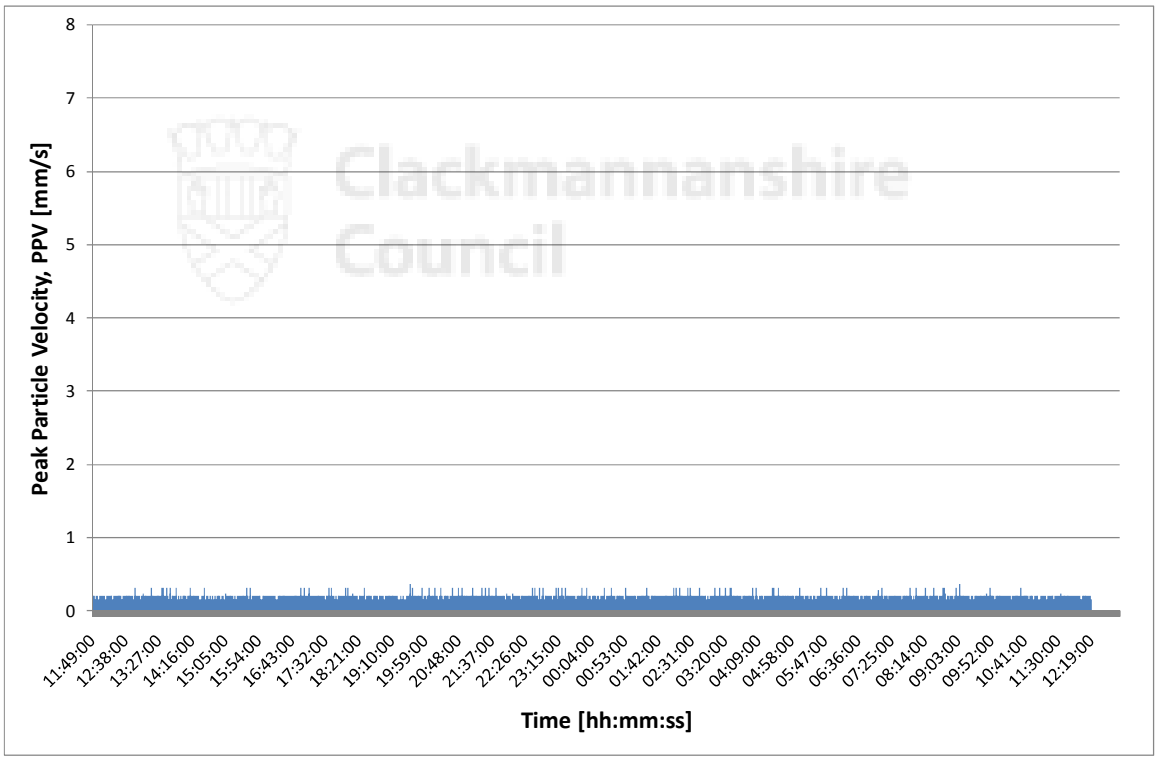
Figure 5.18: Photograph of Vibration Monitoring Equipment at 3 Northfield Gardens, Clackmannan

5.39 The weather conditions during the measurement period are believed to have been generally favourable for measurement – dry with very light winds and temperatures just above freezing.

5.40 Figure 5.19 shows the time history of the measured PPVs. A series of very low peaks can be observed, which are sometimes densely spaced. These are fluctuations in the instrumentation's noise floor.

Figure 5.19: Time History of 30 second PPVs Measured at 3 Northfield Gardens, Clackmannan



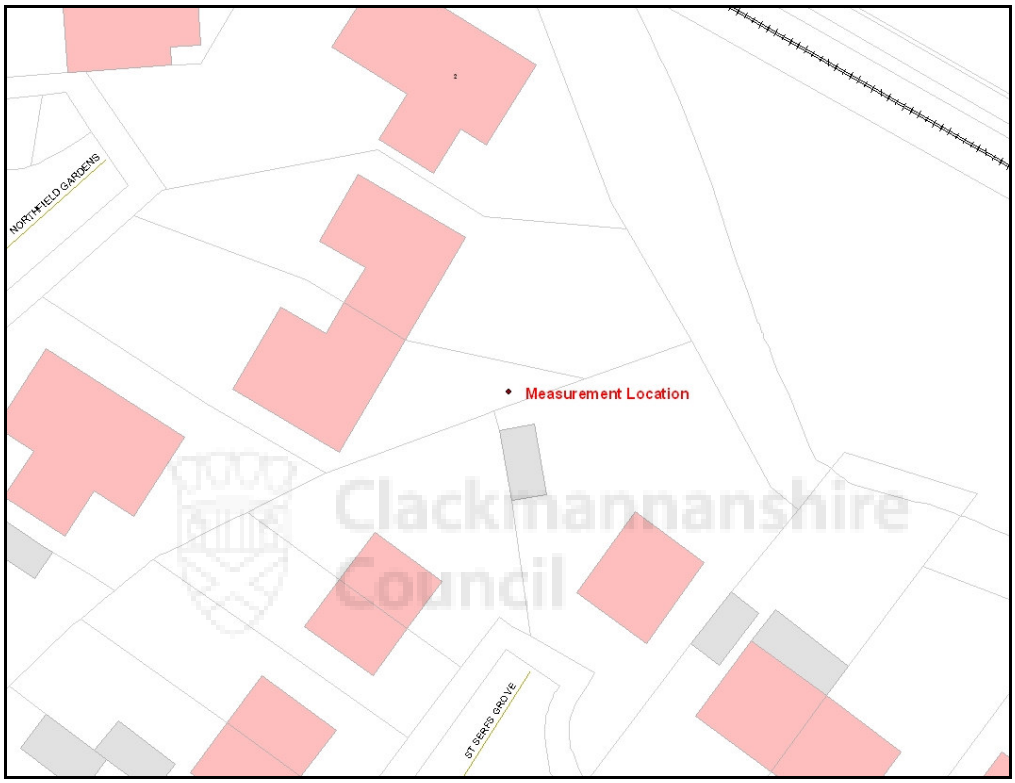
5.41 The highest measured PPV was 0.361 mm/s. This level occurred on various occasions throughout the measurement period. As it represents the system noise floor, it can be observed that vibration from trains did not exceed this level. As in other cases where vibration events could not be measured above system noise, it can be confidently predicted that rail vibration is highly unlikely to give rise to any adverse structural effects.

4 Northfield Gardens, Clackmannan, Clackmannanshire

5.42 Continuously logged measurements were made from 12:10 on 22 November 2010 until 12:23 on 23 November 2010.

5.43 Northfield Gardens is a cul-de-sac located off Brucefield Crescent. It can therefore be expected to carry very low volumes of traffic. The SAK railway line, which is elevated above the dwelling's garden by around 1 m, is likely to be the only significant source of environmental vibration. Figure 5.20 shows a plan of the measurement location in relation to the site.

Figure 5.20: Plan of Measurement Location at 4 Northfield Gardens, Clackmannan



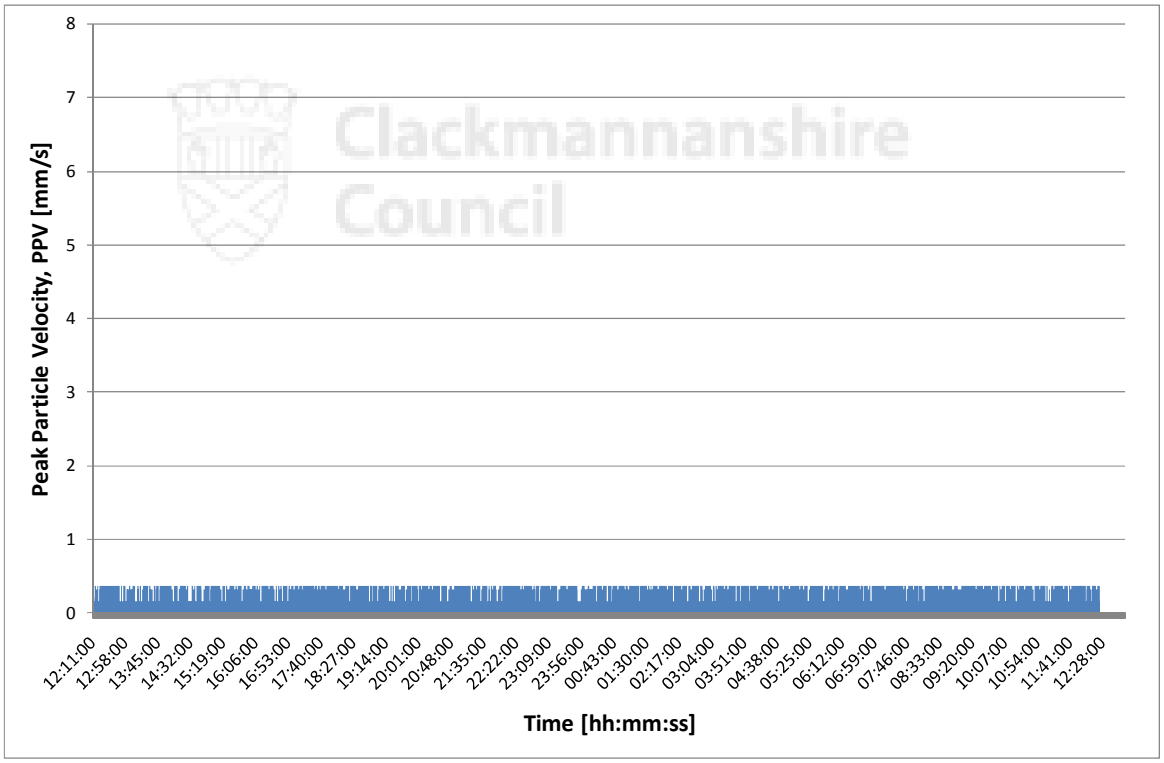
5.44 The measurement equipment was located approximately 37 m to the south of the nearside of the SAK railway track and approximately 10 m to the east of the facade of 4 Northfield Gardens. Figure 5.21 illustrates.

Figure 5.21: Photograph of Vibration Monitoring Equipment at 4 Northfield Gardens, Clackmannan

5.45 The weather conditions during the measurement period are believed to have been generally dry with very light winds. During the night-time period it is possible that there was a light ground frost..

5.46 Figure 5.22 shows the time history of the measured PPVs. It can be seen no environmental vibration levels exceeded the noise floor of the measurement system.

Figure 5.22: Time History of 30-Second PPVs Measured at 4 Northfield Gardens



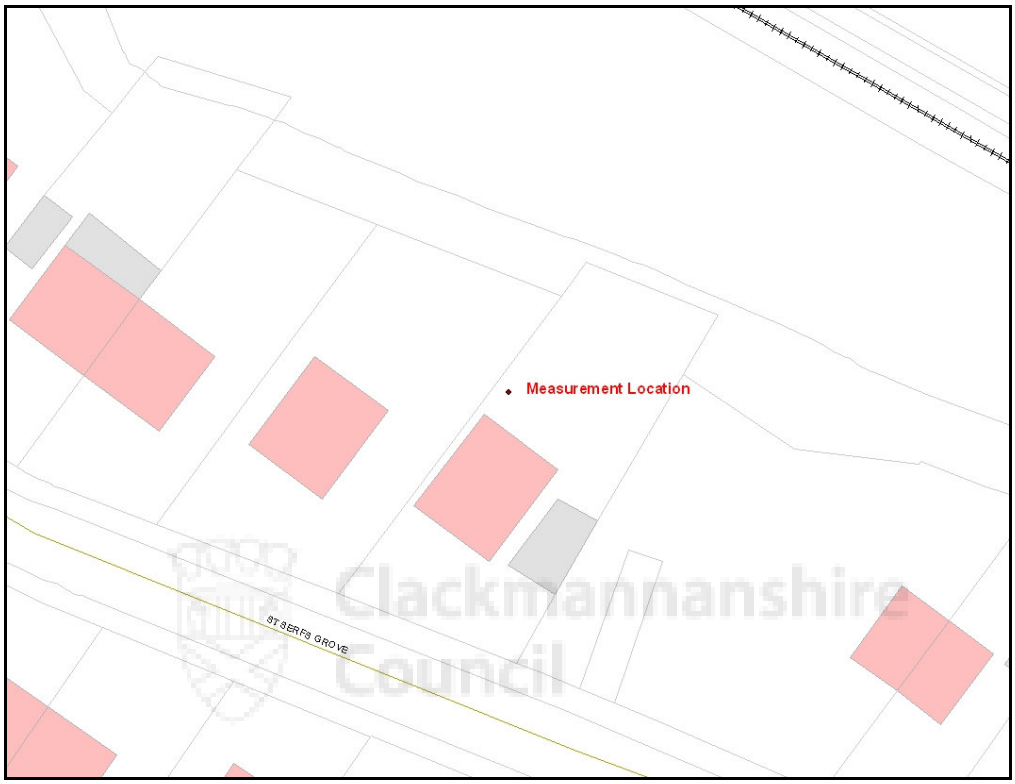
5.47 The highest measured PPV was 0.361 mm/s. This is indicative of the noise floor of the measurement system. It can be concluded that rail vibration will not have exceeded this value. The risk of any adverse effects on the structure of the dwelling is therefore extremely low.

27 St Serfs Grove, Clackmannan, Clackmannanshire

5.48 Continuously logged measurements were made from 15:09 on 19 November 2010 until 11:08 on 22 November 2010.

5.49 St Serfs Grove is the only road within the vicinity of the measurement location and is likely only to be used by vehicles accessing properties on St Serfs Grove. The SAK railway line, which is elevated above the dwelling's garden by around 1 m, is likely to be the only significant source of environmental vibration. Figure 5.23 shows a plan of the measurement location in relation to the site.

Figure 5.23 Plan of Measurement Location at 27 St Serfs Grove, Clackmannan



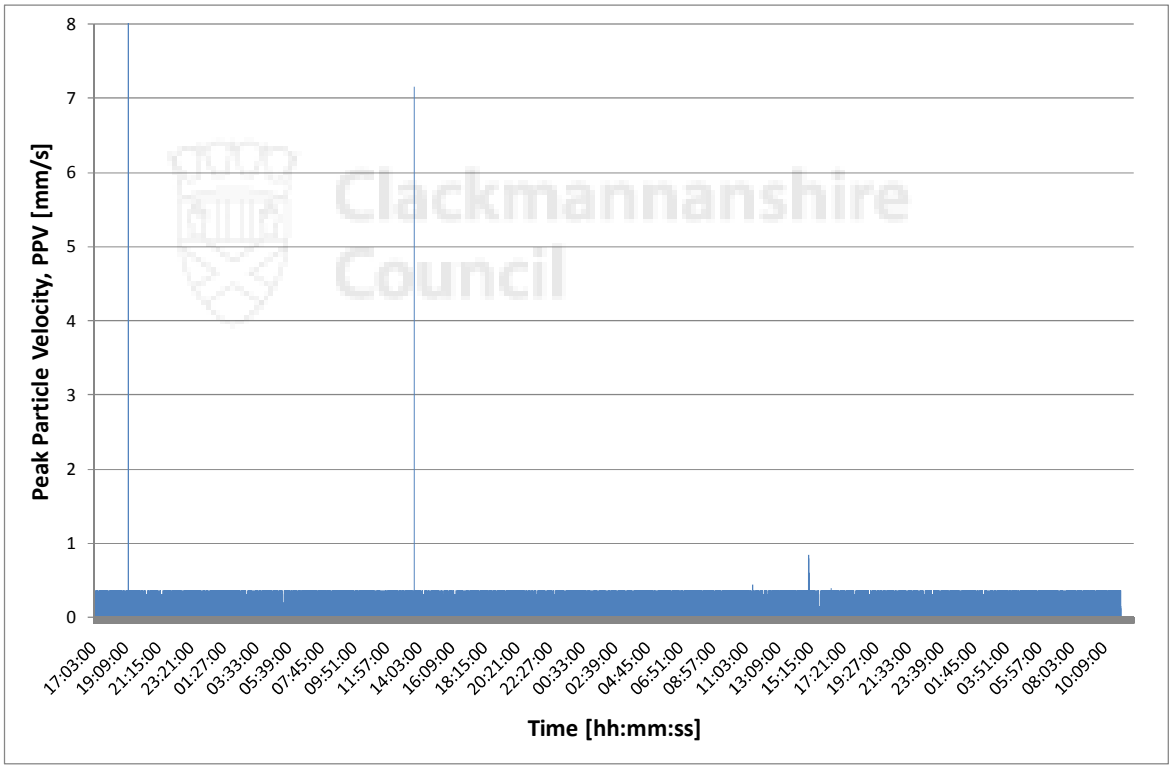
5.50 The measurement equipment was located approximately 37 m to the south of the nearside of the SAK railway track and approximately 3 m to the north of the facade of 27 St Serfs Grove. Figure 5.24 illustrates.

Figure 5.24: Photograph of Vibration Monitoring Equipment at 27 St Serfs Grove, Clackmannan

5.51 There are likely to have been intermittent periods of rain during the measurement period. Winds were quite strong on Friday, reducing to a fresh breeze on Monday.

5.52 Figure 5.25 shows the time history of the measured PPVs. The passage of trains would give rise to a series of regularly spaced peaks of roughly equal magnitude. Here, however, we see only three peaks of very variable magnitude. These are likely to be the result of events other than train pass-bys, such as disturbance by a resident, or a falling tree branch or similar. The latter is not unlikely given the strong winds early on.

Figure 5.25: Time History of 30 second PPVs Measured at 27 St Serfs Grove, Clackmannan



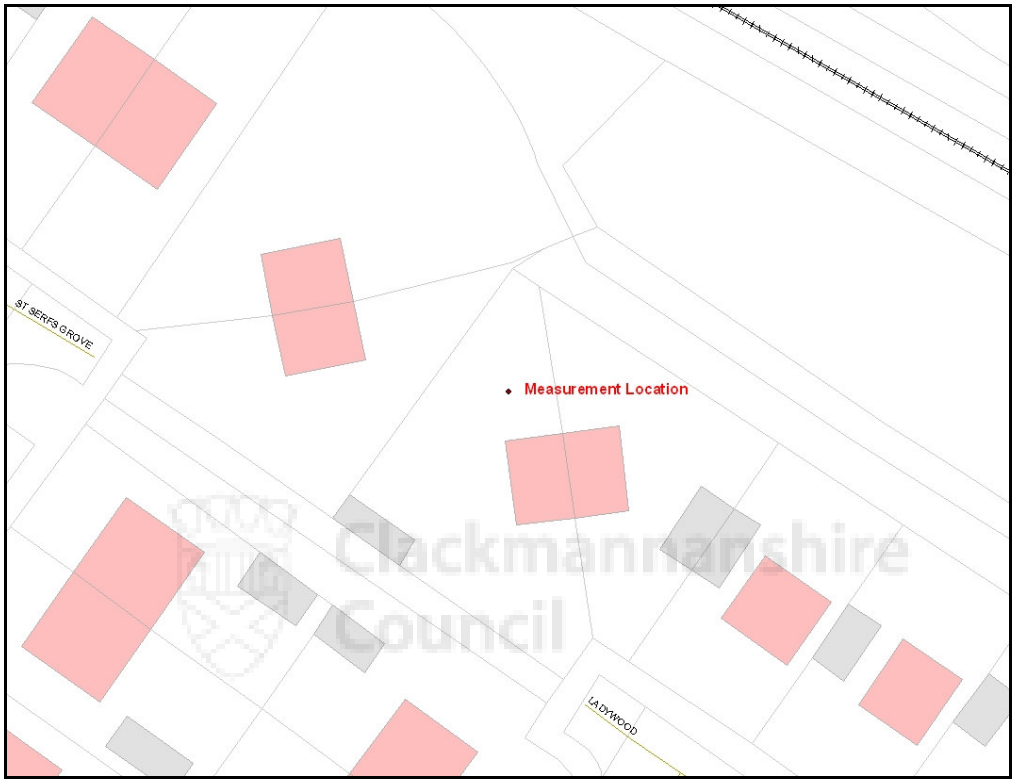
5.53 The highest measured PPV was in excess of 8 mm/s. This value is irrelevant for the aforementioned reasons. It is reasonable to conclude that rail vibration levels did not exceed the noise floor of the instrument, which is at around 0.3 mm/s. As this value is well below the criteria, it is highly unlikely that any structural damage, including cosmetic, would result from this level.

30 Ladywood, Clackmannan, Clackmannanshire

5.54 Continuously logged measurements were made from 13:06 on 23 November 2010 until 13:07 on 24 November 2010.

5.55 Ladywood is a cul-de-sac located off Alloa Road and is therefore unlikely to be heavily trafficked. The SAK line, which is likely to dominate the local vibration climate, is approximately 0.5-1 m above the ground height at the dwelling. Figure 5.26 illustrates the measurement location in relation to the surrounding area of the property.

Figure 5.26: Plan of Measurement Location at 30 Ladywood, Clackmannan



5.56 The measurement equipment was located approximately 36 m to the south of the nearside of the SAK railway track and approximately 4 m to the north-west of the facade of 30 Ladywood. Figure 5.27 illustrates.