SCHEDULE A: Applications with Recommendation

21/0183

Item No: 06 Date of Committee: 10/09/2021

Appn Ref No:	**Applicant:**	**Parish:**
21/0183	Carlisle Villa ABC	
	Agent:	**Ward:**
	Northern Construction	Currock & Upperby

Location: Carlisle Villa Amateur Boxing Club, 71 Currock Road, Carlisle, CA2 4BH

Proposal: Extension To Existing Gym Facilities

Date of Receipt:	**Statutory Expiry Date**	**26 Week Determination**
01/03/2021 17:00:43	28/04/2021	

REPORT

Case Officer: Richard Maunsell

1. Recommendation

1.1 It is recommended that this application is approved with conditions.

2. Main Issues

2.1 Whether The Scale, Design And The Impact Of The Proposal On The Character And Appearance Of The Area Is Acceptable
2.2 The Impact Of The Proposal On The Living Conditions Of Neighbouring Properties
2.3 Highway And Parking Issues
2.4 Foul and Surface Water Drainage
2.5 Impact Of The Proposal On Biodiversity
2.6 Other Matters

3. Application Details

The Site

3.1 The site is located to the rear of 71 Currock Road, Carlisle and comprises a single storey outbuilding that formerly comprised the gymnasium for the adjacent school.

3.2 The application site is surrounded on all sides by residential properties. A road leads from Alton Street through to Mayson Street which serves the site as well as the adjacent properties.

The Proposal

3.3 This application seeks full planning permission for the erection of an extension within the curtilage of the property over an existing area of hardstanding. The extension would comprise a new gymnasium hall and would be constructed from facing brick under a flat roof with double glazed windows.

4. Summary of Representations

4.1 This application has been advertised by means of a site notice and direct notification to the occupiers of 29 of the neighbouring properties. In response, seven letters of objection have been received and the main issues raised are summarised as follows:

1. the gym generates excessive noise from the machines beeping, bells, bags, loud and aggressive shouting and screaming, noise from patrons arriving/ leaving. These have previously been reported to the council;
2. the negative impact of the noise has resulted in residents feeling like prisoners in their own homes the noise and disturbance means that neighbours are unable to enjoy their homes and gardens, particularly the outside space;
3. the past and current noise issues can be attributed to an inferior and unfit for purpose renovation with main reference to the cheap metal roof that was installed on the building, a distinct absence of roof ventilation and air conditioning have resulted in the boxing club constantly opening the fire doors and entrance door to release the excess heat, condensation and noise;
4. the gym is trying to do good work for some sectors of the community but would be better located elsewhere, away from residential areas, such as by DW gym;
5. parking is non-existing for the gym and many homeowners can’t get parked on their street where they live which will be made worse with more cars;
6. parking issues are compounded by vehicles overspilling from residents of Currock road, patients vehicles from The Fir Tree Dental Centre on Currock Road and vehicles belonging to the staff of The Currock Villa operating as Hopscotch;
7. parking on any of the surrounding streets is equally as bad as the well publicised parking issues in Denton Holme and in the surrounding streets of the 3G Football pitches at the bottom of Edgehill Road, both of which the local authority and Cumbria Highways have taken decisive action to reduce the negative impact on the local residents. If approval is given for the expansion of the boxing club without fully considering the parking issue, more members will attend every session meaning more vehicles in the already heavily congested surrounding streets, causing a daily domino effect of parking misery for all the surrounding streets;
8. if approved, Alton Street, Thirlmere and Mayson Street should be made

'residents only parking zones' and ensure the club members park on Currock Road as this is the address of the boxing club;

9. the access road to the gym is a private road and the deeds of neighbouring properties. Any damage has to be paid for by Alton Street homeowners. Has this been taken into account? Are residents going to be driven out of their own homes?;
10. the only available access/ egress is via a very narrow lane on Alton Street and Mayson Street which are already constantly heavily congested with vehicles;
11. there has recently been a vermin problem in the area with residents witnessing rodents coming and going from the boxing club's land where there is a lot of rubbish.

4.2 In response, 84 representations have been submitted which support the application and raise the following issues:

1. the gym is very popular and very well run with excellent facilities and coaches. Attending sessions makes a massive difference to people's lives and the local community;
2. the level of commitment showed by the board, the coaches and boxers is fantastic and so is the help and support from local people and businesses;
3. the club has gone from strength to strength and has a positive impact on peoples lives and their physical and mental health. The amount of classes have grown and so have the number of people who attend to the point where there's too many people for the space that's available. It would be great for the club if it could utilise the waste ground next to the current unit;
4. the club always appears to be mindful of residents and noise is kept to a minimum;
5. this is a fantastic boxing club that has done so much for so many in the local community. This development will help the club to increase the current membership so many more can take advantage of the selfless attitude of the coaching staff who are all volunteers;
6. the club have recently started a mental health initiative that is very popular. This session is close to capacity and with the lockdown and furlough coming to an end in the near future can see more needing this session which the club carry out for free;
7. the gym is amazing for all in the local area, for so many reasons, not only for the opportunities that it offers local kids but also in terms of the mental health classes which are put on by the club. These are brilliant and can help so many people with mental health problems in a way that other activities can't. By expanding the gym, it would only be great and beneficial to the community;
8. the club is not only a vital part of the local area but Carlisle as a whole, many people benefit from using the facilities, keeps children off the streets and actively promotes health and well-being in all ages.

5. Summary of Consultation Responses

Planning - Access Officer: - no response received;

Cumbria County Council - (Highways & Lead Local Flood Authority): -

the Highway Authority and Lead Local Flood Authority has no objection to the proposed development as it is considered that the proposal will not have a material effect on existing highway conditions nor does it increase the flood risk on the site or elsewhere;

Local Environment - Environmental Protection: - the result of the recently submitted BS4142 assessment would indicate that any noise from the planned air conditioning units should not pose a noise nuisance. It is anticipated that the provision of air conditioning should negate the need for the outer doors to be opened thereby reducing noise escape.

Any windows facing domestic properties must be in accordance with section 4.23 of the report to protect residential properties from noise breakout. If openable, the windows must remain closed during sessions.

Providing the materials used in construction are in accordance or have equivalent acoustic properties with those quoted in the BS4142 assessment, operation of the premises should not pose a nuisance. However, any changes to the choice of materials or to the siting or the choice of the proposed Daikin RZA200D condensers must be notified to the Planning Department before the changes are implemented.

This department would wish to ensure that any equipment used in the extension does not introduce a new noise source that is likely to cause a nuisance to domestic properties. The applicant should therefore consult with the planning department prior to adding to or relocating any speakers or buzzers in the extended premises.

6. Officer's Report

Assessment

6.1 Section 70(2) of the Town and Country Planning Act 1990/ Section 38(6) of the Planning and Compulsory Purchase Act 2004, requires that an application for planning permission is determined in accordance with the provisions of the Development Plan unless material considerations indicate otherwise.

6.2 At a national level, the relevant considerations include the National Planning Policy Framework (NPPF) and the Planning Practice Guidance (PPG). The Development Plan for the purposes of the determination of this application comprise Policies SP2, SP6, SP9, IP2, IP3, IP6, CC5, CM5 and GI3 of the Carlisle District Local Plan 2015-2030 are of particular relevance. The proposal raises the following planning issues.

1. Whether The Scale, Design And The Impact Of The Proposal On The Character And Appearance Of The Area Is Acceptable

6.3 Paragraphs 126 to 136 of the NPPF which emphasises that the creation of high quality buildings and places is fundamental to what the planning system and development process should achieve. The Framework has a clear expectation for high quality design which is sympathetic to local character and

distinctiveness as the starting point for the design process. Paragraph 130 outlines that:

"Planning policies and decisions should ensure that developments:

a) will function well and add to the overall quality of the area, not just for the short term but over the lifetime of the development;
b) are visually attractive as a result of good architecture, layout and appropriate and effective landscaping;
c) are sympathetic to local character and history, including the surrounding built environment and landscape setting, while not preventing or discouraging appropriate innovation or change (such as increased densities);
d) establish or maintain a strong sense of place, using the arrangement of streets, spaces, building types and materials to create attractive, welcoming and distinctive places to live, work and visit;
e) optimise the potential of the site to accommodate and sustain an appropriate amount and mix of development (including green and other public space) and support local facilities and transport networks; and
f) create places that are safe, inclusive and accessible and which promote health and well-being, with a high standard of amenity for existing and future users; and where crime and disorder, and the fear of crime, do not undermine the quality of life or community cohesion and resilience."

6.4 It is further appropriate to be mindful of the requirements in paragraph 134 of the NPPF which states:

"Development that is not well designed should be refused, especially where it fails to reflect local design policies and government guidance on design, taking into account any local design guidance and supplementary planning documents such as design guides and codes. Conversely, significant weight should be given to:

a) development which reflects local design policies and government guidance on design, taking into account any local design guidance and supplementary planning documents such as design guides and codes; and/or
b) outstanding or innovative designs which promote high levels of sustainability, or help raise the standard of design more generally in an area, so long as they fit in with the overall form and layout of their surroundings."

6.5 Policies seek to ensure that development is appropriate in terms of quality to that of the surrounding area and that development proposals incorporate high standards of design including siting, scale, use of materials and landscaping which respect and, where possible, enhance the distinctive character of townscape and landscape. This theme is identified in Policy SP6 of the local plan which requires that development proposals should also harmonise with the surrounding buildings respecting their form in relation to height, scale and massing and make use of appropriate materials and detailing. Development of this site will have an impact on the character of the area.

6.6 The area around the building is not much larger than the footprint of the

building itself and the extension would occupy a large portion of this land; however, the extension would be well-related to the existing building and of a reasonable scale. The site is served by an existing access from the lane to the rear of the neighbouring properties. This in turn leads to the area of hardstanding around the building which is adequate to accommodate a small number of vehicles. The extended building would be constructed from facing brick and white upvc windows that are appropriate to the existing building. The extension would also feature a flat roof. Overall, the development would not result in a discordant feature within the character of the area.

2. The Impact Of The Proposal On The Living Conditions Of Neighbouring Properties

6.7 Paragraph 130(f) of the NPPF highlights that developments and decisions should:

“create places that are safe, inclusive and accessible and which promote health and well-being, with a high standard of amenity for existing and future users; and where crime and disorder, and the fear of crime, do not undermine the quality of life or community cohesion and resilience.”

6.8 The city council's Supplementary Planning Document "Achieving Well Designed Housing", on the matter of privacy, states that:

"Where a development faces or backs onto existing development, in order to respect privacy within rooms a minimum distance of 21 metres should usually be allowed between primary facing windows (and 12 metres between any wall of the building and a primary window). However, if a site is an infill, and there is a clear building line that the infill should respect, these distances need not strictly apply (para. 5.44). *While it is important to protect the privacy of existing and future residents, the creation of varied development, including mews style streets, or areas where greater enclosure is desired, may require variations in the application of minimum distances."* (para. 5.45)

6.9 Planning policies require that development proposals should not adversely affect the living conditions of occupiers of residential properties by virtue of inappropriate development, scale or visually intrusive.

6.10 Given the orientation of the application site with the neighbouring properties means that it is not considered that the occupiers would suffer from an unreasonable loss of daylight or sunlight. The siting, scale and design of the development will not adversely affect the living conditions of the occupiers of the neighbouring properties by virtue of over-dominance.

6.11 There are residential properties surrounding the application site. In the objections that have been received against the application, the dominant issue raised relates to overall impact on the amenity of occupiers of residential properties primarily from the nature and level of use leading to unacceptable levels of noise and disturbance.

6.12 The use as a gymnasium is historic and there is no restriction in terms of level

of use or noise emanating from the site, other than when a statutory noise nuisance occurs in which case this may be investigated and enforced under the Environmental Health legislation. Notwithstanding this unfettered position, any proposal to extend or alter the facility through the planning system must take account of potential noise issues.

6.13 The initial response from the council's Environmental Health Officer raised the following:

"This department has been in receipt of a number of complaints relating to noise from activities at the existing facilities over the last three years. Residents have reported being unable to have their windows open or enjoy their garden space when the premises are in use due to aggressive shouting and buzzer noise. The problems are reported to be worse in the summer months when the premises doors are open for ventilation.

The proposed extension will bring the noisy activities much closer to the rear of properties on Alton Street and it is noted that the gym holds classes at times when residents are likely to be at home.

Unless the applicant can provide evidence to the Planning Department that the entire extended premises will be capable of operating all year round without causing a nuisance, then it is advised that it would not be appropriate to grant permission.

The applicant should be aware that even if the extension does not go ahead, enforcement action can be taken if noise escape from the premises continues to cause a nuisance."

6.14 Having had regard to this and given considerable weight to the objections of residents, Officers raised concerns with the applicant over the apparent historic noise issues and the potential for continued levels of noise and disturbance that may emanate from the site. This was supported by the Environmental Health Officer who also raised similar concerns. The applicant was therefore requested to undertake a suitable noise assessment by a qualified Acoustic Consultant.

6.15 The applicant has subsequently commissioned a different noise consultant who has submitted a Noise Assessment Report, a copy of which is reproduced following this report which concludes that:

- Continuous sound level monitoring has been conducted over a weekend period in order to determine the existing background and ambient sound pressure levels at the site;
- From the survey data, an appropriate daytime sound level target has been determined for new building services plant (condenser units);
- The sound rating level of the proposed condenser units is expected to achieve the target noise limit in both heating mode and cooling mode;
- On the basis of this assessment and BS 4142 guidance, condenser related noise is expected to have a low to negligible impact at adjacent dwellings;

- At this stage, additional noise mitigation measures are considered unnecessary for the proposed outdoor condenser units;
- The resulting breakout sound level due to amplified music is predicted to be notably below the existing background and ambient sound level during the daytime period (with windows closed);
- On this basis, negligible noise related impacts are anticipated at the nearest dwellings due to noise breakout from the building envelope;
- It is recommended that the new windows are acoustically laminated as opposed to standard thermal double glazing and windows should remain closed (or be fully sealed) during training/exercise classes;
- The proposed extension and air-conditioning system is expected to provide a notable improvement to the current situation, in terms of noise affecting the local residents. During the survey, noise breakout from the existing fire escape doors (facing the dwellings on Alton Street) was audible and was considered to be a weak point in the building envelope. The doors and existing glazing will be removed and replaced as part of the proposals.

6.16 In summary, the use of appropriate materials (including windows) in the construction of the structure, the installation of air conditioning units and the requirement to have windows and doors closed when the building is in use, should ensure that the use will not result in any adverse noise issues for the occupiers of neighbouring residential properties and it would appear, be a betterment to the existing situation.

6.17 Members will note from Section 5 of this report that the council's Environmental Health Officer has raised no objection subject to the development being undertaken in accordance with the conclusion of the Noise Assessment Report. Although condition 2 requires the development to be undertaken in accordance with the submitted documents, which include the Noise Assessment Report, it is considered appropriate to impose a separate, stand-alone condition required the development to be undertake in strict accordance with the Noise Assessment Report, for the avoidance of doubt.

3. Highway And Parking Issues

6.18 Planning policies require that adequate access and parking provision can be achieved as part of any development. Additionally, the development has the potential to result in increase traffic generation to the site and result in parking demand on the surrounding streets. Whilst the development would occupy an existing area of hardstanding, the agent has confirmed that the only car parking spaces are for the mini bus and head coach as the club discourages its members from using the area. The agent further states that whilst vehicles do occasionally park on the land however these are generally people visiting Hopscotch Care Limited in the adjoining building not the club. The extension to the boxing club doesn't lose any car parking spaces, however the club intends to add cycle racks for club members.

6.19 Reference is made in the objections to the existing parking problems in the locality. The site is well-related to the city and is accessible by alternative

means of transport including cycling, walking and public transport, with a bus stop on Alton Street.

6.20 Whilst the development will increase the patrons using the gym which will include travelling to the site by car and potentially parking in the locality, Cumbria County Council as the Local Highway Authority has raised no objection to the application. As such, the proposal does not raise any highway issues.

6.21 Cumbria County Council has been made aware of the objections raised to this application on highway grounds and has been advised of residents suggestion to create a residents' parking scheme.

4. Foul and Surface Water Drainage

6.22 In accordance with the NPPF and the NPPG, the surface water should be drained in the most sustainable way. The NPPG clearly outlines the hierarchy when considering a surface water drainage strategy with the following drainage options in the following order of priority:

1. into the ground (infiltration);
2. to a surface water body;
3. to a surface water sewer, highway drain, or another drainage system;
4. to a combined sewer.

6.23 In order to protect against pollution, Policies IP6 and CC5 of the local plan seek to ensure that development proposals have adequate provision for the disposal of foul and surface water. The application documents, submitted as part of the application, provides that both the foul water would be disposed of to the mains sewer.

6.24 Given the scale of the development in this urban location and the existing hardstanding, the development would not result in an increased amount of run-off. The LLFA has raised no objection and as such, in this stance, the means of foul and surface water drainage are acceptable.

5. Impact Of The Proposal On Biodiversity

6.25 The authority should consider securing measures to enhance the biodiversity of a site from the applicant, if it is minded to grant permission for an application in accordance with paragraph 118 of the NPPF. This is reflected in Section 40 of the Natural Environment and Rural Communities Act (2006) which states that every public authority must have regard to the purpose of conserving biodiversity. Local planning authorities must also have regard to the requirements of the EC Habitats Directive (92/43/EEC) when determining a planning application as prescribed by regulation 3 (4) of the Conservation (Natural Habitats, &c.) Regulations 1994 (as amended), and Article 16 of the Habitats Directive before planning permission is granted.

6.26 Planning Authorities in exercising their planning and other functions must have regard to the requirements of the EC Habitats Directive (92/43/EEC) when determining a planning application as prescribed by regulation 3 (4) of

the Conservation (Natural Habitats, cc.) Regulations 1994 (as amended). Such due regard means that Planning Authorities must determine whether the proposed development meets the requirements of Article 16 of the Habitats Directive before planning permission is granted. Article 16 of the Directive indicates that if there is reasonable likelihood of a European protected species being present then derogation may be sought when there is no satisfactory alternative and that the proposal will not harm the favourable conservation of the protected species and their habitat.

6.27 The city council's GIS layer did identify the potential for protected species to be present on the site or within the immediate vicinity. Given that the proposal involves the construction of a building on an area of existing hardstanding, it is unlikely that the proposal would affect any species identified; however, an informative has been included within the decision notice ensuring that if a protected species is found all work must cease immediately and the local planning authority informed.

6. Other Matters

6.28 The presentations make reference to rubbish stored next to the site on land allegedly belonging to the application together with vermin in the locality. The applicant has been advised of this and in response has stated that this is as a result of fly-tipping which costs the applicant money to clear. The agent further states that are no waste materials stored on the land that would attract vermin and would welcome seeing evidence of this. We do have vermin traps in place and nothing has been detected in the last 12 months. If these problems are substantiated and/ or persists, they should be dealt with outwith the remit of this planning application.

6.29 Any restricted right of access across the road which serves the properties on Alton Street/ Mayson Street is a private matter for the relevant parties to resolve outside the planning process.

7. Conclusion

6.30 In overall terms, the principle of an extension to the existing gym is acceptable. The building would be appropriate in terms of its siting, scale, design and use of materials and would not result in a discordant feature on the character or appearance of the area.

6.31 Given the location of the application site in relation to neighbouring residential properties, the proposal would not have a detrimental impact on the living conditions of the occupiers of those properties on the basis of loss of light, overlooking or over dominance. The submitted Noise Assessment Report identifies that the proposal would generate levels of noise and disturbance that would adversely affect the amenity of neighbouring residents. Subject to the imposition of conditions, the proposal is acceptable in this regard.

6.32 Cumbria County Council has confirmed that the proposal is acceptable in highway terms albeit Officers have advised them of the issues raised by residents.

6.33 In overall terms, the proposal is considered to be compliant under the provisions of the National Planning Policy Framework, the Planning Practice Guidance and relevant policies of the Carlisle District Local Plan 2015-2030.

7. Planning History

7.1 Planning permission was granted in 1955 for the erection of a gymnasium/ hall. A revised application was approved later the same year.

8. Recommendation: Grant Permission

1. The development shall be begun not later than the expiration of 3 years beginning with the date of the grant of this permission.

   Reason: In accordance with the provisions of Section 91 of the Town and Country Planning Act 1990 (as amended by Section 51 of the Planning and Compulsory Purchase Act 2004).

2. The development shall be undertaken in strict accordance with the approved documents for this Planning Permission which comprise:
   1. the Planning Application Form received 2nd March 2021;
   2. the Block & Location Plan received 2nd March 2021 (Drawing no. 1344-01);
   3. the As Proposed Floor Plan received 2nd March 2021 (Drawing no. 1344-04);
   4. the As Proposed Elevations received 2nd March 2021 (Drawing no. 1344-05);
   5. the Noise Assessment Report received 9th August 2021;
   6. the Notice of Decision;
   7. any such variation as may subsequently be approved in writing by the local planning authority.

   Reason: To define the permission.

3. The development shall be undertaken in strict accordance with the Noise Assessment Report received on 9th August 2021 and all windows and doors shall remain closed during training/ exercise classes.

   Reason: To prevent unacceptable noise and disturbance to the occupiers of adjacent residential properties in accordance with Policies SP6 and CM5 of the Carlisle District Local Plan 2015-2030.

4. The building herby approved shall be retained with he approved materials, acoustically laminated windows and the proposed Daikin RZA200D condensers units thereafter unless otherwise agreed in writing by the local planning authority.

Reason: To prevent unacceptable noise and disturbance to the occupiers of adjacent residential properties in accordance with Policies SP6 and CM5 of the Carlisle District Local Plan 2015-2030.

BLOCK PLAN 1:500

LOCATION PLAN 1:1250

Block & Location Plan

Carlisle Villa Boxing Club

Alton Road, Carlisle. CA2 4DX.

UNDERWOOD Associates
CHARTERED BUILDING SURVEYORS

Warwick Mill Business Centre
Warwick Bridge
Carlisle
CA4 8RR
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e-mail: info@underwoodsurveying.co.uk
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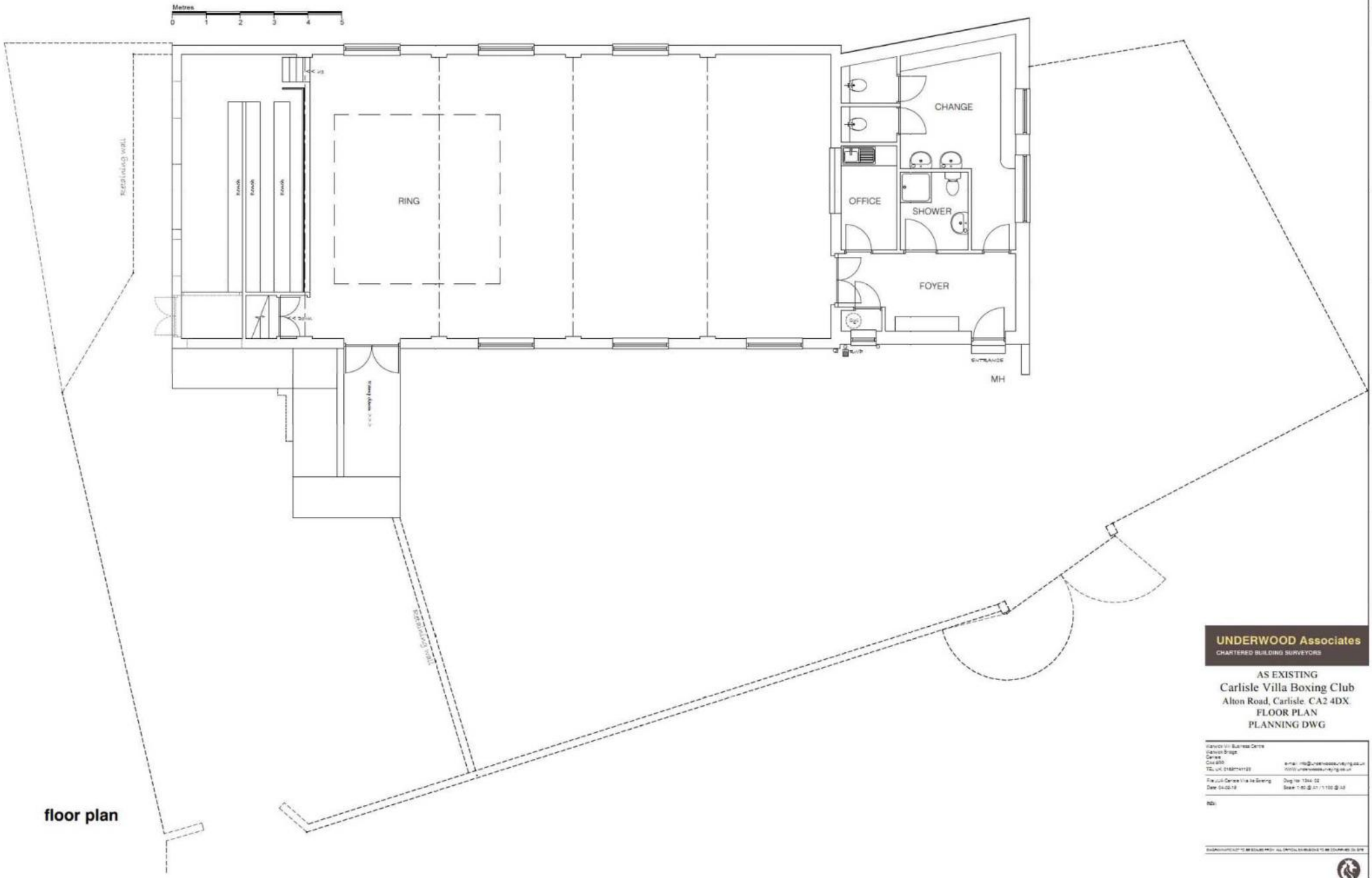
File: JUA-Carlisle Villa Location Plan WIP
Date: 02/01/2018
Dwg No: 1344.01
Scale: 1: 500 / 1250 @ A3

RICS



floor plan

UNDERWOOD Associates
CHARTERED BUILDING SURVEYORS

AS EXISTING
Carlisle Villa Boxing Club
Alton Road, Carlisle. CA2 4DX.
FLOOR PLAN
PLANNING DWG

Warwick Mill Business Centre
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Carlisle
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TEL: UK 01697741123
e-mail: info@underwoodsurveying.co.uk
www.underwoodsurveying.co.uk

File: J:\A-Carlisle Villa Ad Boxing
Date: 04-09-19

Dwg No: 1344 - 02
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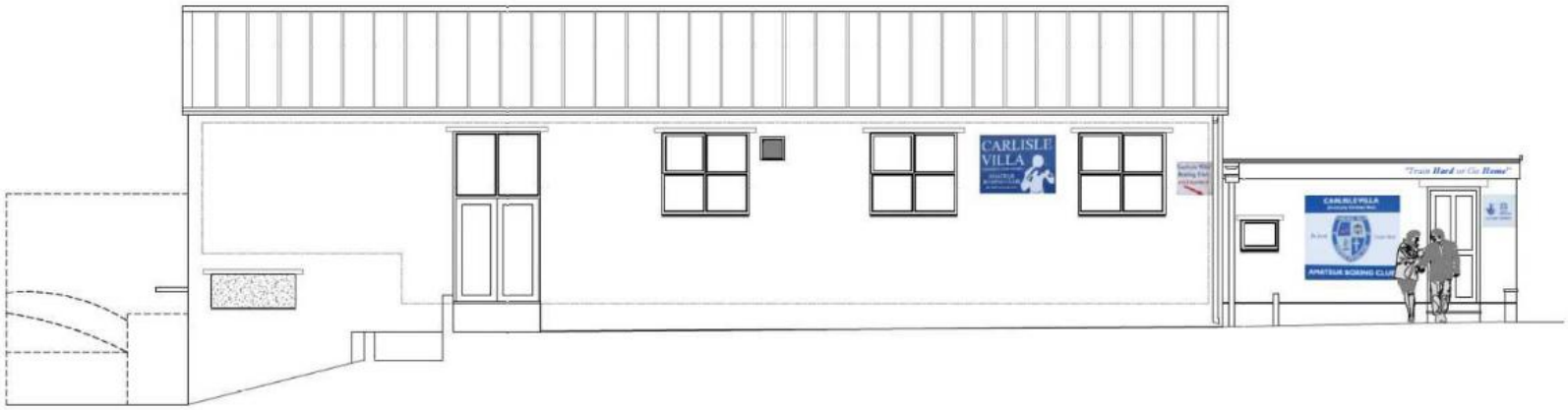
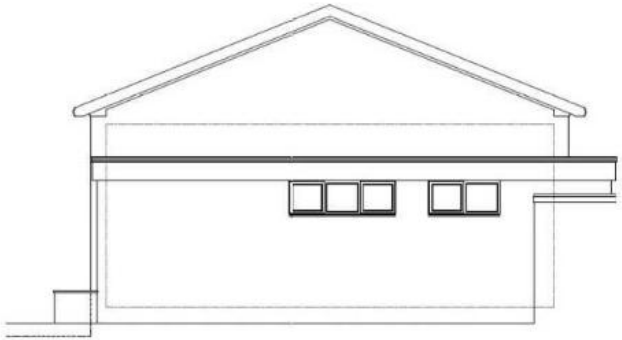
RICS



north elevation

east elevation



west elevation

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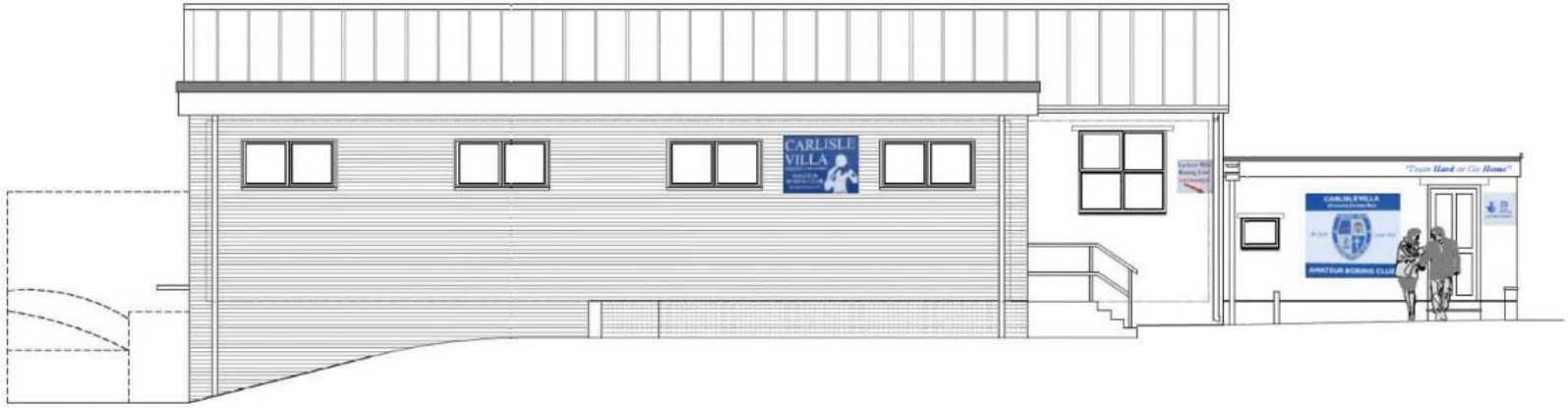
AS EXISTING
Carlisle Villa Boxing Club
Alton Road, Carlisle. CA2 4DX.
ELEVATION
PLANNING DWG

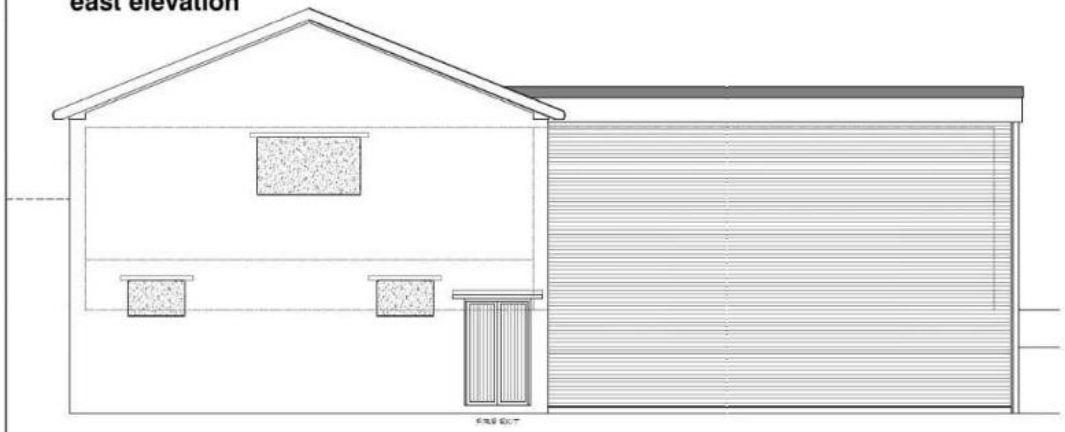
RICS



north elevation

west elevation

east elevation



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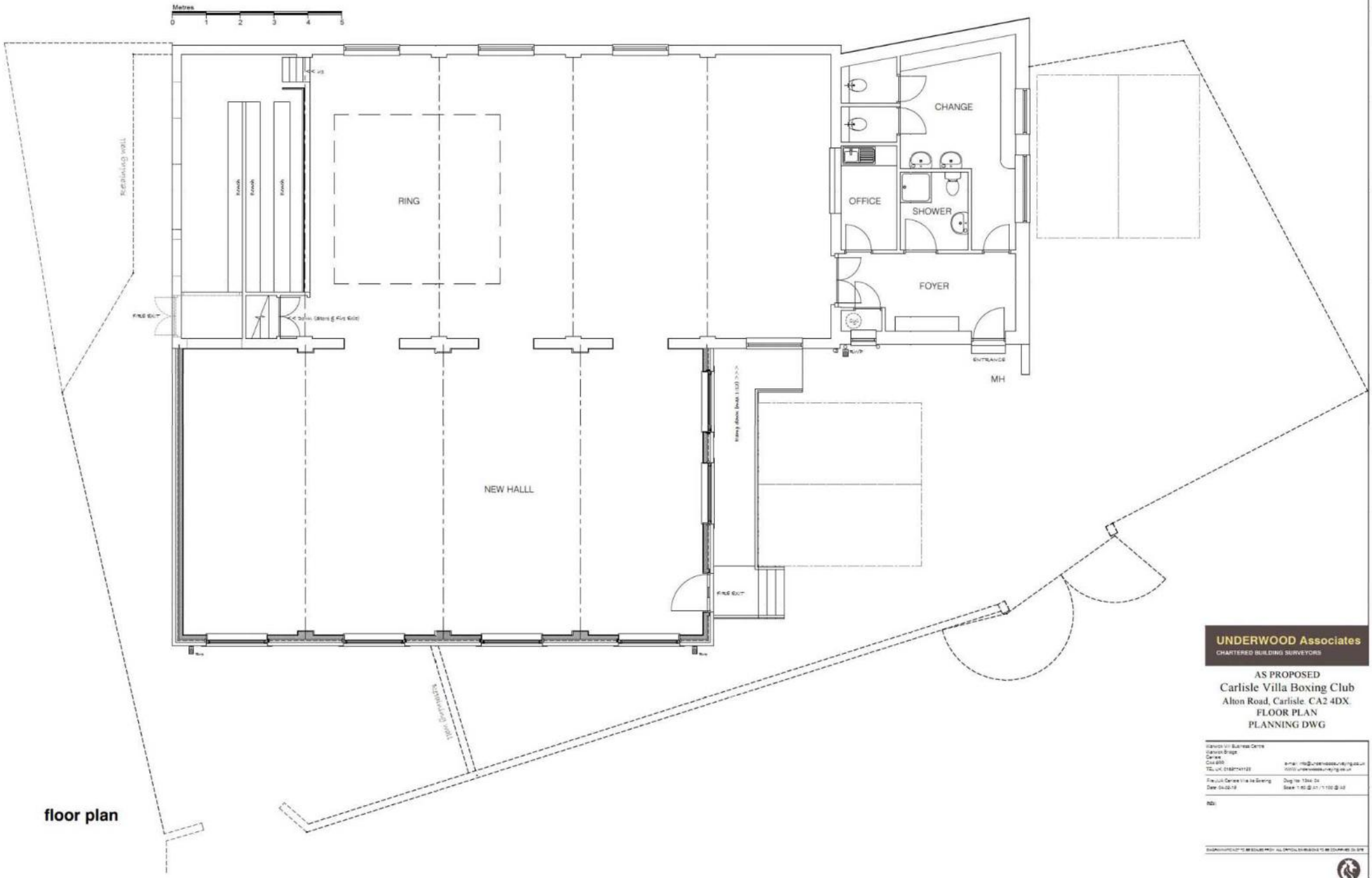
CHARTERED BUILDING SURVEYORS

AS PROPOSED
Carlisle Villa Boxing Club
Alton Road, Carlisle. CA2 4DX.
ELEVATION
PLANNING DWG

RICS



floor plan

UNDERWOOD Associates
CHARTERED BUILDING SURVEYORS

AS PROPOSED
Carlisle Villa Boxing Club
Alton Road, Carlisle. CA2 4DX.
FLOOR PLAN
PLANNING DWG

RICS

RS Acoustic Engineering

Proposed Extension
Carlisle Villa Boxing Club

Noise Assessment Report

Project: Carlisle Villa Boxing Club - Noise Assessment Report

Client: Northern Construction & Security Ltd

Project Reference: RSA355/2021

Report Date: 05 August 2021

Document History

Version	Date	Comments	Initials
1	05 August 2021	Issue for planning	RS / MP

Authorised by	Ryan Swales, BSc, MIOA Director & Principal Consultant

This report takes into account the particular instructions and requirements of our client. It is not intended for and should not be relied upon by any third party. Any such party relies on this report at their own risk.

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Corporate Member of the Institute of Acoustics (MIOA)

Contents

Section Page

1. Introduction 4

2. Assessment Guidance & Criteria 5

British Standard 4142:2014+A1:2019 Methods for rating and assessing industrial and commercial sound 5

3. Environmental Noise Survey 7

Survey methodology 7
Survey equipment 8
Weather conditions 8
Measured indices 8
Results summary 9

4. Assessment & Discussion 11

New building services plant and nearest noise sensitive receptors 11
Predicted condenser sound levels at neighbouring dwellings 12
Noise breakout from the building envelope 13

5. Conclusion 15

List of Tables, Figures & Appendix

Table 3.1 – Summary of measured background sound pressure levels 9
Table 3.2 – Summary of measured ambient sound pressure levels 9
Table 4.1 – Daytime sound level target for new building services plant 11
Table 4.2 – Daikin RZA200D octave band sound pressure levels (L_{eq} dB) 11
Table 4.3 – Condenser sound pressure level at the nearest dwellings (cooling mode) 12
Table 4.4 – Condenser sound pressure level at the nearest dwellings (heating mode) 12
Table 4.5 – Building envelope sound insulation (acoustically laminated double glazing) 14

Figure 3.1 – Site location and survey measurement position 7
Figure 3.2 – Photographs showing survey measurement position 8
Figure 3.3 – Graph showing results of continuous sound level monitoring 10

Appendix A - Proposed floor plan and elevations 16
Appendix B - Condenser sound level data 21
Appendix C - Assessment terminology 23

1. Introduction

1.1 RS Acoustic Engineering Ltd have been appointed by Northern Construction & Security Ltd to undertake a noise impact assessment with regard to a new extension at Carlisle Villa Boxing Club, Alton Street, Carlisle, CA2.

1.2 The boxing club was established in circa 1993 and the construction of the existing building consists of brick/block cavity walls, standard thermal double glazing and a lightweight aluminium profiled roof.

1.3 The extension consists of a single-storey hall that will be attached to the north east facing elevation of the existing building.

1.4 The building will be air-conditioned and therefore there will be two Daikin outdoor condensing units installed at low-level to the rear of the building.

1.5 In terms of existing noise-sensitive receptors to the site, there are terraced dwellings along Alton Street to the north, Currock Road to the west and Mayson Street to the east/south.

1.6 The dominant noise source at the site was observed to be road traffic on Currock Road and Alton Street.

1.7 An environmental noise survey has been conducted over a number of days in order to determine the existing background and ambient sound levels during the daytime and night-time period.

1.8 A plant noise assessment has been undertaken taking into consideration the guidance given within BS 4142:2014+A1:2019 *Methods for rating and assessing industrial and commercial sound*.

1.9 The manufacturer's octave band sound level data has been used to determine the resulting plant sound level at neighbouring dwellings during the daytime period (07:00 to 23:00 hours).

1.10 An assessment of noise breakout from the new extension has also been conducted and the resulting sound levels determined at neighbouring dwellings.

1.11 The survey and assessment was conducted by Mr Ryan Swales ($BSc_{(Hons)}$, MIOA), Principal Acoustic Consultant and Corporate Member of the Institute of Acoustics.

1.12 The report provides the survey results, details of the proposed building services plant, calculated sound levels at adjacent dwellings and the anticipated impact.

2. Assessment Guidance & Criteria

British Standard 4142:2014+A1:2019 Methods for rating and assessing industrial and commercial sound

2.1 BS 4142 (amended June 2019) describes methods for rating and assessing sound of an industrial and/or commercial nature, such as sound from manufacturing processes and fixed mechanical plant/machinery.

2.2 Outdoor sound levels are used to assess the likely effect on people who might be inside or outside a dwelling or premises used for residential purposes upon which sound is incident.

2.3 BS 4142 is not intended to be applied to the derivation of indoor sound levels arising from sound levels outside, or the assessment of indoor sound levels.

2.4 The standard has three different methods (subjective, objective and reference) of applying a penalty to tonal, impulsive and intermittent noises, as separate entities.

2.5 The current standard no longer indicates significance of noise impacts as giving rise to a '*likelihood of complaint*' but rather as an '*indication*' of varying degrees of '*adverse impact'*.

2.6 BS 4142:2014 states that a difference of around +10 dB or more (excess of rating level above the background sound level) is likely to be an indication of a significant adverse impact, depending on the context.

2.7 A difference of around +5 dB is likely to be an indication of an adverse impact, depending on the context.

2.8 The lower the rating level is relative to the measured background sound level, the less likely it is that the specific sound source will have an adverse impact or a significant adverse impact.

2.9 Where the rating level does not exceed the background sound level, this is an indication of the specific sound source having a low impact, depending on the context.

2.10 With regard to determining the background sound level at the site, the standard provides the following guidance:

Where possible, measure the background sound level at the assessment location(s). If this is not possible measure at an alternative location where the residual sound is comparable to the assessment location(s). A detailed justification for considering this should be reported.

Ensure that the measurement time interval is sufficient to obtain a representative value of the background sound level for the period of interest. This should comprise continuous measurements of normally not less than 15 min intervals, which can be contiguous or disaggregated.

2.11 The standard also provides the following general commentary on background sound level:

The background sound level is an underlying level of sound over a period, T, and might in part be an indication of relative quietness at a given location. It does not reflect the occurrence of transient and/or higher sound level events and is generally governed by continuous or semi-continuous sounds.

In using the background sound level in the method for rating and assessing industrial and commercial sound it is important to ensure that values are reliable and suitably represent both the particular circumstances and periods of interest. For this purpose, the objective is not simply to ascertain a lowest measured background sound level, but rather to quantify what is typical during particular time periods.

Among other considerations, diurnal patterns can have a major influence on background sound levels and, for example, the middle of the night can be distinctly different (and potentially of lesser importance) compared to the start or end of the night-time period for sleep purposes. Furthermore, in this general context it can also be necessary to separately assess weekends and weekday periods.

Since the intention is to determine a background sound level in the absence of the specific sound that is under consideration, it is necessary to understand that the background sound level can in some circumstances legitimately include industrial and/or commercial sounds that are present as separate to the specific sound.

3. Environmental Noise Survey

Survey methodology

3.1 Continuous sound level monitoring was conducted over a 52-hour period to the side of the boxing club, adjacent to the northern boundary and the rear gardens of neighbouring properties.

3.2 The microphone was fixed at a height of approximately 1.8 metres from the ground.

3.3 Measurements were performed from 12:00 hours on Saturday 31st July through to 16:00 hours on Monday 02nd August 2021.

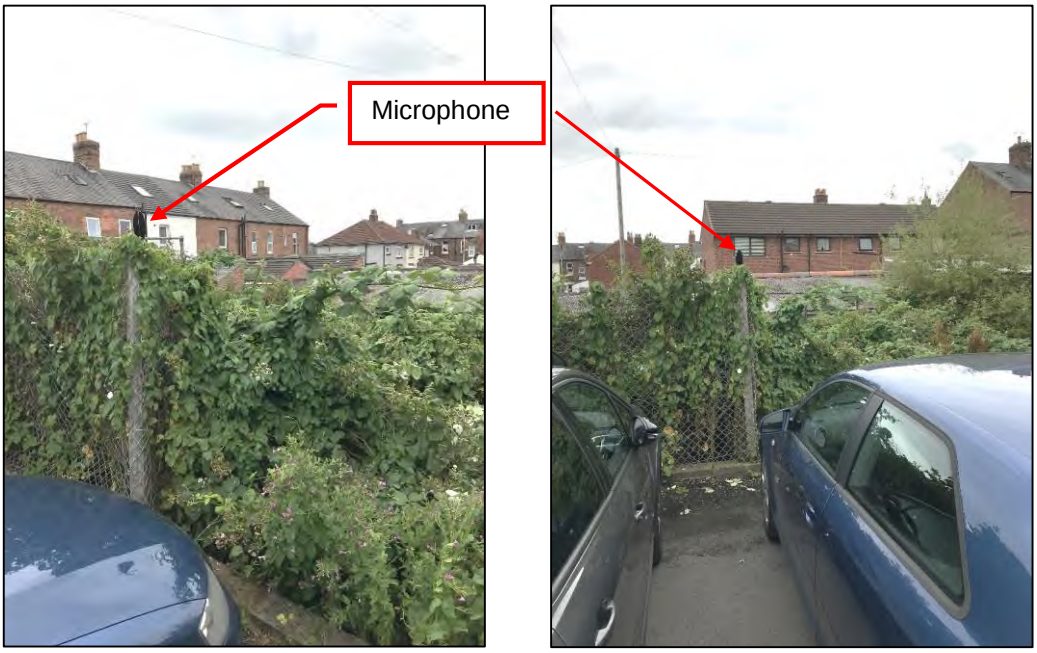
3.4 A measurement interval of 15 minutes was used throughout the survey and measurements were considered to be subject to free-field conditions.

3.5 The site location, surrounding area and survey measurement position are shown in Figure 3.1. The photographs in Figure 3.2 also show the survey measurement position.

3.6 The proposed floor plan and elevations are shown in Appendix A.

Figure 3.1 – Site location and survey measurement position (Source: Google Earth)

Figure 3.2 – Photographs showing survey measurement position



Survey equipment

3.7 The survey was performed using the following Class-1 specification equipment:

- Brüel & Kjaer 2250-Light data logging sound level meter, with microphone type 4189 and pre-amplifier type ZC0032.
- CEL-120/1 Acoustic calibrator.

3.8 Calibration of the sound level meter and microphone used for the measurements are traceable to UKAS accredited laboratories (calibration certificates are available on request).

3.9 The calibration of both sound level meter and microphone was checked using a 1 kHz tone at 94 dB prior to and following the survey. The drift in calibration was less than 0.1 dB.

Weather conditions

3.10 The weather conditions during the survey were dry and fine with clear sunny spells. Wind speed measurements taken on site were less than 2 m/s^{-1}.

3.11 The air temperature during the survey ranged between approximately 9°C and 20°C. The overall weather conditions were considered suitable to obtain representative measurements.

Measured indices

3.12 Although a wide range of statistical sound level data was recorded during the survey, the L_{Aeq} and L_{A90} indices are of most interest for this assessment:

- $L_{Aeq,T}$ - The A-weighted equivalent continuous sound pressure level over a period of time, T. Representative of the 'average' sound pressure level over a given period (used to describe the ambient sound level).
- $L_{A90,T}$ - The sound pressure level that is exceeded for 90% of the measurement time interval, T. L_{A90} is often used to describe the 'background' sound level.

3.13 Sound pressure level measurements are taken with an A-weighting (denoted by a subscript 'A', e.g. L_{Aeq}) to approximate the frequency response of the human ear.

Results summary

3.14 Table 3.1 presents a summary of the measured background L_{A90} sound pressure levels from the continuous monitoring position. Measured values have been rounded to the nearest whole number.

Table 3.1 – Summary of measured background sound pressure levels

Date	Period, Hours	Typical[1] $L_{A90,15min}$ dB	Lowest $L_{A90,15min}$ dB	Highest $L_{A90,15min}$ dB
Saturday 31/07/2021 - Sunday 01/08/2021	Daytime (12:00-23:00)	35	28	39
	Night-time (23:00-07:00)	36	28	39
Sunday 01/08/2021 - Monday 02/08/2021	Daytime (07:00-23:00)	36	31	39
	Night-time (23:00-07:00)	28	26	35
Monday 02/08/2021	Daytime (07:00-16:00)	36	32	39

[1]Considered to be the representative background sound level from a statistical analysis

3.15 It is worth noting that the lowest measured daytime value (28 dB $L_{A90,15min}$) corresponds to the time period 22:45 to 23:00 hours.

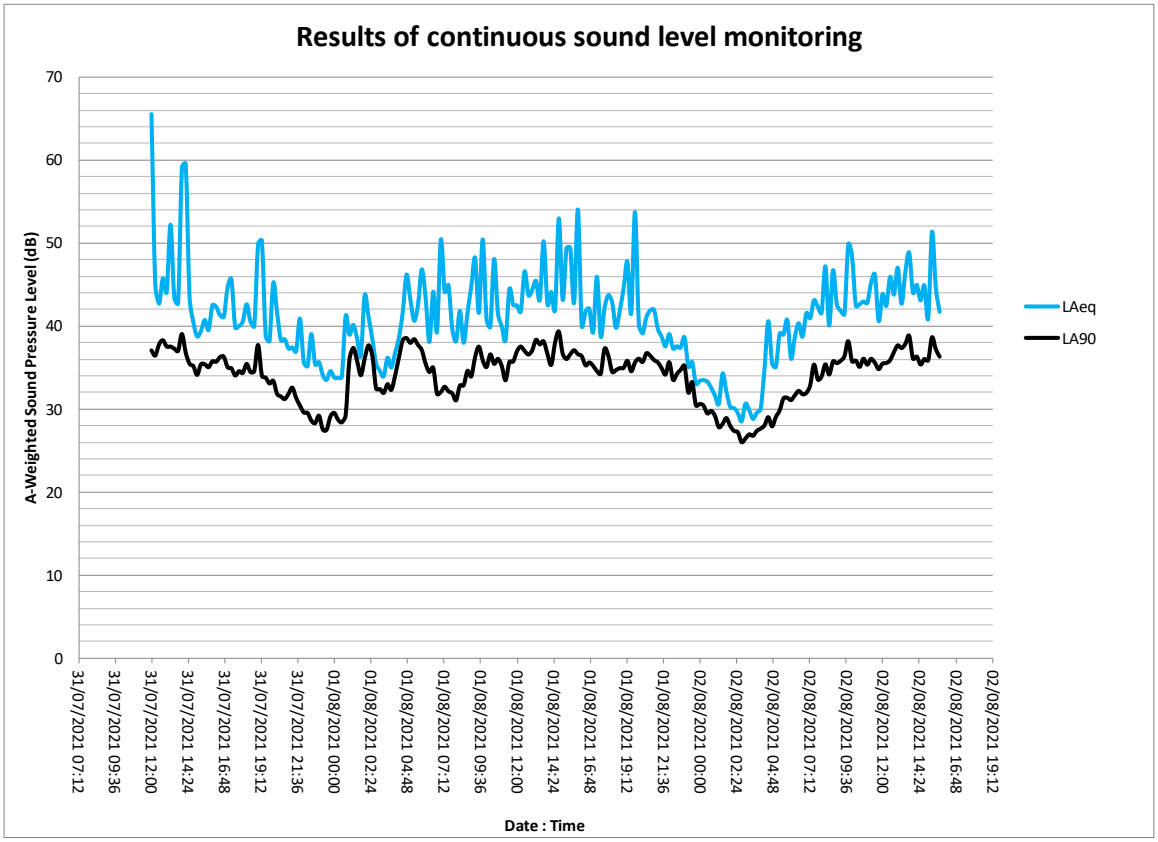
3.16 Table 3.2 presents a summary of the measured ambient L_{Aeq} sound pressure levels from the continuous monitoring position. Measured values have been rounded to the nearest whole number.

Table 3.2 – Summary of measured ambient sound pressure levels

Date	Period, Hours	Average $L_{Aeq,15min}$ dB	Lowest $L_{Aeq,15min}$ dB	Highest $L_{Aeq,15min}$ dB
Saturday 31/07/2021 - Sunday 01/08/2021	Daytime (12:00-23:00)	51	35	66
	Night-time (23:00-07:00)	40	33	47
Sunday 01/08/2021 - Monday 02/08/2021	Daytime (07:00-23:00)	45	37	54
	Night-time (23:00-07:00)	36	28	41
Monday 02/08/2021	Daytime (07:00-16:00)	45	40	51

3.17 The results of the sound level monitoring are presented graphically in Figure 3.3 overleaf.

Figure 3.3 – Graph showing results of continuous sound level monitoring



4. Assessment & Discussion

New building services plant and nearest noise sensitive receptors

Sound level targets for new building services plant

4.1 It is considered prudent to determine appropriate external sound level targets based on the measured background sound levels and relevant guidance given within BS 4142.

4.2 BS 4142 states *Where the rating level does not exceed the background sound level, this is an indication of the specific sound source having a low impact, depending on the context.*

4.3 It is considered appropriate for new items of plant and equipment to achieve a sound rating level of at least 5 dB below the typical background L_{A90} sound pressure level. The average typical background sound level over the three days has been used for this assessment (ref: Table 3.1).

4.4 Table 4.1 presents the daytime sound level target for new fixed plant. The target should be achieved at approximately 3.5 metres from the nearest noise sensitive window or elevation (free-field).

Table 4.1 – Daytime sound level target for new building services plant

Period, Hours	Typical Background Sound Level $L_{A90,15min}$ dB	Target Rating Level $L_{Aeq,15min}$ dB
Daytime (07:00-23:00)	36	31

Daikin outdoor condenser units

4.5 There will be two Daikin outdoor condenser units installed at low level to the rear of the building. At this stage, the exact location of the condenser units is unknown. For this assessment, it is assumed that the position of the condenser units will be approximately mid-point between the new hall and existing building on the south east facing elevation (as shown in Appendix A).

4.6 The nearest dwellings to the new condenser units are expected to be those along Mayson Street and also those along Alton Street (rear gardens and elevations). The separation distance between the condensers and the nearest dwelling is estimated to be approximately 20 metres.

4.7 It is understood that the outdoor units will be Daikin RZA200D condensers with a sound pressure level of approximately 53 dBA at 1 metre in cooling mode and 60 dBA in heating mode.

4.8 The manufacturer's octave-band sound pressure levels for the unit are presented in Table 4.2. The sound level data is also presented graphically in Appendix B.

Table 4.2 – Daikin RZA200D octave band sound pressure levels (L_{eq} dB)

Octave Band Centre Frequency (Hz)								Overall L_{Aeq} dB
63	125	250	500	1000	2000	4000	8000	
54	55	53	52	48	44	40	34	Cooling 53
67	63	59	59	54	49	44	37	Heating 60

Predicted condenser sound levels at neighbouring dwellings

4.9 It is assumed that both of the outdoor units could operate simultaneously and continuously over a given assessment period. To determine the level of sound attenuation due to distance separation, standard acoustic principals for a point source have been assumed.

4.10 Table 4.3 presents the calculation results for the proposed condenser units operating in cooling mode and Table 4.4 presents the calculation results in heating mode.

4.11 The calculations take into consideration the cumulative sound level (3 dB higher for the two units combined), frequency spectrum, surface directivity, distance separation and acoustic screening (from the adjacent structures/garages).

Table 4.3 – Condenser sound pressure level at the nearest dwellings (cooling mode)

	Octave Band Centre Frequency (Hz)							
	63	**125**	**250**	**500**	**1000**	**2000**	**4000**	**8000**
Daikin RZA200D (Cumulative L_{eq} dB)	57	58	56	55	51	47	43	37
Directivity factor dB (wall reflection)	+3	+3	+3	+3	+3	+3	+3	+3
Distance attenuation dB	-26	-26	-26	-26	-26	-26	-26	-26
Screening attenuation dB	-6	-7	-9	-11	-14	-16	-19	-22
A-weighting correction dB	-26	-16	-9	-3	0	+1	+1	-1
Resulting level dBA	**2**	**12**	**15**	**18**	**14**	**9**	**2**	**-9**
Specific sound level $L_{Aeq,T}$ = 22 dB								

Table 4.4 – Condenser sound pressure level at the nearest dwellings (heating mode)

	Octave Band Centre Frequency (Hz)							
	63	**125**	**250**	**500**	**1000**	**2000**	**4000**	**8000**
Daikin RZA200D (Cumulative L_{eq} dB)	70	66	62	62	57	52	47	40
Directivity factor dB (wall reflection)	+3	+3	+3	+3	+3	+3	+3	+3
Distance attenuation dB	-26	-26	-26	-26	-26	-26	-26	-26
Screening attenuation dB	-6	-7	-9	-11	-14	-16	-19	-22
A-weighting correction dB	-26	-16	-9	-3	0	+1	+1	-1
Resulting level dBA	**15**	**20**	**21**	**25**	**20**	**14**	**6**	**-6**
Specific sound level $L_{Aeq,T}$ = 29 dB								

4.12 The calculation results indicate a specific sound pressure level of approximately 22 dB $L_{Aeq,T}$ at the nearest dwellings in cooling mode and approximately 29 dB $L_{Aeq,T}$ in the louder heating mode.

4.13 Taking into consideration the tonal characteristics of the unit and the resulting sound level, it is considered unnecessary to apply a correction (penalty) with regard to the potential tonality or characteristics of the noise as experienced at the receptor position.

4.14 On this basis, the specific sound level is considered to be equal to the rating level (29 dB $L_{Ar,15min}$).

4.15 The recommended noise limit at neighbouring dwellings is 31 dB $L_{Aeq,15min}$ during the daytime.

4.16 The sound rating level of the condenser units therefore achieves the target noise limit in both hearting mode and cooling mode.

4.17 With regard to the anticipated noise impact, BS 4142 states:

The significance of sound of an industrial and/or commercial nature depends upon both the margin by which the rating level of the specific sound source exceeds the background sound level and the context in which the sound occurs...

The lower the rating level is relative to the measured background sound level, the less likely it is that the specific sound source will have an adverse impact or a significant adverse impact. Where the rating level does not exceed the background sound level, this is an indication of the specific sound source having a low impact, depending on the context.

4.18 Noise from the condensers is therefore expected to have a low impact at neighbouring dwellings.

Vibration control

4.19 It is recommended that suitable anti-vibration (resilient) mounts are fitted to the units in order to eliminate the potential for structure-borne noise. Without appropriate anti-vibration mounts, vibration levels could potentially become audible as structure-borne noise within the main hall.

Noise breakout from the building envelope

4.20 External walls are expected to be of a brickwork/cavity/blockwork construction. The sound insulation performance of such a construction is typically in the region of 50 to 55 dB R_w.

4.21 It is understood that the flat roof will be a single-ply construction with Rockwool insulation and suspended ceiling tiles (Ecophon or similar). The sound insulation performance of such a construction is typically in the region of 43 to 47 dB R_w.

4.22 The external glazing is expected to be the weakest element with regard to the building envelope sound insulation.

4.23 It is therefore recommended that acoustically laminated double glazing (e.g. 6 mm glass / 16 to 20 mm cavity / 6.8 mm acoustic laminate) is installed to the north and west facing elevations, as opposed to standard thermal double glazing.

4.24 As an example, Pilkington Optiphon is a high performing acoustic laminate that can be used within double glazed systems.

- www.pilkington.com/en-gb/uk/products/product-categories/noise-control/pilkington-optiphon/

4.25 The composite sound insulation of the building envelope has been determined taking into consideration the proposed dimensions, surface area and typical sound insulation of each element.

4.26 The calculation results in Table 4.5 overleaf indicate a composite sound insulation performance of approximately 44 dB R_w with acoustically laminated double glazing (windows closed).

Table 4.5 – Building envelope sound insulation (acoustically laminated double glazing)

Title: Carlisle Villa Boxing Club Sound Transmission Loss (ISO 12354)												
Formula/Comment	*Single Value*		*63*	*125*	*250*	*500*	*1000*	*2000*	*4000*	*8000*	*Rw*	*(C_1,C_{tr})*
$R = -10 \log \Sigma 10^{(-R_{p,i}/10)}$	ΔR			29.1	33.4	39.9	45.0	48.0	50.6		44	(-2,-5)
$R_{framing}$												
R				29.1	33.4	39.9	45.0	48.0	50.6		44	(-2,-5)
$D_{n,f} = R - 10 \log (S_{tot} / A)$												
$D_{n,f,framing}$												
$D_{n,f}$		Mass										
Materials with additional layer												
6mm glass/16 - 20 mm cavity/6.8mm lam		11.8		23.0	24.0	34.0	42.0	43.0	52.0		37	(-2,-6)
Brickwork / blockwork cavity wall		116.2		40.0	44.0	45.0	51.0	56.0	60.0		51	(-1,-4)
Flat roof, rockwool slab, suspended ceiling		131.8		28.0	34.0	40.0	45.0	49.0	50.0		44	(-2,-5)
Timber door with permieter sealing		2.0		17.0	21.0	26.0	29.0	31.0	34.0		29	(-1,-3)

4.27 The sound pressure level at the nearest dwelling has been calculated using the following equation:

- $SPL_2 = SPL_1 – R_w + 10 \, Log \, S – 20 \, Log \, r - 14 \, dB$

4.28 Where SPL2 is the sound pressure level at the dwelling; SPL1 is the internal sound pressure level adjacent to the wall/roof where sound breakout will occur; R_w is the weighted sound reduction index; S is the surface area of the walls/roof; r is the distance from the building to the nearest dwellings.

4.29 Sample measurements previously conducted at a number of training classes indicate equivalent continuous sound levels in the region of 80 to 85 dB $L_{Aeq,60sec}$. The sound level generated is predominantly due to the amplified sound system, as opposed to noise from participants themselves.

4.30 It is assumed that the training class and associated music/noise will operate continuously for a given assessment period (i.e. 15-minute period).

4.31 On the basis of the above, the predicted ambient sound level at the nearest dwellings on Alton Street due to breakout from the building envelope is approximately 28 to 33 dB $L_{Aeq,15min}$.

4.32 The results of the survey indicate that the typical background sound level was 35 to 36 dB $L_{A90,15min}$ during the daytime (ref: Table 3.1), whereas the average ambient sound level was 45 to 51 dB $L_{Aeq,15min}$ (ref: Table 3.2).

4.33 The lowest ambient sound level was 35 to 40 dB $L_{Aeq,15min}$ during the daytime period.

4.34 The resulting breakout sound level is therefore notably below the existing background and ambient sound level during the daytime period (with windows closed).

4.35 On this basis, negligible noise related impacts are anticipated at the nearest dwellings due to noise breakout from the building envelope.

4.36 It should be noted that with windows open, the composite sound insulation of the building envelope will reduce from 44 dB R_w to approximately 15 dB R_w, in which case the existing background and ambient sound level will be exceeded (which in turn is likely to lead to complaints).

4.37 On this basis, it is recommended that the new windows remain closed, or alternatively, sealed units should be installed to help prevent noise disturbance at the nearest dwellings.

5. Conclusion

5.1 Continuous sound level monitoring has been conducted over a weekend period in order to determine the existing background and ambient sound pressure levels at the site.

5.2 From the survey data, an appropriate daytime sound level target has been determined for new building services plant (condenser units).

5.3 The sound rating level of the proposed condenser units is expected to achieve the target noise limit in both hearting mode and cooling mode.

5.4 On the basis of this assessment and BS 4142 guidance, condenser related noise is expected to have a low to negligible impact at adjacent dwellings.

5.5 At this stage, additional noise mitigation measures are considered unnecessary for the proposed outdoor condenser units.

5.6 The resulting breakout sound level due to amplified music is predicted to be notably below the existing background and ambient sound level during the daytime period (with windows closed).

5.7 On this basis, negligible noise related impacts are anticipated at the nearest dwellings due to noise breakout from the building envelope.

5.8 It is recommended that the new windows are acoustically laminated as opposed to standard thermal double glazing and windows should remain closed (or be fully sealed) during training/exercise classes.

5.9 The proposed extension and air-conditioning system is expected to provide a notable improvement to the current situation, in terms of noise affecting the local residents. During the survey, noise breakout from the existing fire escape doors (facing the dwellings on Alton Street) was audible and was considered to be a weak point in the building envelope. The doors and existing glazing will be removed and replaced as part of the proposals.

Appendix A
Proposed floor plan and elevations

Figure A.1 – Existing floor plan

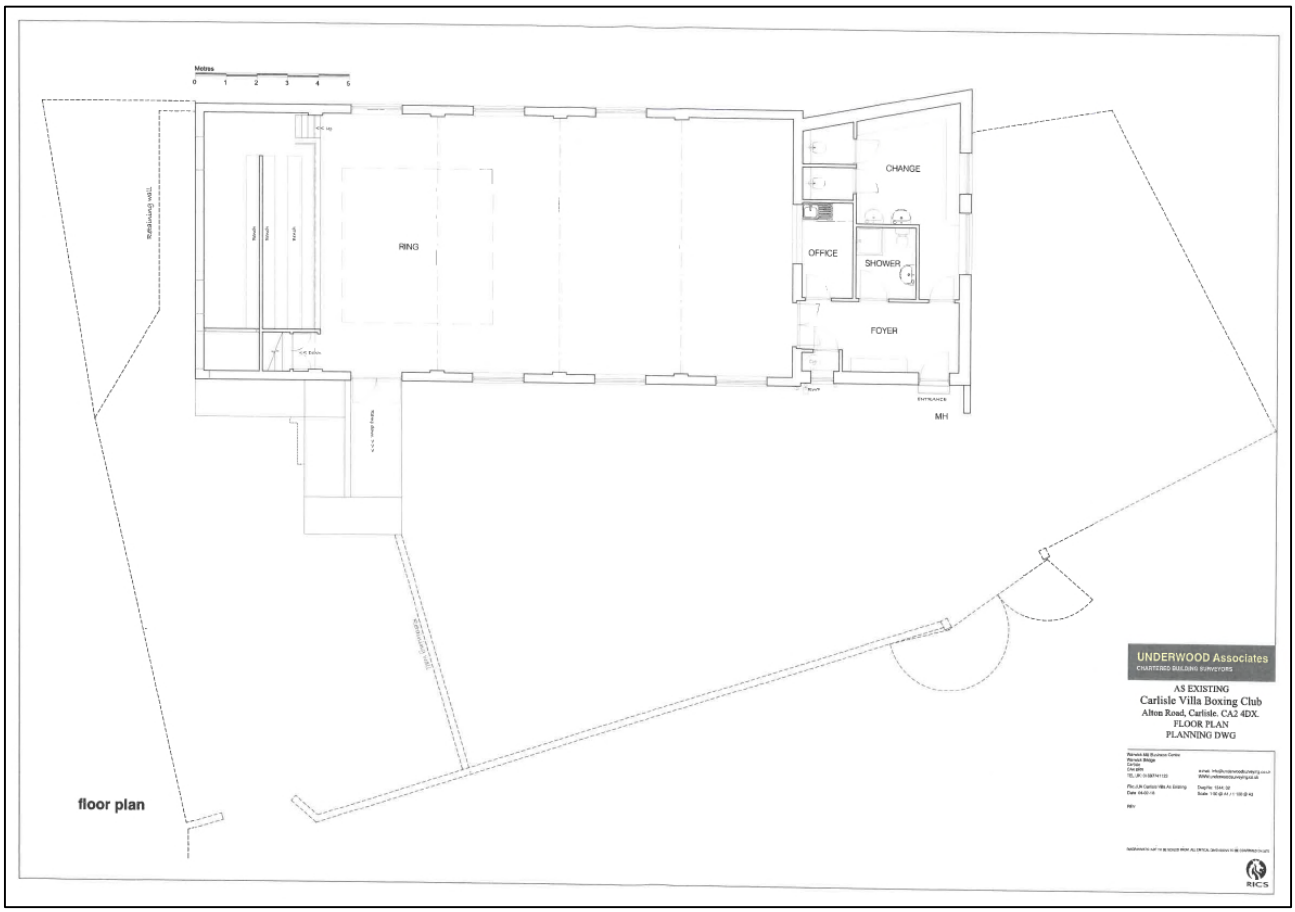


Figure A.2 – Proposed floor plan

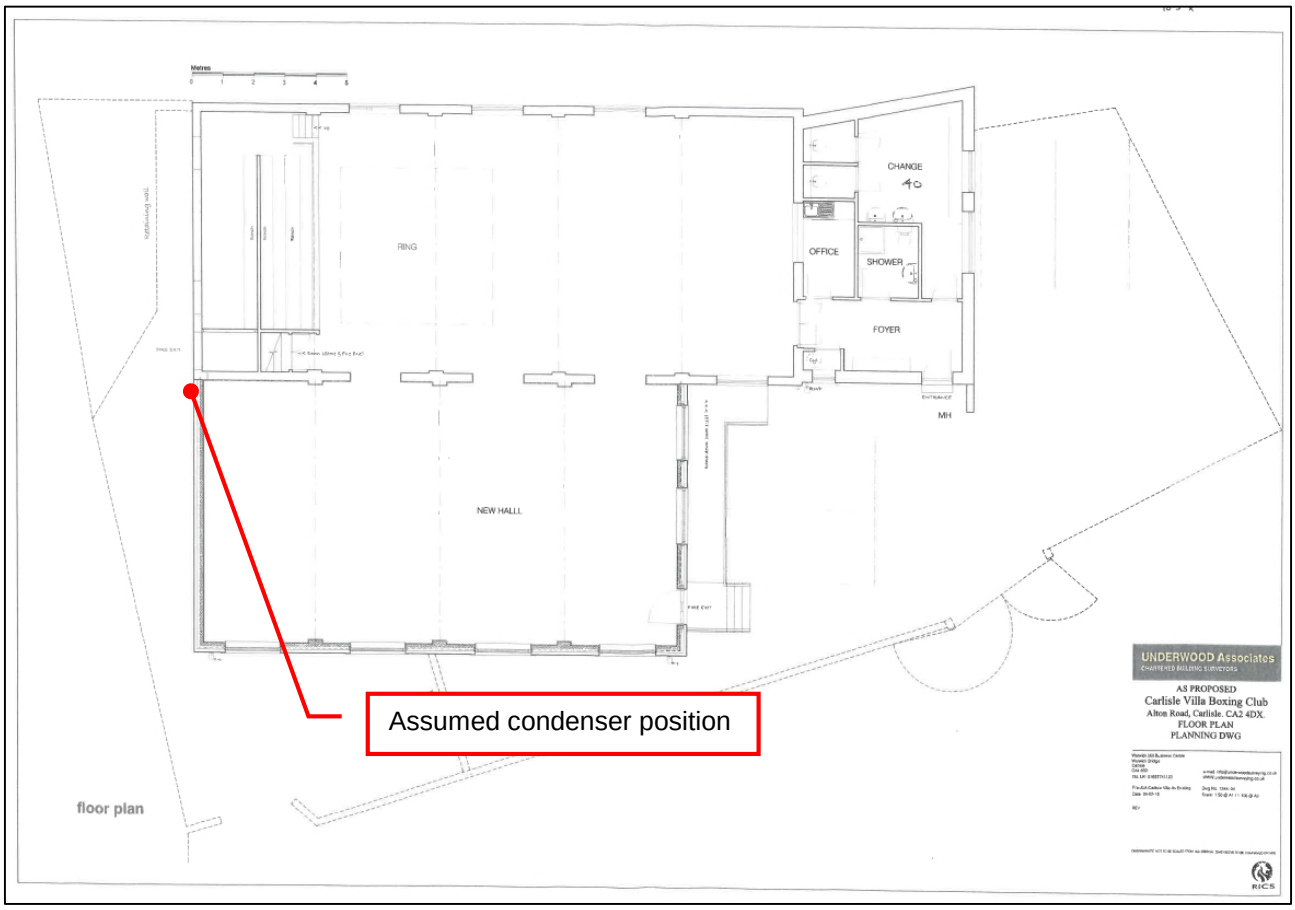


Figure A.3 – Existing elevations

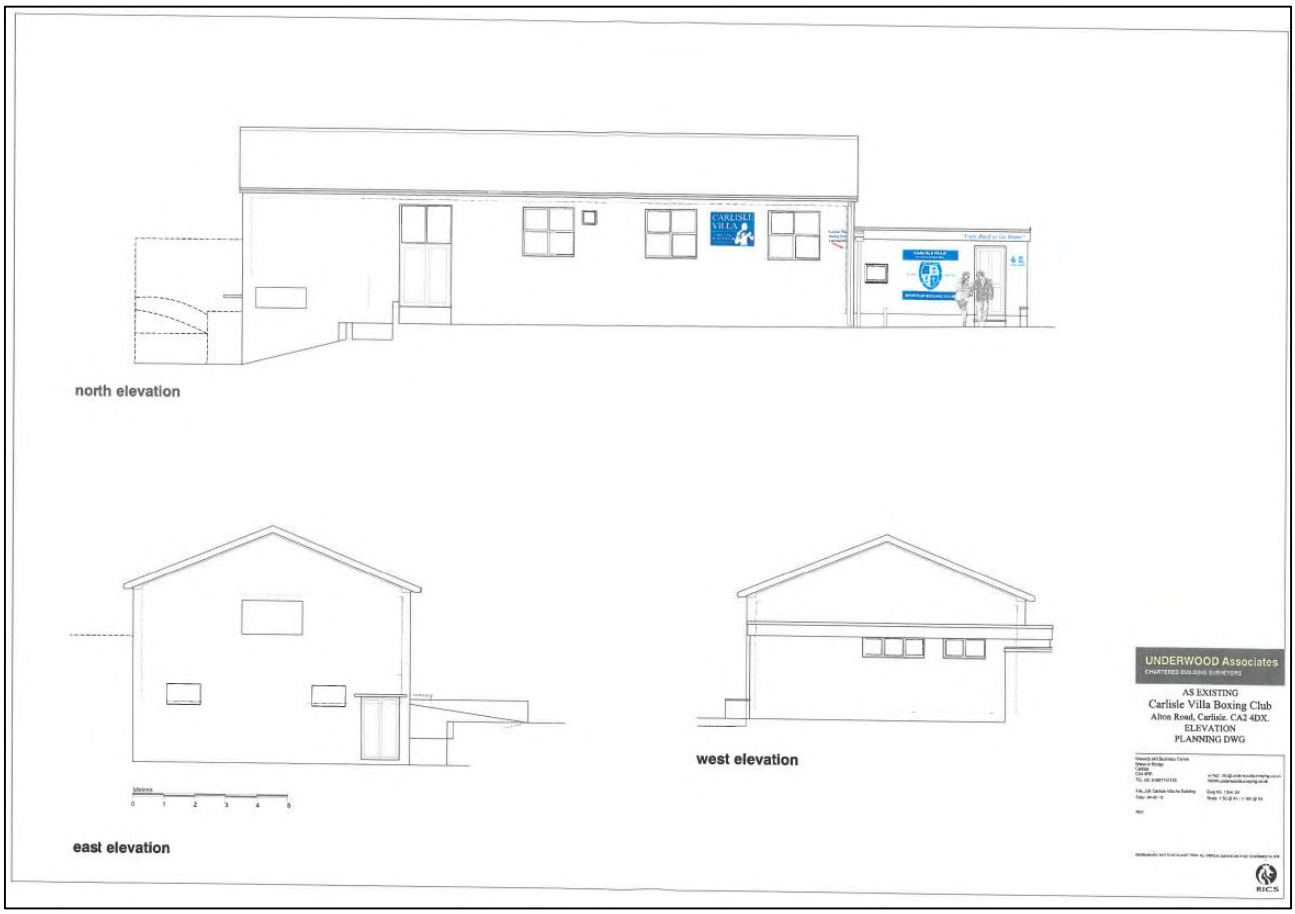
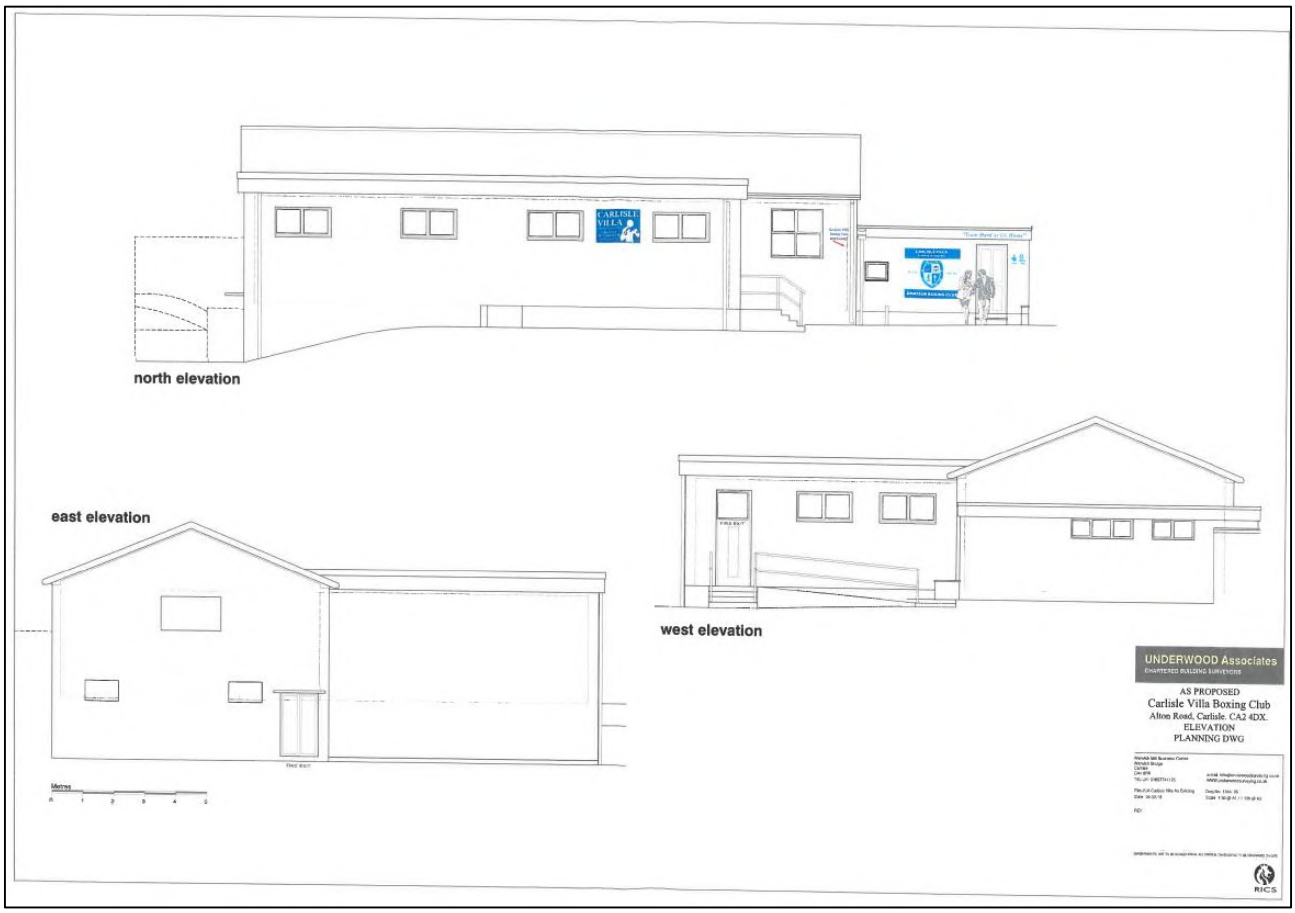
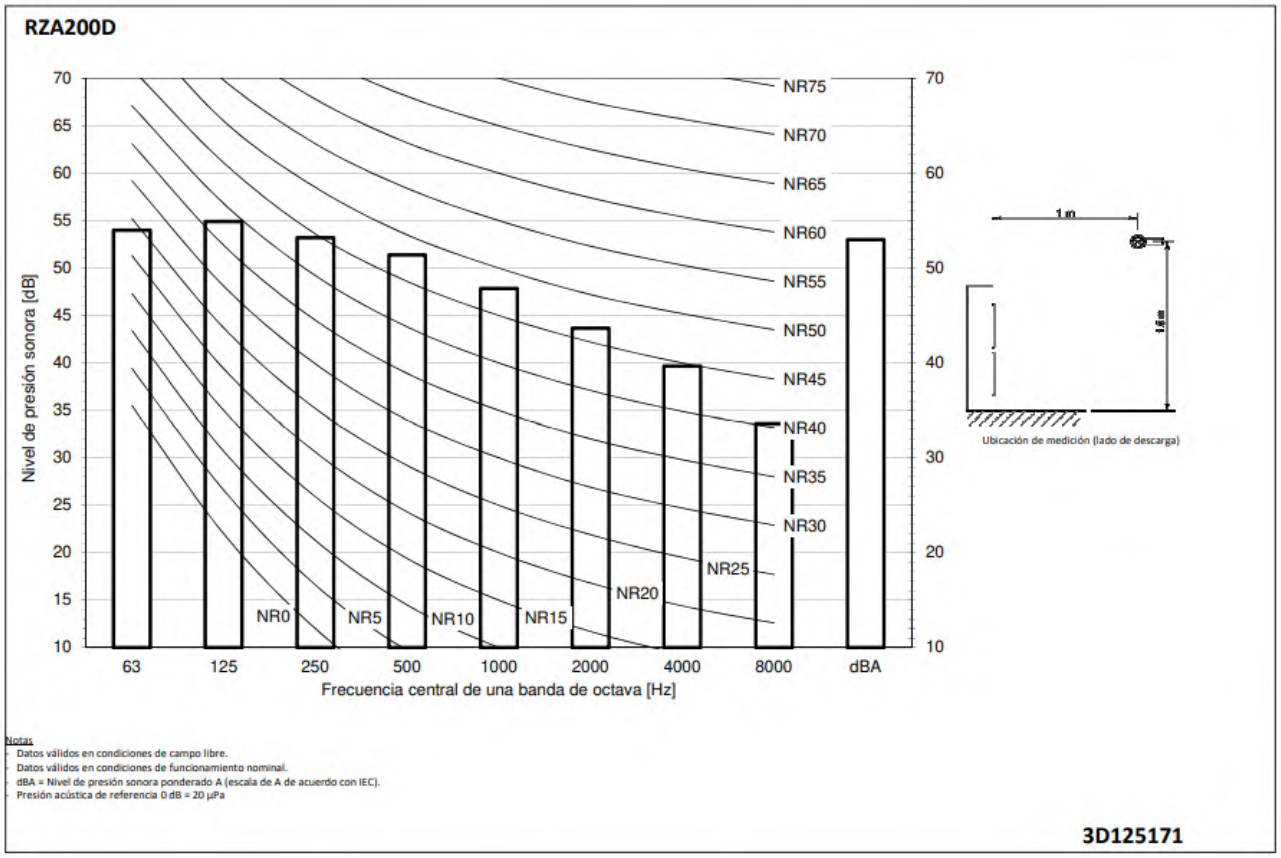


Figure A.4 – Proposed elevations

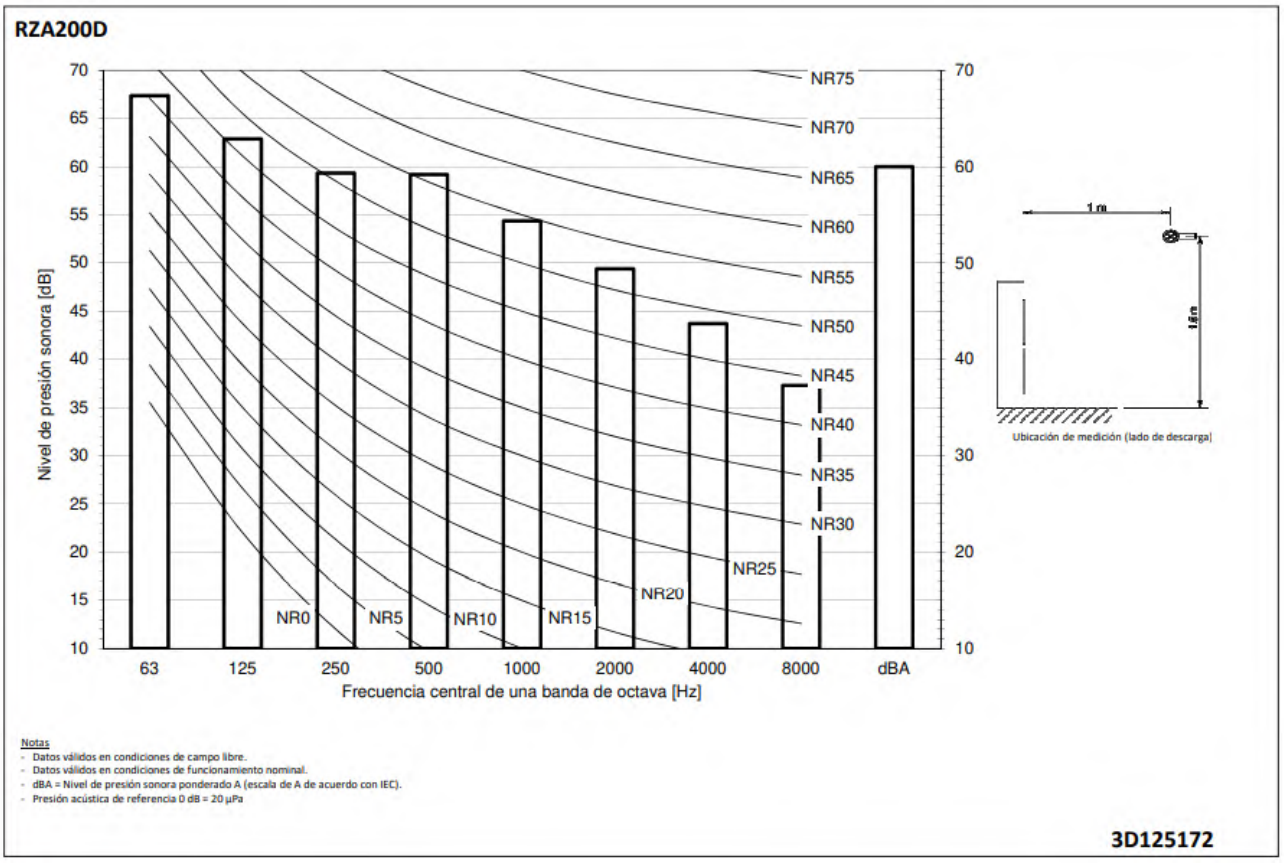


Appendix B
Condenser sound level data

Cooling mode



Heating mode



Appendix C
Assessment terminology

Assessment terminology

Term	Description
dB (decibel)	The scale on which sound pressure level is expressed. It is defined as 20 times the logarithm of the ratio between the root-mean-square pressure of the sound field and a reference pressure ($2x10^{-5}$Pa).
dB(A)	The most widely used weighting mechanism that best corresponds to the response of the human ear is the 'A'-weighting scale. This is widely used for environmental noise measurement, and the levels are denoted as dB(A) or L_{Aeq}, L_{A90} etc, according to the parameter being measured.
Acoustic environment	Sound from all sources as modified by the environment.
Ambient sound level	The totally encompassing sound in a given situation at a given time; it is usually composed of sound from many sources, near and far.
Background sound level	The sound level in the absence of a specific noise source under consideration (e.g. plant/machinery), measured as $L_{A90,T}$.
Residual sound	Ambient sound remaining at the assessment location when the specific sound source is suppressed to such a degree that it does not contribute to the ambient sound.
Specific sound source	Sound source being assessed.
Specific sound level	Equivalent continuous A-weighted sound pressure level produced by the specific sound source at the assessment location over a given reference time interval, T.
Rating level $L_{Ar,T}$	Specific sound level plus any adjustment for the characteristic features of the sound.