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ROCK MUSIC AT MAINE ROAD, MANCHESTER - A NOISE TOLERANT ZONE ?

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1. INTRODUCTION.

The Maine Road stadium - home of Manchester City F.C. is situated in a predominantly residential area comprising terraced houses of traditional construction. The housing density is high. The only other buildings near the stadium are the Manchester City F.C. Social Club, 2 schools, a light industrial unit and a number of small shops.

The streets closest to the stadium are not heavily trafficked, consequently background noise levels are relatively low especially during the evening period.

2. THE PLANNING APPLICATION.

2.1. In 1986 the football club approached the City Council with a proposal that a one day pop music event starring Queen and Status Quo should be held at the site. The officers of the Planning Department were of the opinion that such an event was a significant change of use and therefore planning consent was required. It was recognised that the potential impact on the area in terms of noise, traffic generation, parking, litter etc. was likely to be greater than that associated with football matches therefore the Planning Department consulted residents over a wider area than normal. A total of 2000 households were consulted directly. In addition to this the proposals resulted in considerable publicity in the local press.

Objections to the planning application were received from 26 persons at 22 addresses. The event was supported by other residents, local councillors and leaders of some local community groups.

2.2. The Environmental Health Department made an assessment of the effects of the proposed event on the amenity of the residents. No open-air concerts of this magnitude had been staged in Manchester before therefore contact was made with other local authorities which had experience of this type of event, notably Newcastle, Leeds and the Greater London Council (G.L.C.).

Data was available from a Queen / Status Quo concert held in London (ref.1) together with some data on possible attenuation figures for football stadium structures. It was predicted that the likely noise level at the nearest houses to the Maine Road stadium would be around 70 dB(A) Leq (15 minute). Background levels were estimated to be 45-50 dB(A) Leq (15 minute). Measured data was not available in the short time-scale before the planning committee deadline date.

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2.3. The only published guidelines at the time were those produced by the G.L.C. (ref.4). These suggested that at venues having 3 concerts per annum or less the Leq (15 minute) outside occupied premises during the concert should not exceed the Leq (15 minute) during a comparable period when no concert was in progress by more than 10 dB(A) between 0700 and 2000 or 6 dB(A) between 2000 and 2300. Between 2300 and 0700 no sound should be audible inside the premises.

The predicted data for the proposed concert suggested an increase on background of not less 20 dB(A). Such increases had led to considerable levels of complaint at other venues. In view of this the Director of Environmental Health recommended that the application be refused.

2.4. At the planning committee meeting a variety of views were expressed. There was a considerable body of opinion that although some disamenity was likely the positive benefits to the Manchester area were greater. Planning consent was therefore granted with control conditions. The exact wording of the noise control condition was to be drawn up by the City Planning Officer in consultation with the Director of Environmental Health.

2.5. It was the Planning Officer's view that satisfactory noise control could be achieved by setting a maximum noise level at a specified location. The Environmental Health Officers (E.H.O.s) would not accept this approach. How could a realistic target level be set when the best available data suggested such a large exceedence of the G.L.C.'s guidelines? It appeared that significant levels of complaint were inevitable - all that could be done was to try to ensure that noise levels were kept as low as possible in the circumstances. Eventually the following condition was agreed:

"Arrangements shall be made to monitor noise levels emanating from the concert in agreement with, and to the satisfaction of, the City Council. The public address and amplifier system shall be set to the lowest practicable level to ensure minimum disturbance outside the ground".

2.6. Discussions were then held between the E.H.O.s and the promoter to draw up a noise monitoring schedule. The following was agreed:

a) Role of noise consultant.

- i) to liaise with sound engineers to locate speakers in such a way as to minimise transmission outside the stadium,
- ii) to monitor sound checks,
- iii) to monitor at the mixer tower throughout the event,
- iv) to advise the sound engineers of sound levels and keep a log of action taken to reduce levels to a practicable minimum,
- v) to obtain a series of sample measurements at various locations outside the stadium.

b) Role of the E.H.O.s.

- i) to obtain continuous data at 3 fixed locations outside the stadium,
- ii) to obtain a series of sample measurements at various locations outside the stadium (different to (iv) above).

All data to be made available to both parties after the event.

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2.7. The E.H.O.s obtained background level data for a typical evening during which no activity was taking place in the stadium. The arithmetic mean of L_{90} samples was 43.8 dB(A) from 1600-2000 and 41.3 dB(A) from 2000-2200. L_{eq} data for the same periods was 55.8 dB(A) and 51.5 dB(A).

This data confirmed the estimates made during the assessment of the planning application.

3. ENTERTAINMENT LICENCE APPLICATION.

The recommendation of the Director of Environmental Health was repeated i.e. that the event should not be permitted because of the serious risk that widespread disturbance would occur. The Committee approved the application and endorsed the noise control conditions attached to the planning consent.

4. THE 1986 CONCERT.

4.1. At the mixer tower 1 minute L_{eq} data was obtained to enable engineers to be advised of trends in noise levels. On 8 occasions it was felt necessary to ask for reductions in levels.

A continuous level recorder trace was also produced.

15 minute L_{eq} s ranged from 80.7 to 91.1 dB(A) with no live music, 97.3 to 100.5 dB(A) during Status Quo and 98.9 to 103.5 dB(A) during Queen.

4.2. Outside the stadium spot checks, in the form of 5 minute L_{eq} s, were made at a total of 14 locations at distances of up to 790 metres from the stage.

From this data it can be estimated that most of the housing within 600 metres of the front of stage was exposed to increases in background noise level in excess of 10 dB(A) and within 700 metres to increases in excess of 6 dB(A).

4.3. Data from the 3 fixed monitoring sites.

4.3.1. Thornton Road, microphone 1 metre outside first floor bedroom, approximately 70 metres behind the stage.

Highest value 81.1 dB(A). Increase on background level 22.7 dB(A).

4.3.2. Beveridge Road, microphone 1 metre outside first floor bedroom, approximately 215 metres from stage, shielded by main (western) stand.

Highest value 76.2 dB(A). Increase on background 17.8 dB(A).

4.3.3. Carlton Avenue, microphone 1 metre inside first floor bedroom (to prevent potential damage from persons sitting on out-building roofs), window open, approximately 200 metres from stage, direct line of sight through gap between stands.

Highest value 89.6 dB(A). Equivalent to 99.6 dB(A) outside.

Increase on background 41.2 dB(A).

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4.4. Subjective assessments were made over a considerable distance from the stadium. Music was audible and subjectively loud at least 2 kilometres north of the site. At 1.1 kilometres words of songs were clearly audible, music was clear and undistorted and described as "hifi quality".

4.5. Only 6 complaints were received by the local authority in the weeks following the event (although a few more "comments" were made at a meeting of the local consultative committee). 5 of the 6 referred to excessive noise.

5. SURVEY OF LOCAL OPINION.

5.1. Attempts were made to explain the unexpectedly low level of complaint. The Council had not arranged for a telephone hot-line for complaints and it was thought that this may have resulted in an unduly rosy picture of the situation. Perhaps people who were disturbed by noise during the event were not sufficiently motivated to telephone their complaints during the following days? Local councillors had clearly supported the event - it may have been thought that there was no point in registering a complaint if it would not lead to meaningful action to prevent a recurrence?

5.2. In an attempt to seek more information the E.H.O.s decided to carry out a small-scale postal survey. A questionnaire and pre-paid reply envelopes were sent to 200 households chosen at random from the 2000 canvassed by the Planning Department. The response rate was 50 %. A summary of the results was presented to the appropriate committee in Jan.1987 (ref.5).

98 % of respondents were at home during the concert.

79 % heard "noise from the concert".

17 % judged the event to be "quiet" or "very quiet".

53 % "moderate".

25 % "noisy" or "very noisy".

80 % were "not annoyed at all".

4 % were "moderately annoyed".

4 % were "very annoyed".

85 % felt that the finish time of the event (10.00 p.m.) was "satisfactory".

6. CONCLUSIONS FROM 1986 EVENT.

6.1. The predictions made by E.H.O.s of likely noise levels were reasonably accurate (see 2.3. above) in spite of the number of assumptions which had to be made due to the absence of hard data for the site. Levels closest to the stadium (Carlton Avenue area) were even higher than predicted with increases in background of between 22.4 and 41.2 dB(A) during the concert.

6.2. The expected adverse public response did not occur. The survey indicated a high degree of antipathesis with the event. The guidance of the G.L.C. code had failed to predict the public response at this venue. The local population appeared to be more tolerant of noise than people elsewhere.

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6.3. The monitoring carried out at the mixer tower resulted in the conclusion that it was now possible to specify an appropriate target noise level which represented "the lowest practicable level" for the amplification system (as per the planning condition. See 2.5.) If future events were to take place a target of 101 dB(A) Leq (5 minute) at the mixer would be recommended.

7. EVENTS SINCE 1986.

7.1. Concerts have taken place every year except 1989 with a maximum of 5 in any one year. The current planning consent allows for concerts on a maximum of 4 days per annum.

7.2. 14 events have taken place which have been subjected to a maximum noise level of 101 dB(A) Leq (5 minute) at the mixer tower. This control condition has been imposed as part of the Entertainment Licence.

7.3. Bands involved have included Pink Floyd, Rolling Stones, Simple Minds, Dire Straits and Guns N Roses. Sound engineers have found the target level achievable but tough. Most concerts have involved minor exceedences of the target level but it has been considered that the infringements have not been sufficient to warrant action for breach of condition. It should be noted that the target level is a 5 minute Leq (this was chosen deliberately to permit a high degree of control by the local authority). This time period tends to penalise bands who play long numbers with short breaks between them. It is possible that in future consideration may be given to changing the target a 15 minute Leq.

7.4. The level of complaint has remained low (a "handful" per annum). In 1991 a repeat of the 1986 survey was carried out (with a slightly modified questionnaire). (Ref.6).

This time the response rate was 40 %
56 % were not annoyed by any of the concerts.
14 % were annoyed "a lot".
25 % were annoyed "a little".

Of those expressing any annoyance 16 % referred to noise, 25 % to litter and 25 % to car parking problems.

Although the overall level of annoyance has increased slightly there appears to be no indication that this is due to noise.

8. THE FUTURE.

8.1. The H.S.C / Home Office draft guidance on health, safety etc. at pop concerts (ref.7) includes recommendations as to the maximum levels of noise to be emitted from such events.

Section 470 suggests that a venue having 2 to 12 concerts per annum the event noise level (E.N.L.) i.e. Leq (15 minute) at the facade of any noise sensitive location should not exceed the background level by more than 25 dB(A). In addition the maximum E.N.L. should not exceed 75 dB(A).

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8.2. A study of the data collected at Maine Road shows that the venue cannot meet this revised standard. Noise levels inside the worst affected houses exceed the maximum E.N.L. level to be achieved outside by about 15 dB(A). Even the houses behind the speakers are subject to levels about 6 dB(A) above the suggested maximum E.N.L.

8.3. The H.S.C / Home Office document refers in sections 468 and 469 to the subjective aspects of community response to noise. It appears, from the experience gained in Manchester that such factors may be of prime importance at some venues.

9. A "NOISE TOLERANT ZONE" ?

9.1. Why are the residents of the area close to the Maine Road stadium satisfied with noise levels which would cause numerous complaints elsewhere ?

It is suggested that a wide variety of factors are involved - many of these are likely to be of a highly subjective nature.

9.2. The area has a high unemployment rate especially among young people and has witnessed a rise in all the indices now associated with inner-city deprivation. During monitoring outside the stadium it was clear that many people were thoroughly enjoying a free concert. During some events a carnival atmosphere prevailed. It was also evident that the events bring positive financial benefits to some residents by virtue of a wide range of activities including the provision of catering facilities, "alternative" concert merchandise and in some cases temporary seating arrangements on the roofs of outbuildings etc.

Many residents are strong supporters of Manchester City Football Club and may therefore welcome any events likely to help the club's finances.

To fully understand this unpredicted noise tolerance would require complex studies beyond the resources of the Environmental Health Department.

10. CONCLUSIONS.

10.1. When the first concert was proposed in 1986 the best advice available was used to predict likely noise levels and the public response.

Although the noise level prediction worked reasonably well the prediction of public response was a total failure.

10.2. Recently proposed guidelines would also fail to predict the public response at this venue.

10.3. The Entertainment Licence condition which sets the maximum level at the mixer of 101 dB(A) Leq (5 minute) is achievable by most bands most of the time. This standard provides the best practicable level of control at this site.

10.4. The procedures used by City Council officers do not at this stage require significant revision. A review would only become necessary if, for some reason, the level of complaint increased substantially.

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10.5. Extreme caution should be used when using guidelines for musical events. Subjective factors and local circumstances are very important.

10.6. There is a need for more research.

11. REFERENCES.

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