Road Traffic Noise A303

10.61 To reduce the effects of night-time increases in traffic noise from off-site development traffic for properties located alongside the A303 a scheme of noise barriers was considered for the Extant Permission. The same approach has been adopted for this application and an appropriate obligation will be agreed with TVBC to implement a scheme of noise barriers alongside the A303 will be implemented as shown on **Figure 10.2**. The location of the proposed noise barriers alongside the A303 are detailed in **Figure 10.2**.

10.62 The predicted noise levels for the year of completion of the Proposed Development, 2013 both with and without the Proposed Development and with the scheme of noise barriers is shown in **Table 10.12**.

Table 10.12: Predicted Traffic Noise Levels with and without scheme of noise Barriers

Receptor	No Development 2013		With Development 2013		With Development and Barriers 2013		With Development & Revised Barrier Comparison with Existing	
	Day	Night	Day	Night	Day	Night	Day	Night
	LA10,18 hr	LA10,6 hr	LA10,18 hr	LA10,6 hr	LA10, 18 hr	LA10,6 hr	Difference	
A2	66.5	52.8	67.1	54.1	63.2	50.6	-3.2	-2.3
A5	65.3	52.0	66.0	53.3	63.9	51.4	-1.4	-0.6
B2	66.9	53.7	67.4	54.9	66.4	53.8	-0.5	0.1
B6	64.1	50.5	64.9	51.7	63.8	50.9	-0.3	0.4
B9	69.8	56.7	70.4	58.0	68.4	56.0	-1.4	-0.7
B15	67.4	54.3	67.9	55.7	66.3	54.0	-1.1	-0.3
B19	66.6	53.6	67.2	55.0	65.3	53.0	-1.3	-0.6
C1	69.1	56.0	69.6	57.4	66.9	54.6	-2.2	-1.4
C2	68.5	55.5	69.1	56.8	65.4	53.0	-3.2	-2.4
C4	63.7	50.5	64.3	51.8	61.5	49.0	-2.2	-1.5
C3	66.5	53.4	67.0	54.6	63.7	51.3	-2.8	-2.1
D1	68.8	55.7	69.2	57.0	67.4	55.2	-1.3	-0.5
D3	72.1	59.0	72.5	60.3	70.6	58.5	-1.4	-0.6
D5	70.7	57.7	71.2	59.0	68.9	56.8	-1.8	-0.9
D6	69.2	56.2	69.7	57.6	68.5	56.4	-0.7	0.2
D7	69.8	56.8	70.3	58.1	68.9	56.7	-0.9	-0.1
D8	69.7	56.6	70.1	57.9	68.8	56.6	-0.9	0.0
D9	70.8	57.8	71.3	59.1	69.9	57.8	-0.9	0.0
E1	72.5	59.5	72.9	60.7	69.2	56.9	-3.3	-2.5
E4	73.2	60.2	73.7	61.5	70.6	58.4	-2.6	-1.8
E7	73.8	60.8	74.3	62.0	70.9	58.7	-2.9	-2.2
E9	71.3	58.3	71.8	59.5	67.3	55.0	-4.0	-3.3
E14	70.9	57.9	71.3	59.1	68.7	56.5	-2.2	-1.4
E15	71.7	58.7	72.1	59.9	68.7	56.5	-3.0	-2.2

Receptor	No Development 2013		With Development 2013		With Development and Barriers 2013		With Development & Revised Barrier Comparison with Existing	
	Day	Night	Day	Night	Day	Night	Day	Night
	LA10,18 hr	LA10,6 hr	LA10,18 hr	LA10,6 hr	LA10, 18 hr	LA10,6 hr	Difference	
F2	73.3	60.3	73.7	61.5	69.8	57.6	-3.5	-2.7
F4	69.9	56.9	70.4	58.2	67.1	54.9	-2.8	-2.0
F5	72.6	59.6	73.0	60.8	69.5	57.3	-3.1	-2.3
F6	70.9	57.9	71.4	59.1	65.9	53.7	-5.0	-4.3
F7	74.9	61.8	75.3	63.1	72.6	60.4	-2.2	-1.5
F8	74.3	61.3	74.8	62.5	71.6	59.3	-2.7	-1.9
F9	76.1	63.0	76.6	64.2	73.3	61.0	-2.8	-2.0
F10	74.0	61.0	74.5	62.2	70.0	57.7	-4.0	-3.2
F11	74.5	61.4	74.9	62.6	70.6	58.2	-3.9	-3.2
F12	68.0	54.9	68.5	56.1	67.0	54.6	-1.0	-0.3

10.63 The predicted noise levels in 2013 indicate that although the Proposed Development provides a 1 to 2 dB increase in traffic noise levels at properties alongside the A303 in the night-time period, the proposed acoustic barriers reduce the noise levels from 0 to 4 dB below the 2013 level with no development.

10.64 The predicted 'top floor' levels have been provided for each section of the A303 to the east of the roundabout that would serve the Proposed Development, where there are existing residential properties. The receptors at each section along the A303, where noise barriers have been considered have been labelled A to F and the barriers for each section are discussed below.

Figure 10.2 Section A

10.65 There is an existing 2m high acoustic barrier between the slip road to the A303 and the residential properties. This barrier is located on top of a bank adjacent to the slip road and therefore the effective height of the barrier is higher than the 2m fence. For a new barrier to be effective at this location an increase in the height of the existing barrier would be required. The noise model has considered that the height of this barrier would need to be increased from 2m to 4m and extended south.

Figure 10.2 Section B

10.66 The receptors in section B form part of the MOD accommodation. There is an existing 2m high acoustic barrier from the railway bridge up to receptor B9. At this location

there is a 2m high boundary fence (a visual inspection indicated that this appeared to be an ordinary timber fence with some small gaps) on top of a 1.5m high bank. In terms of the noise predictions for the existing situation, this fence has been assumed to be acoustically effective but in reality it would not perform as well as an acoustic barrier. It is recommended that in this location that the boundary fence is replaced with a 3m high acoustic barrier and the existing 2m high acoustic fence is increased to a height of 3m.

Figure 10.2 Section C

10.67 The topography of the land (steep embankment close to road edge) between the A303 and the residential properties indicates that the only effective location for a noise barrier is within 1m of the road. Furthermore, due to reflection effects an untreated timber barrier at this location would further increase the noise levels at the MOD site on the opposite side of the road. To minimise noise reflection effects a 2m high absorbent lined barrier has been considered (absorbent on the side facing the A303) within 1m of the edge of the A303. This minimises the reflection effects at the MOD properties and provides a noise reduction at area C in the day and night-time periods when comparing the levels with and without the Proposed Development.

Figure 10.2 Section D

10.68 At section D there is approximately 2 to 3m of flat ground between the A303 and a steep embankment with existing trees. Following discussions with the landscaping specialist is was considered that the optimum barrier location was around 4m from the A303 and about 0.5m down the embankment. This allows the existing trees to form part of the landscaping to reduce the visual effect of the barrier. With a barrier in this location it is recommended that a 2.5m high acoustic barrier be installed such that the top of the barrier is located 2m above the road height. The proposed acoustic barrier is predicted to provide a small reduction in the day and night-time noise effect at residential properties in area D with the Proposed Development when compared to situation with no development.

Figure 10.2 Section E

10.69 The first section of 2m high acoustic barrier in area E (from the roundabout) should replace the existing wire fence that runs approximately 5m from the edge of the A303. Where the local road serving the residential properties curves around (between receptors E7 to E9) there is a small bund (1 to 1.5 m high) and the most effective location to place an acoustic barrier would be on top of this small bund. The noise model assumes a 2m high barrier located on top of this curving bund. The barriers alongside area E are predicted to provide a 1 to 3 dB reduction in the night-time period at residential properties in area E with the Proposed Development when compared to situation with no development.

Figure 10.2 Section F

10.70 The noise model shows two sections of barrier alongside area F to reduce the noise effect of traffic on the A303. The first barrier runs across the bridge (investigations are required to determine whether permission would be granted for a barrier on the bridge) and is then located 3 to 4m from the nearside of the A303 to allow landscaping measures to be provided in front of the barrier. The noise model has considered the effect of a 2m high reflective barrier. It should be noted that there is already a 1.8m fence alongside receptor F9 and this is included in the noise model. The predicted noise levels for this section of barrier indicate a night-time noise reduction of 2 to 4 dB at residential properties between F6 to F8 with the Proposed Development when compared to situation with no development.

10.71 The A303 passes over Barlows Lane (west of area F) and at this location the residential properties are located around 4 to 5m below the A303. The ground height of the residential properties rises until the A303 is at approximately the same height as the residential properties at receptor F9 and continues to rise to the bridge over the A303 at the east of area F, where there is a large embankment from around 5m from the edge of the A303 to the end of the rear gardens on Conholt Road. The most effective location for the second noise barrier is along the rear boundaries of the residential properties from receptors F7 to F9. A barrier on the edge of the A303 at this location, allowing for a 4m landscaping zone, would not be acoustically effective due to the height of the residential properties above the A303 (sound from the far carriageway would pass directly over the barrier). The noise model has considered a 2m high acoustic barrier replacing the existing fences at the boundary of the residential properties overlooking the A303.

10.72 The predicted noise levels for this section of barrier indicate a night-time noise reduction of 1 to 3 dB at residential properties between F6 to F8 with the Proposed Development when compared to situation with no development. It should be noted that the construction of an acoustic barrier of the rear boundary of these properties will require the permission of the residents.

10.73 As shown in the end columns of **Table 10.12** the scheme of noise barriers proposed provides a reduction in the noise levels at the nearest receptors to the A303 when compared to the 2013 noise levels with no development in both the day and night-time periods. This indicates that with these barriers in place the Proposed Development provides a minor beneficial effect.