud cover.	1 – 4 oktas

i. Date(s) and time(s) of measurements.

Monitoring started at 13:45 BST on 17 May 2017 and ran continuously until 14:45 on 18 May 2017. The data collected between 17:00 and 09:00 was not included in the analysis as this period is not relevant.

j. Measurement time intervals.

The data was collected every 5 mins.

k. Reference time intervals.

As the garage will only be used during daytime working hours the reference time interval is 60 mins.

l. Specific sound level:

1) measured sound level(s);

The sound level of the router during operation on a wooden panel was $L_{Aeq} = 80 \text{ dB(A) @ 1 m}$

The sound level of the router operating as above from the outdoor microphone position was $L_{Aeq} = 50 \text{ dB(A)}$. The attenuation of the structure of the garage therefore gave sound attenuation of 30 dB(A).

2) residual sound levels) and method of determination;

The residual level was measured using the microphone position shown in Figure 5, over the daytime periods Afternoon 17 May 2017 and morning 18 May 2017.

3) ambient sound levels) and method of determination;

The ambient sound levels were also recorded and gave an average daytime level (L_{Aeq}) of 45 dB.

4) specific sound levels) and method of determination;

The sound of cutting metal is considered to be a maximum of that occurring when a grinder is operated on sheet metal material. Standard values for this activity are known to be 80 dB(A) @ 10 m. This is the same as 100 dB @1 m. This sound level is for continuous operation. Assuming that cutting will only occur for about 33% of the hour the sound level reduces to 95 dB(A). The building's attenuation will reduce this by 30 dB(A), giving 65 dB(A). Reduction from the source to the nearest neighbour's property, at about a further 6 m will reduce the sound level by a further 4 dB(A). Ignoring ground and air attenuation the sound level expected at the neighbours property is predicted to be an $L_{Aeq(1\text{ hr})}$ of 61 dB(A).

For router work using the same methodology the sound level at the nearest neighbour's house would be: 80 dB @ 1m, reduced to 75 dB as used for only 33% per hour. Reduction to monitoring point outside building = 30 dB. Further reduction to house at 16 m from source = -4 dB. Sound level at neighbour's house is therefore predicted to be $L_{Aeq(1\text{ hr})}$ 41 dB.

5) justification of methods;

A combination of test measurements and standard values have been used to assess the level of the two noise making activities. In the absence of a suitable piece of metal to cut this is was the only option available on the day of the test.

6) details of any corrections applied.

m. Background sound levels and measurement time intervals

The background was measured using 5 min averages of L_{A90} values. This gave a histogram as shown in Figure 7. The residual sound level was therefore 39 dB(A).

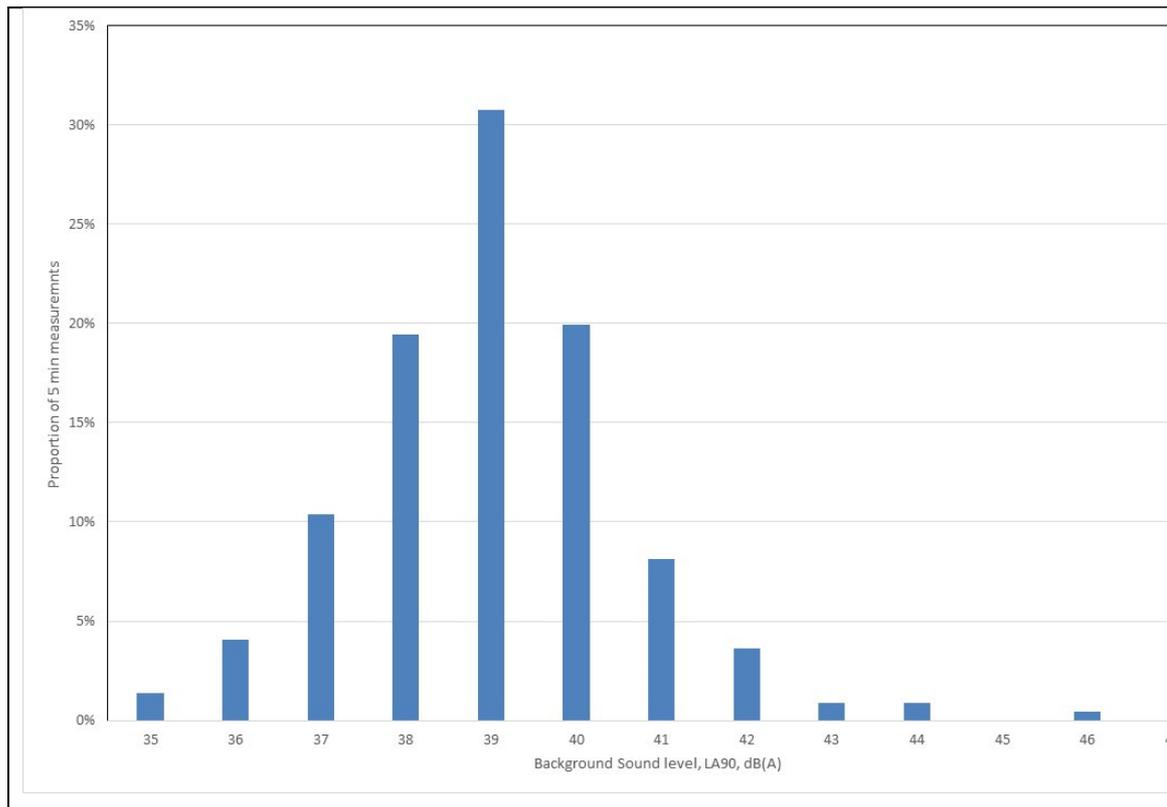


Figure 7: Histogram of measured background sound levels during day periods

Rating level(s):

1) specific sound level(s);

Metal cutting - 61 dB(A)

Router work - 41 dB(A)

2) any acoustic features of the specific sound;

The router noise was considered to possibly need an addition of +3 dB to account for the fact that it is an identifiable noise.

The metal cutting was considered to need +6 dB to account for intermittency and impulsivity.

3) rating levels.

Metal cutting - 67 dB(A)

Router work - 44 dB(A)

n. Excess of the rating levels) over the measured background sound and the initial estimate of the impacts.

Metal cutting - 28 dB(A)

Router work – 5 dB(A)

Metal cutting could have an adverse impact if it were to be done continuously.

Clearly the impact on residences at a greater distance will be less than that predicted for the nearest neighbour.

o. Conclusions of the assessment after taking context into account.

The context of the activities is that they are to be done very occasionally, and for very short durations. The noise emissions are at a level, and duration, that would generally be considered acceptable in a domestic situation, if they were produced by a lawnmower or a hedge trimmer. The impact of the sound emissions should therefore be no higher than normal domestic activities.

p. The potential impact of uncertainty

Extending the time period used for the residual sound, to 15 mins, may reduce the values to some extent. This could be done from the collected 100 ms values but it is considered that this will not affect the conclusions to this report.

Residual sound levels will vary: for example they will increase in windy weather and will be reduced at times when the local playing fields are not in use.

The values reported above may be higher than will actually occur as most of the metal cutting is likely to be done with a jigsaw, fitted with a metal cutting blade, instead of a grinder. This will be quieter. There are also other quieter tools available which the applicant may be able to use in the future, to further reduce sound emissions.

5. Qualitative Assessment

Taking account of the frequency and duration of the proposed activities, and comparing them to normal garden activities, the qualitative assessment concludes that the impact on the nearest neighbour would be minor. This is because any sound from the garage will occur during normal working hours only, not in the evening or at night. On the few occasions when the noisier activities will take place it is considered that the sound will be noticeable but unlikely to be more than mildly intrusive, for the duration amounting to 2-3 days per year. Within these periods most of the time will be router work which will be less intrusive, so causing negligible impact.

6. Level of Significance

For the duration of the activities of 2 – 3 days per year the level of significance is considered to be **slight to moderate**. This is unlikely to cause significant disturbance to neighbours.

Whilst it is known that there is concern that the activities will be extended the applicant confirms that this is definitely not his intention, as he just wants to use the garage as stated in his retirement.



ADDENDUM TO NOISE IMPACT ASSESSMENT

17 Cathay Terrace, Cullen **Proposed Garage**

The following comments were raised in relation to the Noise Impact Assessment and the response is noted below:-

Email from Farm Energy Consultants

Sirs,

My response to the queries is shown below, in red. Mr Addison has confirmed that he is in agreement with them.:

1. I note from paragraph 4. 2) that the times of operation will be from 9am to 5 pm for jobs with significant sound emissions . Could you please confirm if it is intended to operate the business at weekends and or bank holidays. What is meant by significant sound emissions?
*The term "significant sound emissions" was intended to indicate tasks that had potential to cause significant disturbance: cutting/grinding/router work, all of which are to have very limited duration.
The applicant will not do these tasks on weekends or bank holidays.*
2. Could you please clarify why it was not possible to test metal cutting equipment, given that this business is already in operation?
It has been stated that only 2 vans will be converted in each year. The van that was already in the workshop had already had its roof cut out so this process could not be repeated. As there was no similar metal that could be cut the sound levels from this process could not be measured at the time of the test.
3. There is no reference to noise levels when joinery work and internal fitting works are being carried out.
The other work was considered to have lower sound emissions and was not considered to pose a risk of disturbance, given the attenuation of the building structure and the door.
4. It would appear that garage door would be the weakest point in terms of the escape of sound from the building and noise emanating from that direction may be as loud, or louder still, than the nearest, as it is side on. Has the residential property in that direction (not the applicants) , been considered ?
The amenity area of the residence mainly considered in the report is 6 m distant from the garage door, at an angle of about 10°. The amenity area of the residence directly in front of the garage door is at a distance of about 35 m. The difference between the sound pressure level at 35 m compared to that at 6 m is 11 dB. This is considered to be more than the directivity of the noise passing through the garage door meaning that the more distant house is less at risk of disturbance than the neighbouring house.

The above can be submitted to Moray Council.

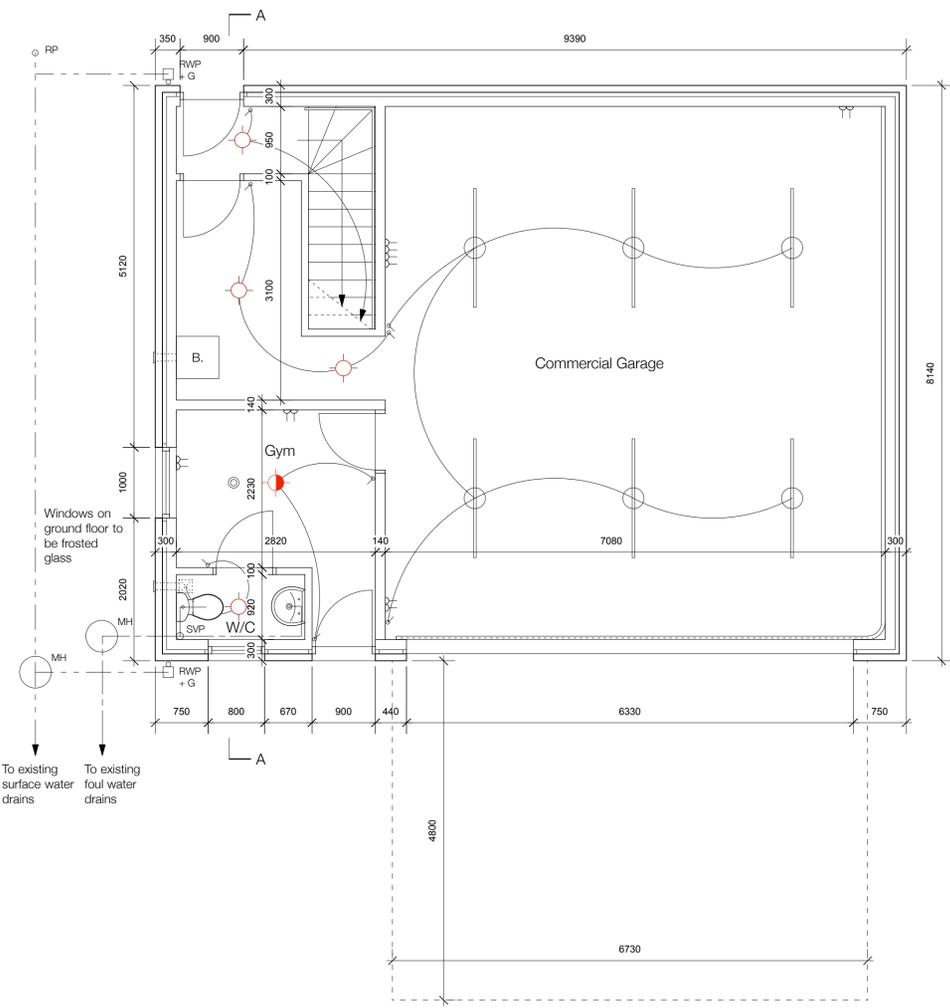
Thanks,

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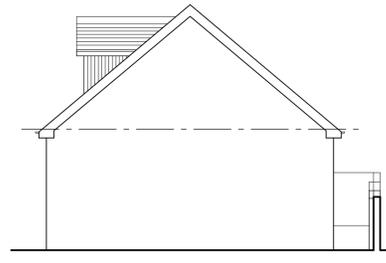
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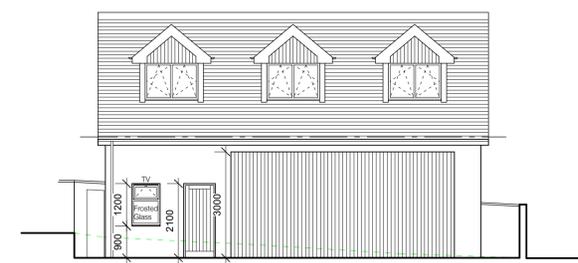
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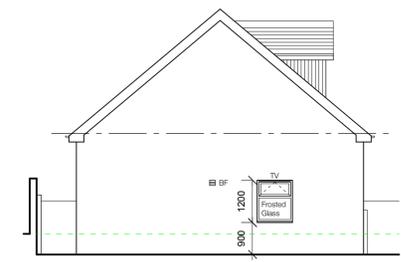
Ground Floor Plan 1:50



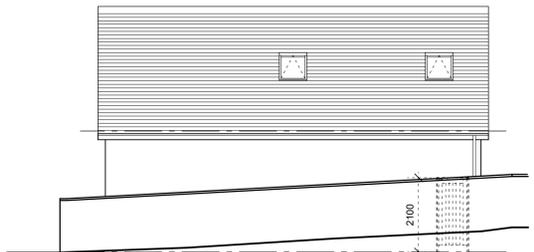
North Elevation 1:100



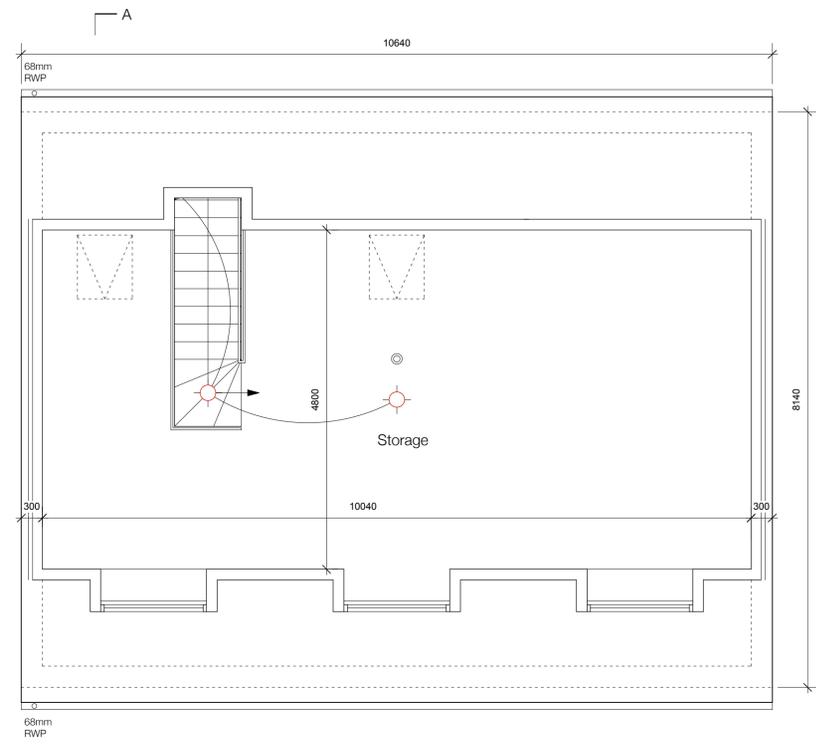
East Elevation 1:100



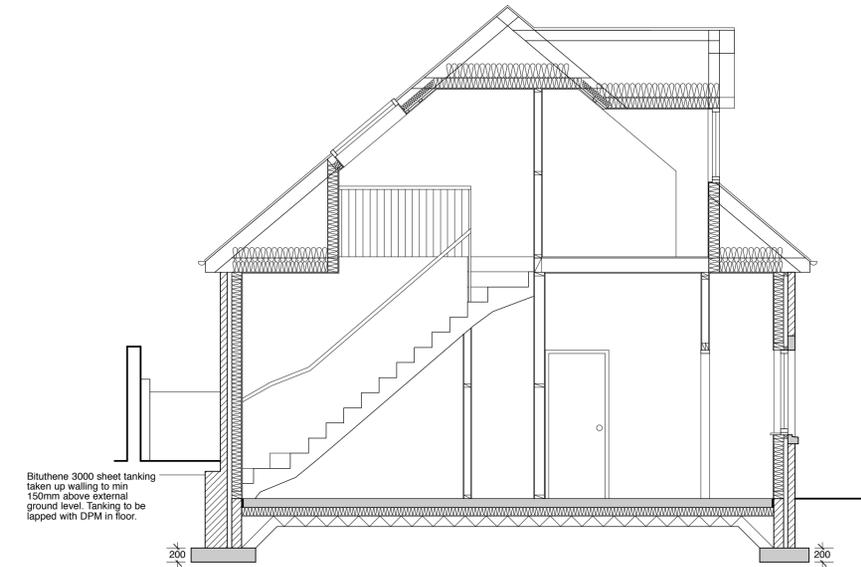
South Elevation 1:100



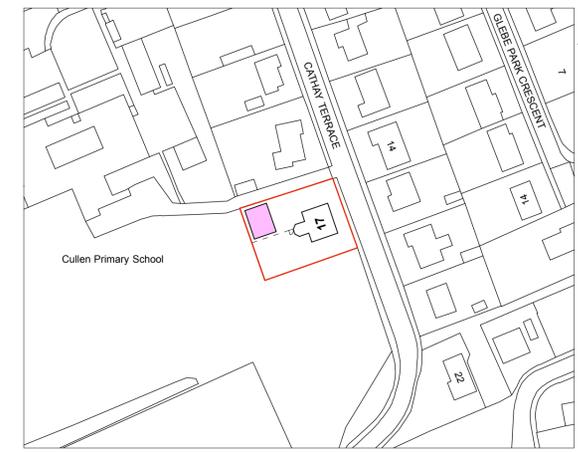
West Elevation 1:100



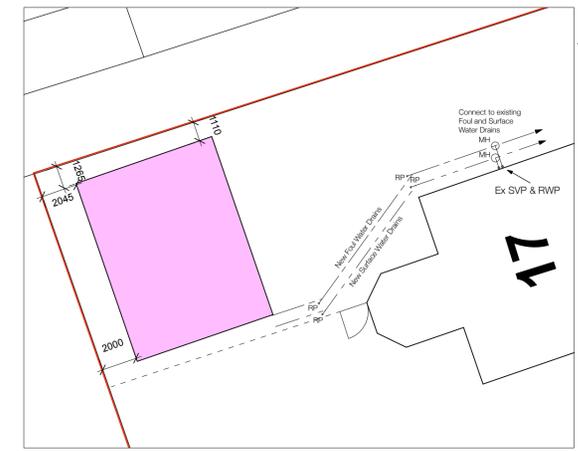
First Floor Plan 1:50



Section A-A 1:50



Location Plan 1:1250



Site Plan 1:200

FINISHES

Roof	Slates - to match house
Windows	Brown UPVC

No	Revisions	Date	Initials

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project
17 Cathay Terrace, CULLEN
Change of Use of Garage from Domestic to Commercial for Conversion of Volkswagen Vans to Camper Vans
for
Mr C Addison

content
Proposed Plan, Elevation + Section

scales

1:50, 1:100, 1:1250		
drawn by DJS	size A1	date 14.09.15

ref **13094** **03A**

