Cole Jarman

11 Rosslyn Hill, NW3

Plant Noise Report

Report 14/0692/R1

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Thomas Croft Architects

Thomas Croft Architects
9 Ivebury Court
325 Latimer Road
London
W10 6RA

Issue	Description	Date	Prepared by	Checked by
0	First Issue	06 January 2014	Matthew White	Johnny Berrill

Prepared by

Checked by

Cole Jarman Limited Reg. in England and Wales No. 7102436
t +44 (0)1932 829007 **f** +44 (0)1932 829003
John Cree House, 24B High Street, Addlestone, Surrey, KT15 1TN
e info@colejarman.com **w** www.colejarman.com

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Attachments

1 Introduction

1.1 As part of extension works at 11 Rosslyn Hill, NW3, there will be new mechanical plant installed in the garden area at 11 Rosslyn Hill.

1.2 In order to obtain planning permission, suitable plant noise limits must be devised to comply with the criteria set by the Borough of Camden. Cole Jarman has been appointed to conduct a noise survey of existing noise levels at the site.

1.3 This report presents the existing noise levels at the site and sets out plant noise limits to which the new equipment will need to adhere.

2 Site Description

2.1 The site is located at 11 Rosslyn Hill, Hampstead, London NW3 5UL. A plan of the site and the surrounding area is attached in figure 14/0692/SP1.

2.2 The proposed plant items are to be housed in an area to the south-east of the main house as marked up in the figure.

2.3 The site is set back from the major roads and is afforded some screening by the existing buildings. To the east of the site is Rosslyn Hill which experiences high levels of road traffic. To the north of the site is Air Studios. The surrounding properties are predominantly residential.

2.4 The nearest noise sensitive dwellings are to the rear facades of the properties on Rosslyn Hill and Belsize Lane.

3 Noise Survey

3.1 Methodology and Instrumentation

3.1.1 An unattended noise survey was undertaken commencing at 1500 hours on 22nd December 2014 and concluding at 1500 hours on 23rd December 2014. Noise measurements were made at a location chosen to be representative of the nearest noise sensitive receptors. The location is marked as MP1 on attached site plan 14/0692/SP2.

3.1.2 The microphone was located in free-field position approximately 4m above ground.

3.1.3 Measurements in terms of L_{Amax}, L_{Aeq} and L_{A90} indices were made over consecutive 15 minute periods (see the Glossary of Acoustic Terms for an explanation of the noise units used).

3.1.4 Noise measurements were made the equipment listed in table T1 below.

Item	Manufacturer	Type
Sound Level Analyser	Rion	NL-52
Acoustic Calibrator	Rion	NC-74
Weatherproof windshield	Rion	WS-15

T1 Equipment used during unattended noise survey.

3.1.5 The microphone was fitted with a weather-proof windshield and calibrated before and after the survey to ensure that a consistent and acceptable level of accuracy was maintained throughout.

3.1.6 The weather conditions during the setup of the equipment were dry with variable wind speeds ranging from calm to moderate, with wind speed predominantly less than 5m/s. The weather conditions at the collection were similar in nature. It is considered that the wind speed was below 5m/s for the majority of the noise survey. This is backed up by publically available weather data.

3.2 Results

3.2.1 A full time history is presented in the attached figure 14/0692/TH01.

3.2.2 Results for the minimum measurement background noise levels are shown in table T2.

Measurement Position		Lowest Measured Background Noise Level (L90) dB at Octave Band Centre Frequency (Hz)								
		dB(A)	**63**	**125**	**250**	**500**	**1k**	**2k**	**4k**	**8k**
MP1	**Daytime** (0700-2300)	**44**	50	47	43	40	40	34	28	28
	Night time (24-hour)	**39**	47	44	39	35	33	27	25	24

T2 Lowest measured background noise levels (free-field)

4 Plant Noise Limits

4.1.1 The site falls within the London Borough of Camden. In accordance with the current version of the 'Camden Council Noise Standards' the following section 1.52 will apply to the proposed plant, with regard to 'Disturbance from plant or machinery':

The Council seeks to ensure that the level of noise/vibration from all plant and machinery does not increase existing ambient noise levels, therefore planning permission will only be granted for plant or machinery if it can be operated without causing a loss to local amenity and does not exceed the thresholds set out in Table E. In determining whether a proposal may be acceptable, the Council will require planning applications to include details of all proposed plant and machinery associated with a development, including an acoustic report. This may require close co-operation between an environmental or air handling engineer and the architect to agree an acceptable design solution for the particular premises and uses for which the system is designed. Supplementary guidance contains general guidance on minimising the impacts of plant and machinery.

4.2 Table E referred to above is reproduced below:

Table E: Noise levels from plant and machinery at which planning permission will not be granted

Noise description and location of measurement	Period	Time	Noise level
Noise at 1 metre external to a sensitive façade	Day, evening and night	0000-2400	5dB(A) <LA90
Noise that has a distinguishable discrete continuous note (whine, hiss, screech, hum) at 1 metre external to a sensitive facade	Day, evening and night	0000-2400	10dB(A) <LA90
Noise that has distinct impulses (bangs, clicks, clatters, thumps) at 1 metre external to a sensitive facade	Day, evening and night	0000-2400	10dB(A) <LA90
Noise at 1 metre external to sensitive façade where LA90 >60dB	Day, evening and night	0000-2400	55dB L_{Aeq}

4.3 Based on these requirements and the results of the survey (including façade correction), plant noise limits for nearby properties are listed in table T3 below. They correspond to a level 5dB below the minimum existing background noise level.

Noise Emission Limit, dB(A)	
Daytime (0700-2300)	**Night time (24-hour)**
42	37

T3 Plant noise emission limits at 1m from the façade of the nearest residential properties.

4.4 Noise limits are to apply to the combined effect of all plant items that run during any particular period and should be assessed to a position 1m from the façade of the nearest or worst affected noise sensitive properties.

4.5 An assessment of plant noise emissions should be conducted to these noise sensitive receivers when details of the proposed plant installation are known so that appropriate measures can be implemented to ensure these limits are achieved.

5 Conclusion

5.1 As part of extension works at 11 Rosslyn Hill, NW3, there will be new mechanical plant installed in the garden area at 11 Rosslyn Hill.

5.2 In order to obtain planning permission, suitable plant noise limits have been devised to comply with the criteria set by the Borough of Camden.

5.3 Cole Jarman have conducted an environmental noise survey at a location representative of the nearest residential properties to determine the lowest background noise levels in the vicinity of the nearest noise sensitive dwellings.

5.4 Using the results of the survey, plant noise limits have been set in accordance with criteria set out by the Borough of Camden, to assist with the subsequent design of the new plant once selected.

End of Section

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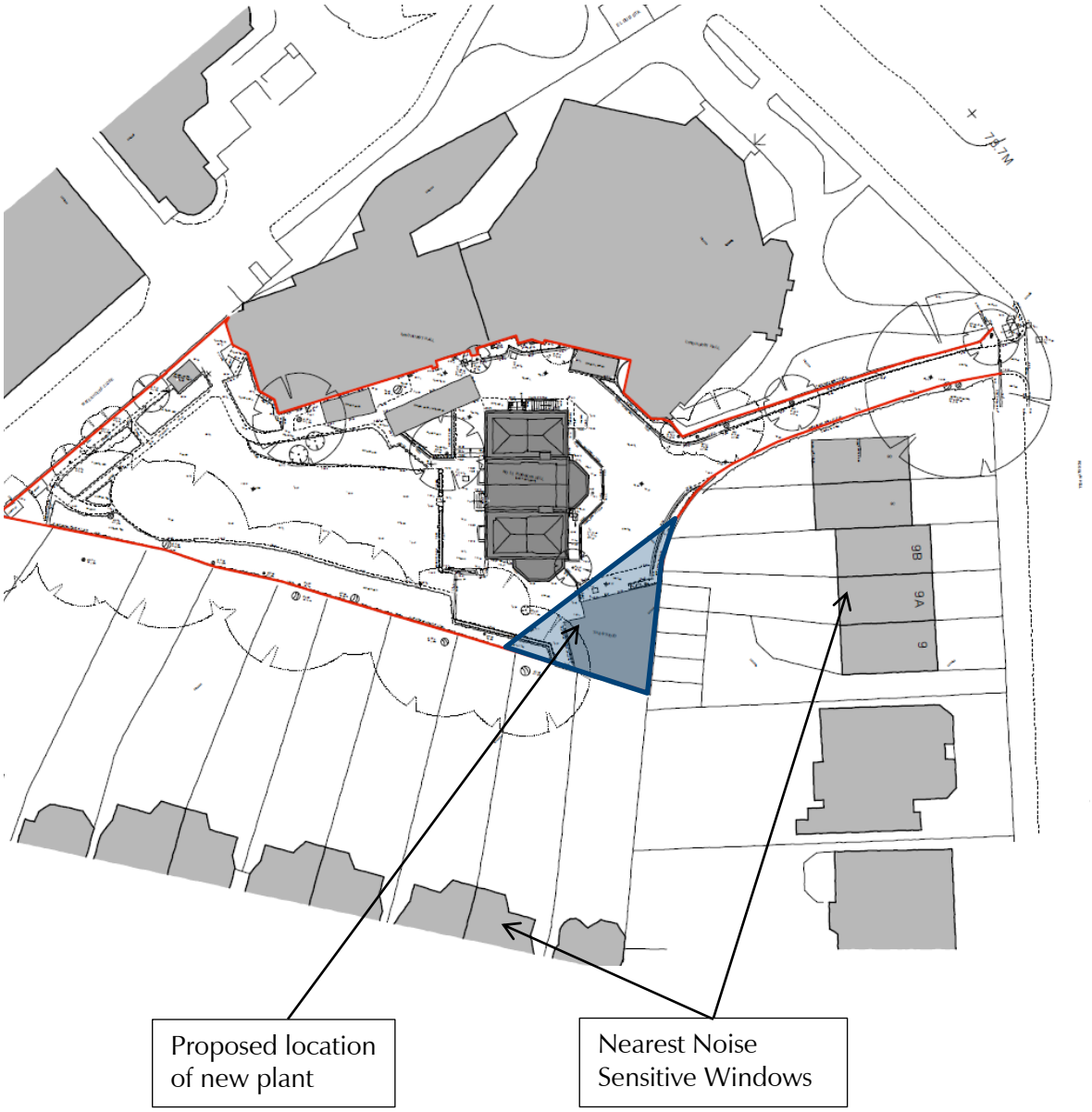
Figure 14/0692/SP1



Title: Site Plan showing nearest noise sensitive windows and proposed location for new plant

Project: 11 Rosslyn Hill, NW3

Date: December 2014

Scale: Not to scale

Cole Jarman Limited Reg. in England and Wales No. 7102436
t +44 (0)1932 829007 **f** +44 (0)1932 829003

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e info@colejarman.com **w** www.colejarman.com

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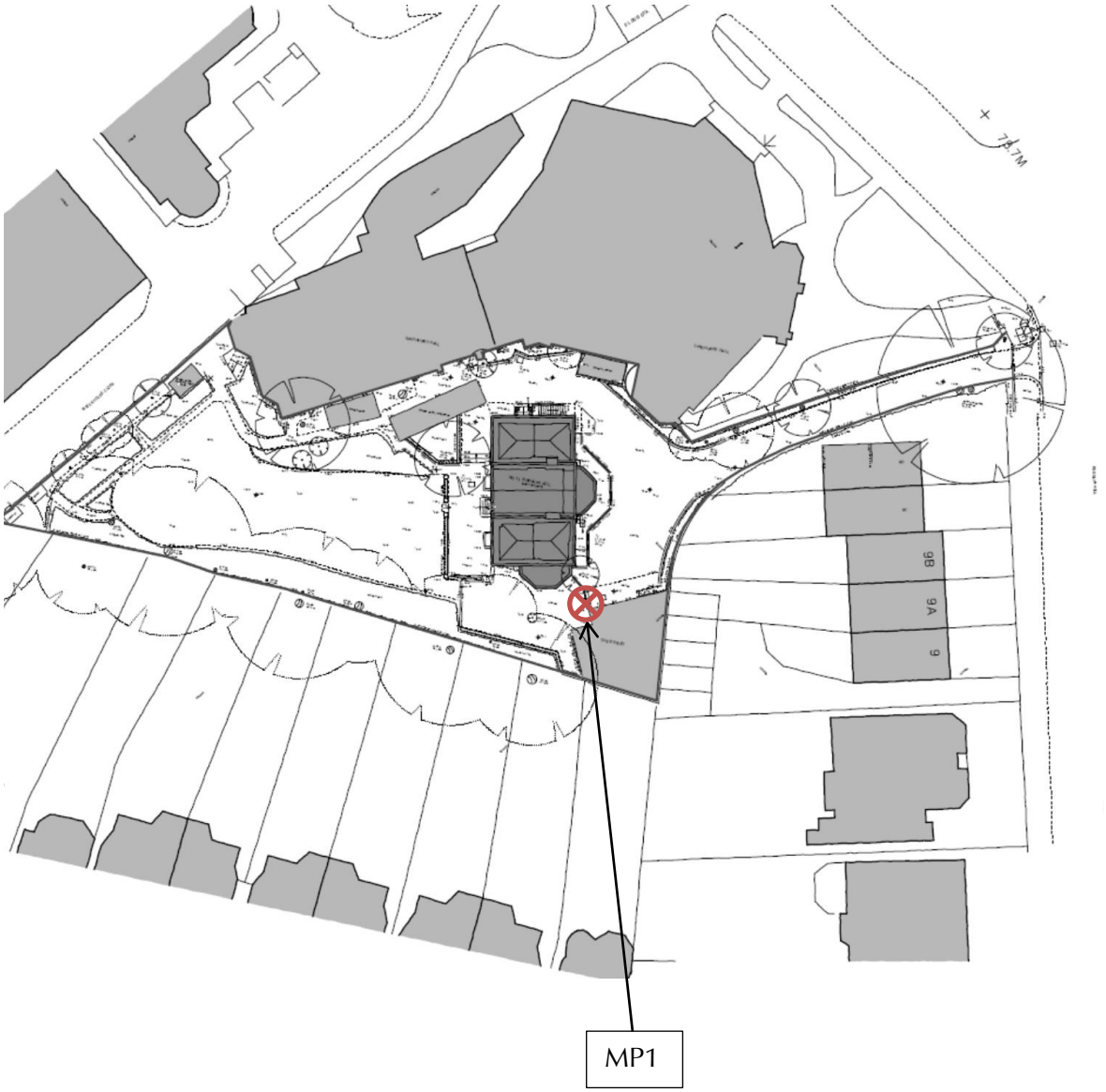
Figure 14/0692/SP2



Title: Site Plan showing measurement location

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Noise Level Time History at Position MP1, 22 to 23 December 2014

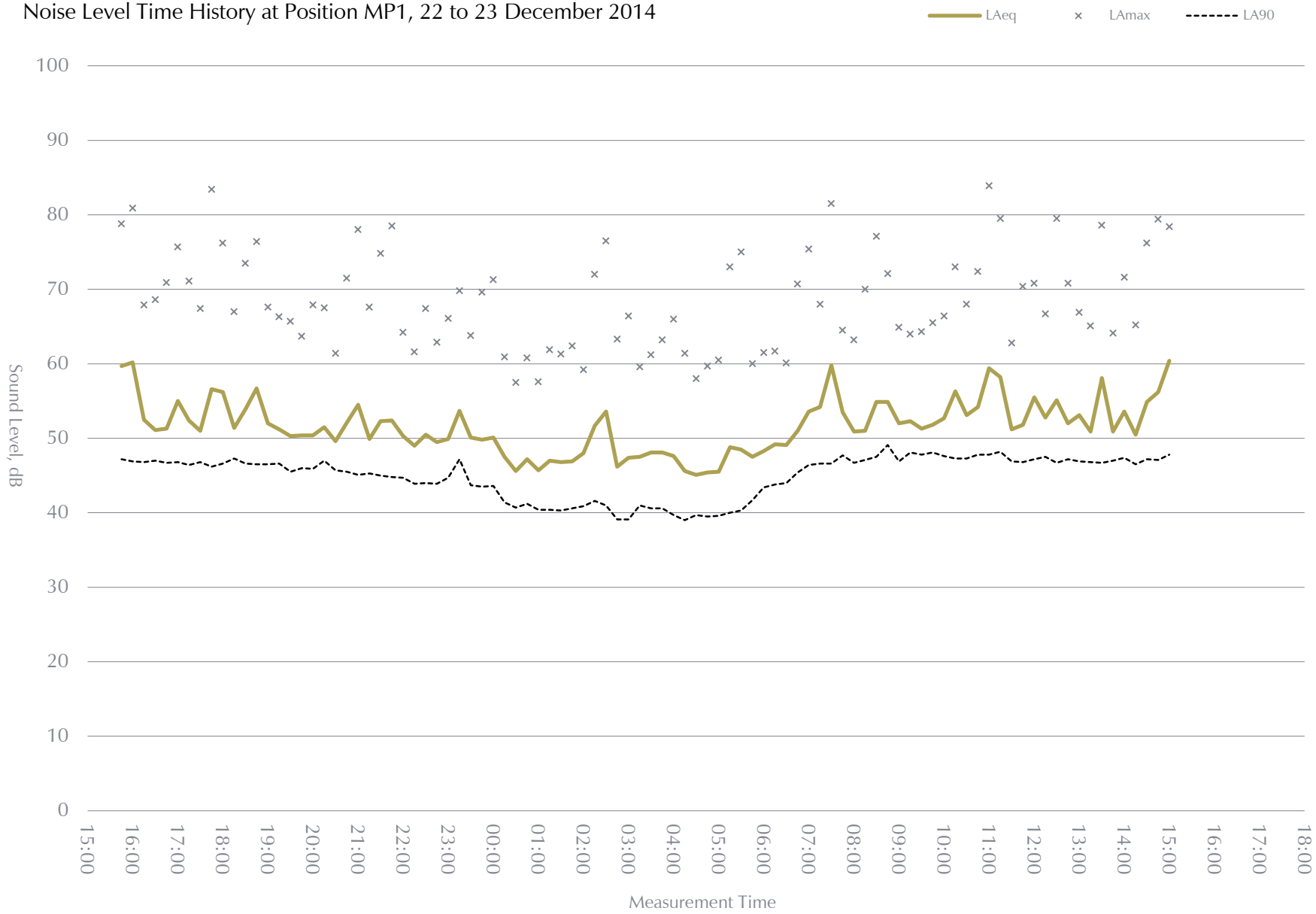

Figure 14/0692/TH01

Glossary of Acoustic Terms

L_{Aeq}:

The notional steady sound level (in dB) which over a stated period of time, would have the same A-weighted acoustic energy as the A-weighted fluctuating noise measurement over that period. Values are sometimes written using the alternative expression dB(A) L_{eq}.

L_{Amax}:

The maximum A-weighted sound pressure level recorded over the period stated. L_{Amax} is sometimes used in assessing environmental noise when occasional loud noises occur, which may have little effect on the L_{Aeq} noise level. Unless described otherwise, L_{Amax} is measured using the "fast" sound level meter response.

L_{A10} & L_{A90}:

If non-steady noise is to be described, it is necessary to know both its level and degree of fluctuation. The L_{An} indices are used for this purpose. The term refers to the A-weighted level (in dB) exceeded for n% of the time specified. L_{A10} is the level exceeded for 10% of the time and as such gives an indication of the upper limit of fluctuating noise. Similarly L_{A90} gives an indication of the lower levels of fluctuating noise. It is often used to define the background noise.

L_{A10} is commonly used to describe traffic noise. Values of dB L_{An} are sometimes written using the alternative expression dB(A) L_{n}.

L_{AX}, L_{AE} or SEL

The single event noise exposure level which, when maintained for 1 second, contains the same quantity of sound energy as the actual time varying level of one noise event. L_{AX} values for contributing noise sources can be considered as individual building blocks in the construction of a calculated value of L_{Aeq} for the total noise. The L_{AX} term can sometimes be referred to as Exposure Level (L_{AE}) or Single Event Level (SEL).

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