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12 OCT 2011

Cole Jarman

Sainsbury's Local, Torr Top Street, New Mills

Environmental Noise Survey

Report 11/1800/R1

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Attachments

11/1040/SP01
Site plan indicating noise survey measurement position

11/1040/TH01
Noise survey results (time-history graph).

11/1040/TH02
Noise survey results (time-history graph).

11/1040/TH03
Noise survey results (time-history graph).

11/1040/TH04
Noise survey results (time-history graph).

Glossary of Acoustic Terms

1 Introduction

1.1 It is proposed the existing Spar retail premises at Torr Top Street, New Mills be utilised as a Sainsbury's Local Store. The development will include the installation of mechanical services plant items. There will be new external refrigeration condenser plant to the rear of the existing post office area of the building. Air conditioning condensers will be on the rear of the main store building.

1.2 Cole Jarman has been appointed to conduct a background noise survey in order to establish plant noise limits at the nearest noise sensitive properties. As some plant will operate 24 hours per day and some daytime and evenings only, different noise limits will be required to reflect this.

1.3 This report presents the results of the background noise survey and sets plant noise limits to which the store should adhere.

2 Site Description

2.1 The site is located at Torr Top Street, New Mills. The site is shown on attached site plan 11/1040/SP01. The building is currently split into two main areas a Spar Supermarket and post office. The post office is contained within an extension located on the north western corner of the unit. The unit is proposed to be largely occupied by Sainsbury's.

2.2 The building is on a sloping site on the embankment above the River Sett. The building is single storey, but with the sloping site, to the rear below the store is an undercroft that contains some plant serving the existing store.

2.3 To the front of the building is Torr Top Street. Directly opposite is an open paved area with mixed residential/commercial uses beyond.

2.4 On the south side of the building adjacent to the building's loading area are two/three storey houses. Behind these houses at right angles there are further two storey houses forming St Albans Street.

2.5 To the north of the site is a car park associated with the building. Behind the car park to the east at a lower level there are 1-3 Cherry Tree Cottages, number 3 being level with the rear elevation of the store.

2.6 The land drops sharply to the east down to the river, beyond which are other more distant residences, some 50m from the rear façade.

2.7 Air conditioning plant associated with the new store would be located similarly to the existing, on the rear wall of the store. The refrigeration condensers will be located behind the current post office located on the northern edge of the store.

2.8 The noise climate around where the plant is proposed to be located is affected by the existing plant noise, with general background traffic also present.

3 Noise Survey Methodology and Instrumentation

3.1 Two unattended noise surveys were undertaken, the first commencing at 1700 hours on 13th June 2011. Measurements were made over consecutive 10minute periods until 0900 hours the following day.

3.2 The noise monitoring equipment was set up at two locations (MP1 and MP2) shown on the site plan 11/1040/SP01.

3.3 MP1 was at the north east corner of the building, representative of the adjacent No. 3 Cherry Tree Cottages.

3.4 MP2 was at the south east corner of the building, representative of the St Albans Street residences.

3.5 Both positions were around 1.5m above local ground level.

3.6 Measurements of the L_{Amax}, L_{Aeq} and L_{A90} indices were made (see the Glossary of Acoustic Terms for an explanation of the noise units used).

3.7 Noise measurements were made using two of each of the equipment items listed in table T1 below.

Item	Manufacturer	Type
Sound Level Analyser	Norsonic	118
Outdoor Microphone Enclosure	Norsonic	1212
Acoustic Calibrator	Norsonic	1251

T1 Equipment used during noise survey.

3.8 The microphones were fitted with weatherproof windshields and were calibrated before and after the survey to ensure a consistent and acceptable level of accuracy was maintained throughout.

3.9 The general weather conditions over the survey period were overcast, dry, cool and slight winds only.

3.10 The second unattended noise survey was conducted as the proposed plant lay out changed. This survey commenced at 1800 hours on 1st July 2011. Measurements were made over consecutive 10 minute periods until 1800 hours the following day.

3.11 The noise monitoring equipment was set up at two locations (MP1 and MP3) shown on site plan 11/1040/SP01.

3.12 MP1 was the same position used in the first noise survey. This measurement position was repeated in order to confirm that the background noise levels during the two surveys were similar.

3.13 MP3 was located on the northern façade of the building, behind the existing post office building and representative of the western boundary of 3 Cherry Tree Cottages.

3.14 Both positions were around 1.5m above local ground level.

3.15 Measurements of the L_{Amax}, L_{Aeq} and L_{A90} indices were made (see the Glossary of Acoustic Terms for an explanation of the noise units used).

3.16 Noise measurements were made using two of each of the equipment items listed in table T1 below.

Item	Manufacturer	Type
Sound Level Analyser	Norsonic	118
Sound Level Analyser	Norsonic	140
Outdoor Microphone Enclosure	Norsonic	1212
Acoustic Calibrator	Norsonic	1251

T2 Equipment used during noise survey.

3.17 The microphones were fitted with weatherproof windshields and were calibrated before and after the survey to ensure a consistent and acceptable level of accuracy was maintained throughout.

3.18 The general weather conditions over the survey period were dry, and warm with slight winds only.

4 Noise Survey Results

4.1 The minimum measured day time noise levels measured at MP1 during the 1st and 2nd noise surveys were 48 dB L_{A90} and 46 dB L_{A90} respectively. During the night time periods the minimum levels were 44 dB L_{A90} and 43 dB L_{A90}.

4.2 Comparing the results from MP1 during the two noise surveys shows a 1-2 dB decrease in noise levels between first and second noise survey which is not a significant change. The plant noise limits for this position have been based on the second noise survey.

4.3 The time history graphs show that the minimum measured daytime noise levels at MP2 and MP3 were 44 dB L_{A90} and 40 dB L_{A90} respectively. During the night time period the minimum levels were 43 dB L_{A90} and 33 dB L_{A90}.

5 Plant Noise Limits

5.1 In order to minimise the risk of creating a community noise disturbance, any plant installations should be designed such that they do not significantly increase the existing background noise climate at any nearby noise sensitive residential locations.

5.2 We have consulted the local Environmental Health Officer for High Peaks, Peter Hollingsworth. He has advised:

"Our informal policy in general is to require that the specific noise either measured or predicted at the nearest noise sensitive boundary does not exceed the pre-existing background noise (Ref. BS 4142 1997)."

5.3 Plant noise limits at nearby noise sensitive boundaries are shown in table T3 below. The noise rating level of the plant items to be installed, running individually or in combination, shall not exceed these limits at the nearest noise sensitive boundary. The noise rating level shall be either be measured or calculated following the guidance in BS 4142.

Location	**Noise Emission Limit, dB**	
	Daytime (0700-2300 only)	**Night time (24-hour)**
3 Cherry Tree Cottages eastern boundary	46	43
3 Cherry Tree Cottages western boundary	40	33
St Albans Street Residences boundary	44	43

T3 Plant noise emission limits at the nearest residential properties.

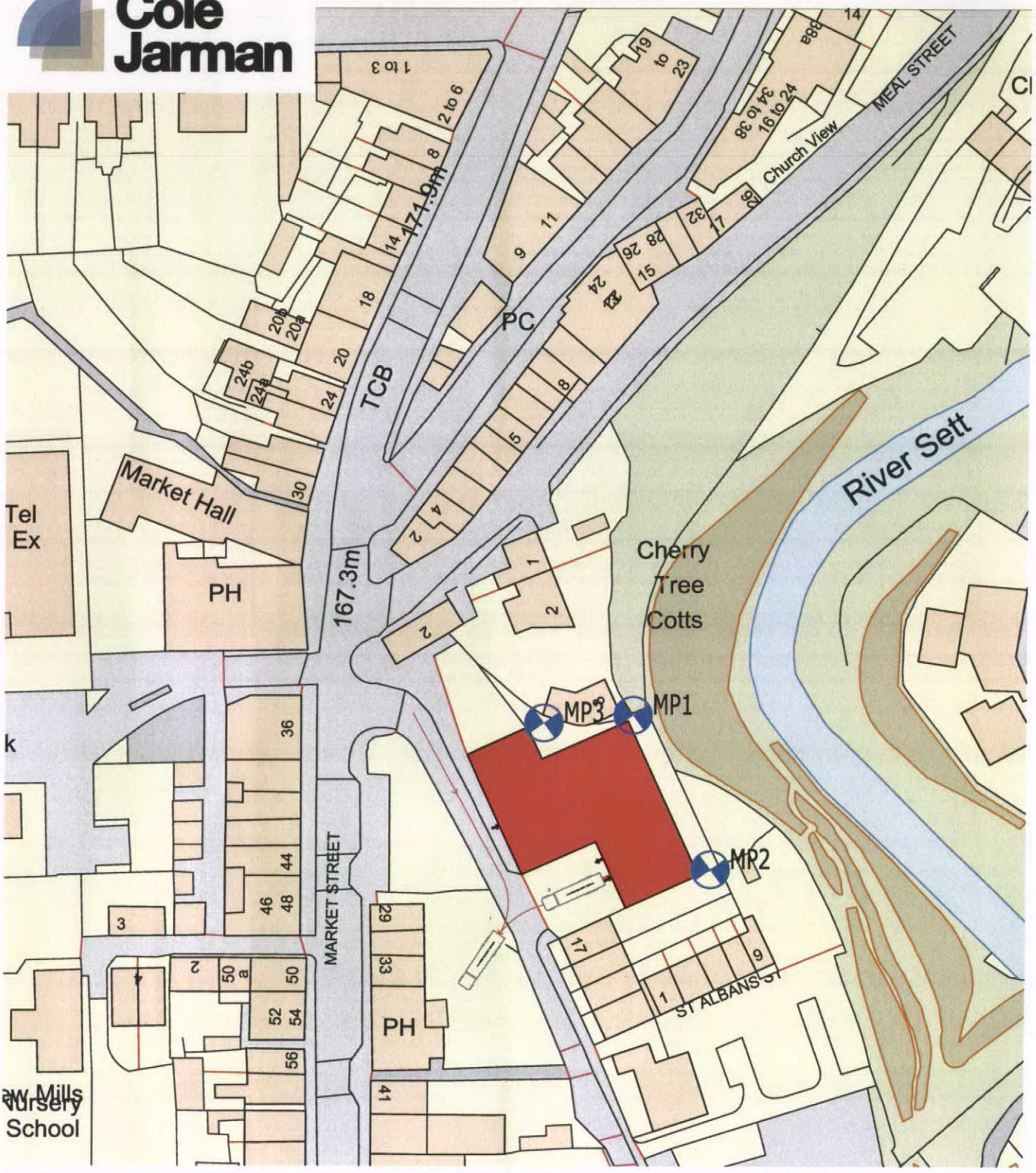
6 Conclusion

6.1 It is proposed the existing Spar retail premises at Torr Top Street, New Mills be utilised as a Sainsbury's Local Store. The development will include the installation of mechanical services plant items. There will be new external refrigeration condenser plant to the rear of the existing post office area of the building. Air conditioning condensers will be on the rear of the main store building.

6.2 Two environmental noise surveys have been conducted at the site. The results of the surveys have been presented and plant noise limits at the nearest residential receivers have been derived.

End of Section

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Title: Site plan indicating noise measurement positions

Figure 11/1800/SP01

Project: Torr Top Street, New Mills

Date: July 2011 Revision: 1

Scale: Not to scale

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Figure 11/1800/TH01

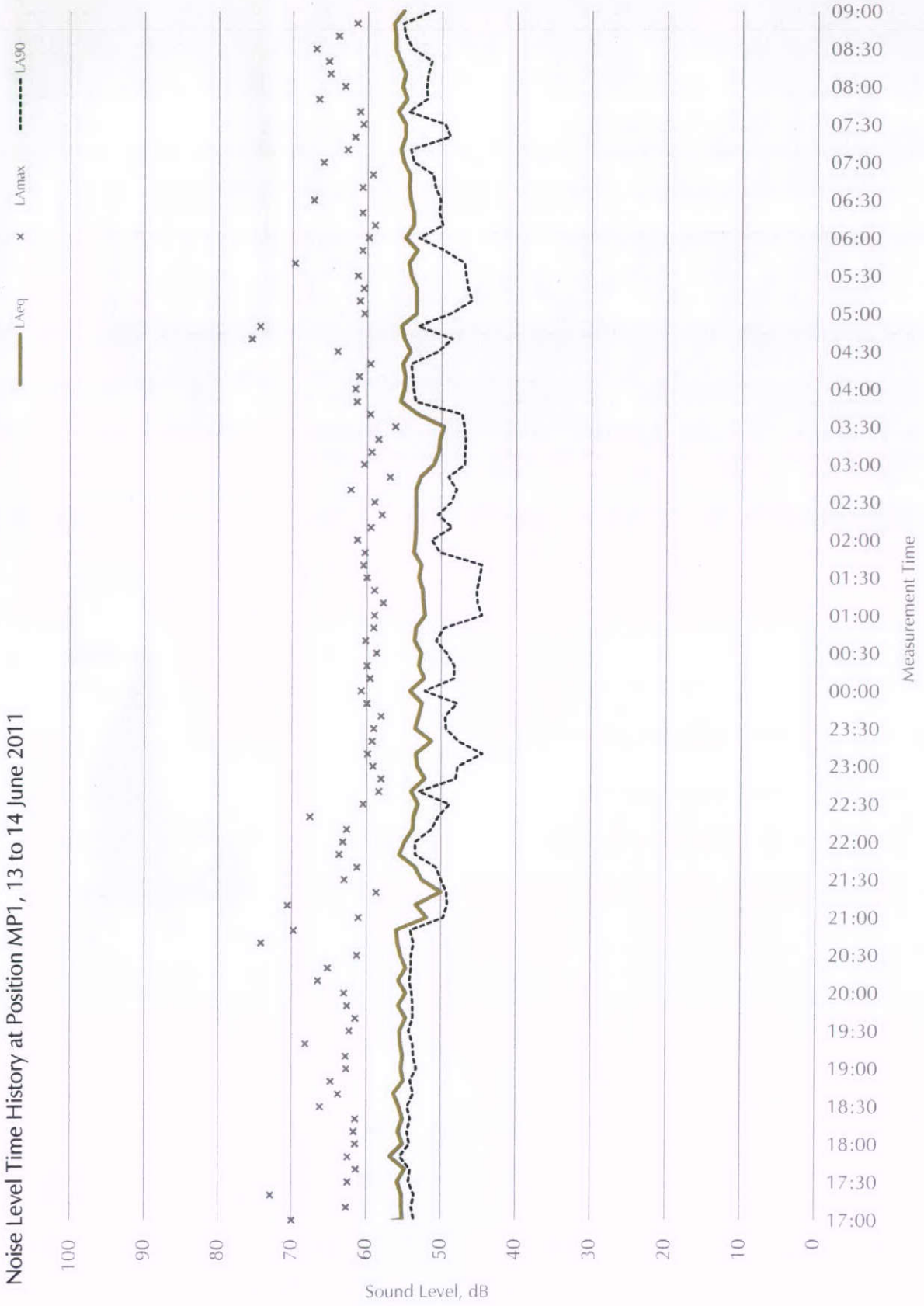


Figure 11/1800/TH02

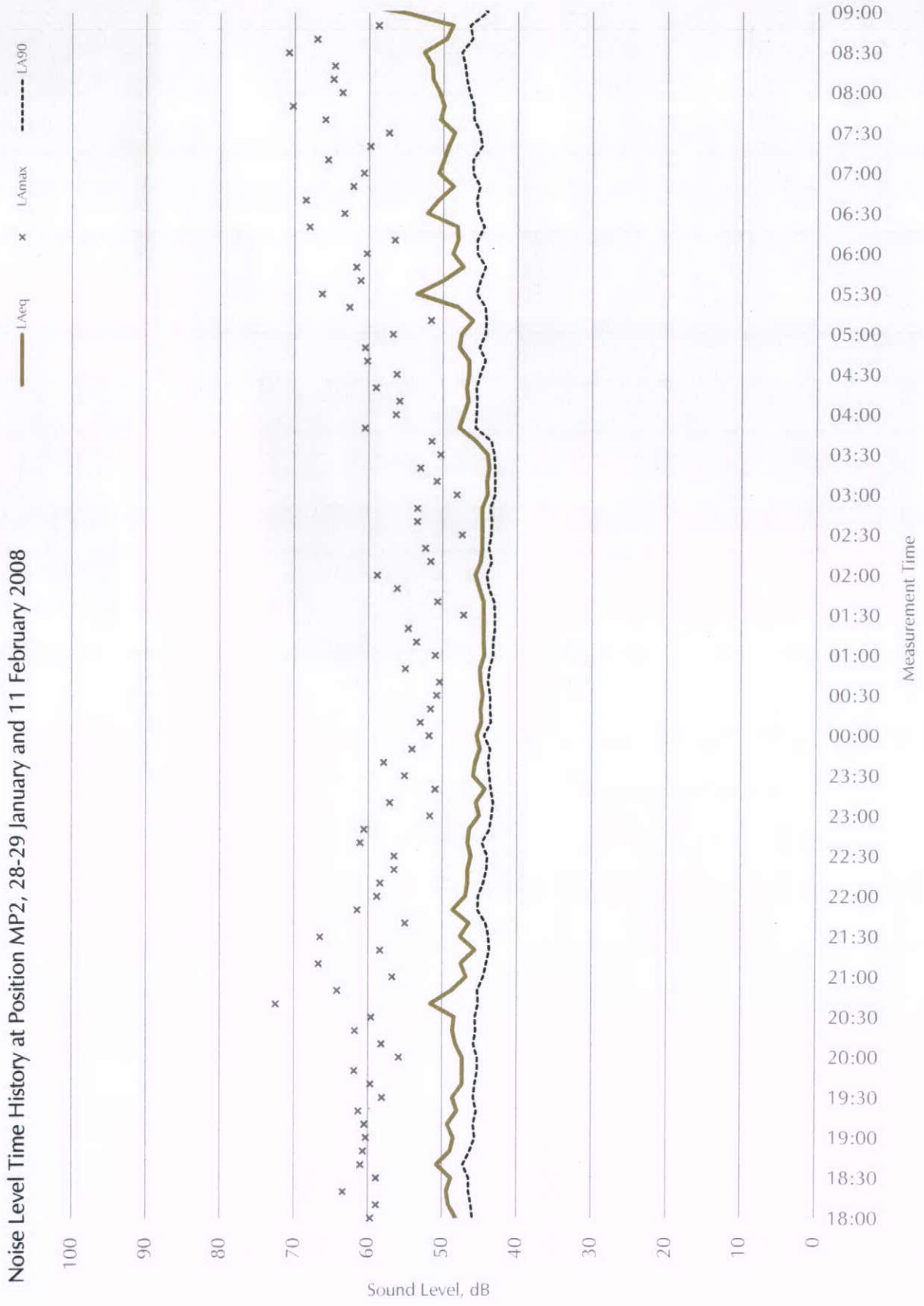


Figure 11/1800/TH03

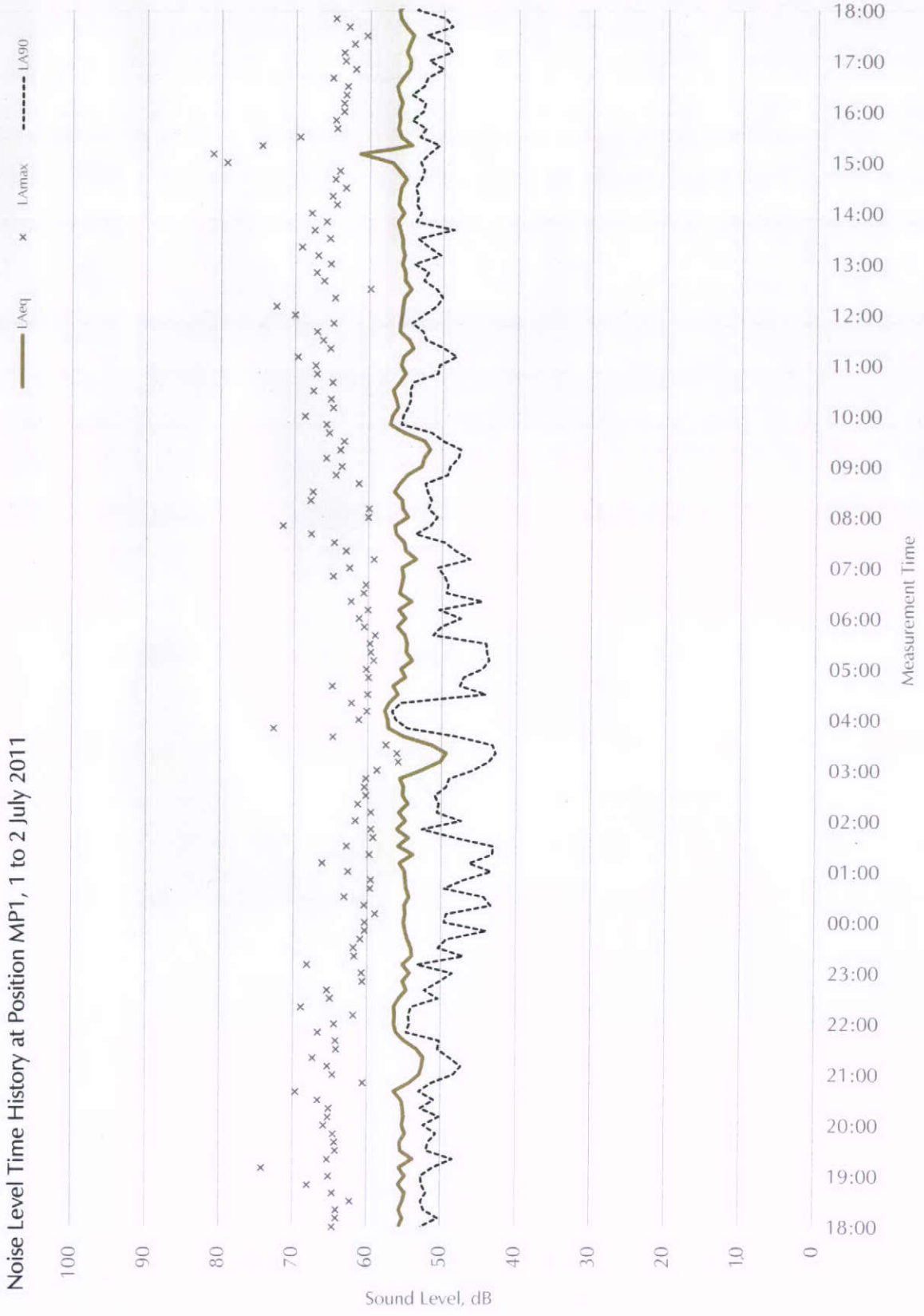
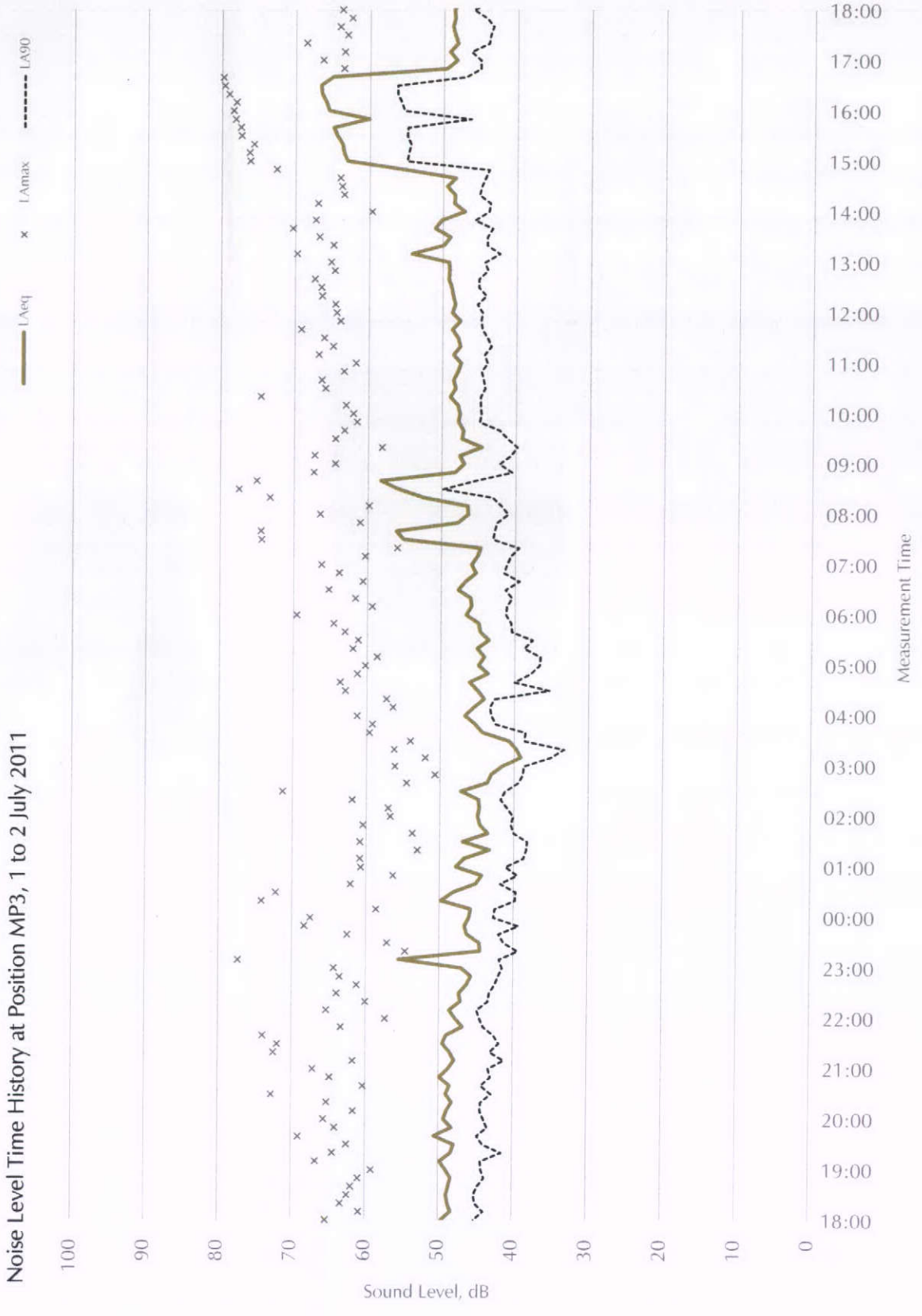


Figure 11/1800/TH04



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, 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 LAn 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 dBL_{An} are sometimes written using the alternative expression dB(A)Ln.

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).