

18 Lower Byrom Steet,
Manchester M3 4AP

Noise Management and Mitigation

Table of Contents

OVERVIEW	3
CONTEXT	3
THE ATTRACTION	3
THE LOCATION	3
NOISE SOURCES AND MITIGATION	4
ENTERTAINMENT NOISE	4
ACOUSTIC DESIGN	4
AUDIO LIMITERS	4
STRUCTURAL ATTENUATION	5
PATRON AND EGRESS NOISE	5
VEHICLES	6
COMMUNITY ENGAGEMENT	6
NOISE STANDARDS AND GUIDANCE	6
CONCLUSION	8

Overview

This Noise Management and Mitigation Report has been prepared by The Ents Inc with respect to Chaos Karts; a proposed leisure concept located at Old Granada Studios within the local authority of Manchester City Council.

This report may be used to understand the likely impacts of additional noise arising from the development on the local residents and businesses, and the policies and procedures in place to mitigate any disturbance.

Context

The Attraction

The intentions for the building are to run the leisure activity for the duration of the three year tenancy by accommodating an indoor entertainment/sporting activity along the theme of self-driven electric vehicles in a fantasy setting reminiscent of a computer/video game. The concept is intended to be attractive for age groups of 8 years or more, in a family-oriented setting.

The proposed opening hours will be 9am to 11:00pm Monday to Sunday.

The attraction will only support up to 24 people an hour, with the occasional corporate booking of up to 64 people in one session. The arrival and departure time of each group is controlled on site as tickets are prebooked. Thus the expected volume of customers will be low. Departing groups will be up to a maximum of 8 people in the evening and such departure will be supervised by the staff.

The Location

The application site is one of the studios on the Old Granada Studios lot on Lower Byrom Street. The surrounding area is characterised by a mix of commercial and residential land.

The predominant background noise sources, as expected, are those of road traffic.

The noise levels generated by the road traffic are significantly higher than any that might be generated at the site and accordingly it is not anticipated that there will be any impact from activities on the site.

Noise Sources and Mitigation

Entertainment Noise

Sound is a fundamental component in the immersive experience that is to be delivered and a part of the gaming element to the attraction, which includes both music and sound effects. These have been commissioned by TEI as part of the original development, and as such the operators have full control over their playback.

The sound generated is however controlled and restricted. Each kart has in-built speakers that are located within 12" of the players ears. This is a hyper-localised system that ensures each driver only hears the sound effects that is relevant to their individual experience. This design also has the benefit that the sound levels can be relatively low and are inaudible by the other players. Certainly these sound effects will not be audible outside of the main structure.

There is a small PA system installed in the ceiling of the structure facing down onto the track. This provides a low-level music soundtrack to be played that can be heard by all the players as they partake in the experience. There is also a microphone connected to this system so that the Track Operator can communicate with all the players if required.

Control of this system is exercised through design, sound limiters and attenuation.

Acoustic Design

The acoustic design of the PA is such that the speakers are facing directly down with sound projected in that direction. This has the benefit of minimising sound energy that is required to be generated and also the amount leaving the structure through the side walls. As the sound is directed downwards and any reflected sound is much attenuated though the travel distance, the reflection and the subsequent attenuation of the walls prevents noise generation outside of the site.

Audio Limiters

All audio on site will be passed through a professional digital mixing desk. This has the functionality to set a limit on the output levels using compressors and limiters so the that the entertainment noise level across the venue can be accurately controlled. Currently the audio levels have been set to approximately 75dBA within the tent. Assuming free-field conditions, this would be likely to result in a level that is not clearly audible at any adjacent noise-sensitive premises. The situation is even further improved by the structural attenuation.

Structural Attenuation

The structure itself is film and TV studio with integrated acoustic insulation and therefore the very fabric of the building has significant noise attenuating properties. In addition, heavy cloth lining internally on each wall to further absorb sound energy.

No loudspeakers will be affixed outside of the building.

If it were assumed that there were no attenuation afforded at all by the structure, a level of 75dB from the sound system would result in an attenuation over distance to the nearest residential property to achieve a façade level at approximately 35dB(A). This level is well below the background during the evening which is understood to be in the region of 38-42 dBA(L90), depending on measurement location.

Assuming that, in accordance with common acceptance, an open window achieves a further 10-13 dB attenuation, it will be understood that sound from the system will be well below the background levels for the area and will not be discernible within any residence.

The reality is that the structure of the building will further attenuate the sound because of its mass and construction, resulting in a situation where it is highly unlikely that there will be any auditory perception of what is happening inside even if monitored immediately outside of the building. Given the previous use of the building, which was constructed for a studio use and therefore intended to be resistant to incoming sound levels, it is considered that a full noise assessment of the proposals is not required.

Patron and Egress Noise

The operating model of the attraction ensures that no large queues of customers will be present in the attraction during normal operating hours. Each group of 8 will leave the site every 30 mins, with the last group leaving before 11:00pm.

Our operational team on site will request all customers to leave quietly and respectfully of the local residents. Our expected customer profile suggests that these small groups will consist of friends and families, and we are not anticipating any unruly or disruptive behaviour. The booking system will prevent queuing outside of the building.

Access to the venue will not be available from Lower Byrom Street and patrons will be actively discouraged through advertising on the attraction's website and booking process from arriving by private vehicle, so as to prevent vehicles from stopping and unloading on Lower Byrom Street.

Vehicles

There is no parking on site for customers and our Transport Statement describes how the attraction will not increase traffic in the area, or impact on parking. We encourage all visitors to use public transport, walk or cycle to reach the site.

Delivery and Service vehicles will be scheduled to arrive between 9am and 5pm weekdays.

Community Engagement

During the build phase of the development a letter drop will be undertaken to all local residents and businesses within the nearest streets. The invitation will be offered to residents to see the concept and discuss any concerns or questions they may have. During these sessions the audio track will be played at the levels proposed to ensure the residents are happy with the low levels.

Prior to this, it had been established that there had been some concern amongst the residents that the site was used for Coronation Street tours with guests queueing outside and car parking on the street. It has been explained in both our application and the Transport Statement that there will be no outside queueing and that customers will be strongly dissuaded from parking on the street.

Noise Standards and Guidance

There are no current standards that are directly applicable to a venue of this type, but guidance can be found in a number of documents which are geared towards the leisure and entertainment industry.

Institute of Acoustics – Good Practice Guide “Control of Noise from Pubs and Clubs 2003”

Even though the site is not to be used for a licensable activity such as the sale of alcohol, this guide provides some advice in relation to music and associated sound, with 2.4 setting out that;

“sources should not be audible inside noise-sensitive property at any time. In the absence of the objective criteria, what is 'regular' should be determined on a local basis to reflect local expectations and should be incorporated by local authorities in their planning and enforcement policies and ; for premises where entertainment takes place less frequently, music and associated sources should not be audible inside noise-sensitive property between 23:00 and 07:00 hours. For other times, appropriate criteria need to be

developed which balance the rights of those seeking and providing entertainment, with those who may be disturbed by the noise.”

It is the case that the site can achieve these guidelines. In the first instance, the site will not operate music within the 23:00—7:00 time frame and secondly, the inaudibility appears to be capable at an earlier time of the day, which is well below the threshold set at the more sensitive time from 23:00.

Criteria and Measurement Guidelines. John Hinton and Alistair Somerville. IOA Acoustics Bulletin Nov/Dec 2003

Again aimed at primarily musical entertainment, this publication gave some useful parameters for entertainment noise (“EN”);

Entertainment times per year less than 30	LAeq,15mins (EN) should not exceed LA90 (WEN) by more than 5dB	EN will generally be audible but not overly obtrusive inside noise sensitive property
Entertainment times per year more than 30	LAeq (EN) should not exceed LA90 (WEN) by more than 5dB and the L10 (EN) should not exceed the L90 (WEN) by more than 5dB in any 1/3 octave band between 40Hz and 160Hz	EN will generally be audible but not overly obtrusive inside noise sensitive property
Entertainment once a week or continues beyond 23.00	LAeq (EN) should not exceed LA90 (WEN) and the L10 (EN) should not exceed the L90 (WEN) in any 1/3 octave band between 40Hz and 160Hz	EN will be virtually inaudible inside noise sensitive property

Again, this guidance is capable of being met at the site. Sound from the site will be inaudible within any noise sensitive property.

BS4142 : “Method For Rating And Assessing Industrial And Commercial Sound” is a standard that can be used for measuring sound in industrial and commercial environments and has in the past been a source of guidance but is largely replaced in respect of noise generated by entertainment activities. It has however been used to give an indication of when ‘adverse effects’ are likely to be observed, comparing the measured sound level against the background level (at part 11);

- A difference of around +10 dB or more is likely to be an indication of a significant adverse impact, depending on the context.
- A difference of around +5 dB is likely to be an indication of an adverse impact, depending on the context.

In this instance, it is considered that the sound levels generated by the activity will not even meet the second of the two. With an estimation that the sound level from any music or plant will be around 7 dB below the background (ie -7dB, rather than +5 or +10 dB) as measured at the façade of the nearest residential property, it is therefore difficult to substantiate that a problem will arise through sound transmission from the site.

The NPPF provides that noise can be a material planning consideration and aims that planning decisions should ;

- A. Avoid noise from giving rise to significant adverse impacts on health and quality of life as a result of new development;
- B. Mitigate and reduce to a minimum other adverse impacts on health and quality of life arising from noise from new development, including through the use of conditions;
- B. Recognise that development will often create some noise and existing businesses wanting to develop in continuance of their business should not have unreasonable restrictions put on them because of changes in nearby land uses since they were established; and
- C. Identify and protect areas of tranquillity which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason.

In this instance, the limited noise sources, the structural arrangements for the existing building, the transport management and operational procedures will ensure that these objectives are met. There are no noise sources that are likely to cause any significant adverse effect and those sources that exist can be controlled.

In the previous location, despite being within a temporary structure that incorporated little sound insulation but was near to residential property, there were not issues of noise from the carts causing disturbance.

Conclusion

With the noise management and mitigation measures in place it is believed any noise resulting from the development will have no material impact on the surrounding area. This is supported by the completion of extensive testing at the levels that will be used during operations.

Referring to The Noise Policy Statement for England¹ the development is unlikely to even *“slightly affect the acoustic character of an area”* and certainly *“not to the extent there is a change in quality of life.”* Given the analysis conducted, it appears that *“no specific measures are required to manage the acoustic environment.”* It is suggested that the development is accordingly acceptable in noise terms.

It is therefore considered that noise from the site is not likely to be an issue of concern and during the testing phases that have already been conducted, this belief appears to be substantiated by the auditory monitoring that has been conducted.

¹https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/69533/pb13750-noise-policy.pdf