PA Noise Assessment at Salford City Stadium

Background
Salford City Stadium, the new home of Salford City Reds rugby league club, is located in Barton, Eccles, close to the M60 and City Airport. Miller Goodall had been advising Salford City Council on noise and air quality issues relating to the planning application for the new stadium and, as the stadium approached its official opening in February 2012, was appointed to help discharge a planning condition relating to noise from the PA system.

Action Taken
Before the condition could be discharged, it was necessary to determine if noise from the PA system was likely to result in significant disturbance to nearby residents. If so, the implementation of control measures would be necessary to minimise the potential disturbance.

The PA system consists of a control desk in the security office overlooking the stadium. A DJ at the desk has control over music being played, although he cannot significantly influence the sound level generated as this is dictated by the permanently installed equipment. A number of vertical line array speakers within the stadium are used to direct sound into the audience seating areas for general announcements, musical interludes, etc. A system of horn speakers is located external to the stadium, facing away from the facades, and is used only for emergencies such as voice evacuation and fire alarms.

Tate Security, who installed the stadium's PA system, provided Miller Goodall with detailed noise contours from computer software used to model the coverage of speakers within the stadium. This provided accurate predictions of PA noise levels within the stadium, but could not accurately assess the effect of noise on nearby residents to the north of the stadium. Miller Goodall decided that the best way to determine if PA noise was likely to cause disturbance was to actually measure it under normal operational scenarios.

Measurements were taken of a selection of 80s stadium rock (as chosen by the PA engineer!), played over the array speakers at 'normal' levels within the stadium, just outside the stadium, and at the rear of the nearest dwelling, approximately 300m to the north east of the stadium. Measurements were also taken externally to the stadium, with the voice evacuation system operating normally.

Summary of Findings
The internal stadium PA speakers were found to be highly directional, effectively directing noise from the PA into the seating areas of the stadium. Noise levels just outside the stadium were only slightly higher than noise levels in the absence of PA noise. Music was not audible even at the nearest houses, due to the masking effect of road traffic noise from the M60. It was concluded that music from the stadium PA system was unlikely to cause any significant disturbance to residents, even during the evening when noise from the M60 was likely to be lower.

The external horn speakers used for emergency evacuation alarms were found to do their job effectively, being highly audible in the vicinity of the stadium, but barely audible at the nearest dwelling.

In conclusion, Miller Goodall was satisfied that the PA and emergency voice evacuation system in their current specification did not present any significant risk of disturbance to nearby residents whilst in operation. It was, however, recommended that the voice evacuation system was only tested during daytime hours. With that proviso, it was concluded that the planning condition relating to PA noise could be formally discharged.

For more information, visit our website at www.millergoodall.co.uk. If you would like to discuss how we can help your project, please contact Miller Goodall on 01204 596166 or email info@millergoodall.co.uk