

DUST MONITORING

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Dust Monitoring Proposals



Real time dust monitoring will be carried out in a location or locations to be agreed using proprietary electronic dust monitoring equipment. See illustration left. The unit will be fitted with a GMS mobile dust alarm which will indicate when levels of PM10 respirable/nuisance dust exceed RLH 80µg/m3 (two consecutive 15 minute averages); SBH 60µg/m3 (two consecutive 15 minute averages). Dust shall be tested for the presence of aspergillus or other germs by the client as required.

Real time dust monitor

'Frisbee' dust gauges may be used to supplement real time monitoring and measure dust levels giving a level per square meter an adhesive strip will indicate the direction from which the dusts have emanated. This will be supplemented by visual records of levels of dust created by our works. High dust levels will indicate a need to increase the water suppression of the dust. Analysis of the dust will be carried out on higher dust levels to determine whether the dust is due to demolition works.



Frisbee Dust Gauge

The samples will be sent off for analysis at 2 weekly intervals and the results plotted on a graph to identify any particularly dusty results. Checking of the direction and visual record will determine the likely cause of these elevated dust levels.

Typical dust level results are attached from TES Bretby. A sample form has been attached for visual observations of dust levels.

Dust levels to adjacent buildings will be mitigated by the erection of a fully sheeted scaffold to external elevations the scaffold to remain 1.5m minimum above the height of the demolished structure.

An acceptable level of dust shall ensure that the visible dust created will be confined to the immediate area or no more that 2m in any direction. Operatives working in the area should not be affected by any dust created. Appropriate dust masks should be issued and worn to any operative who asks for it or may be affected by dust created. Dust masks will be issued for comfort purposes. Dust created being suppressed by water from atomiser sprays fitted to hose pipes.

Water from hose pipes fitted with atomiser sprays will be utilised to suppress dust created at source from the demolition. Elements of the structure will be soaked before, during and after to reduce airborne dust levels. Stockpiled materials will be kept wet to prevent the wind picking up dust clouds. Demolition arisings will be thoroughly wetted before being chuted to ground level. Arisings will be further wetted as they are loaded away. All lorries' leaving site will have the arisings well wetted and covered.

Low sulphur and Sulphur free red diesel is to be used wherever possible.



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VIBRATION MONITORING

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Vibration Monitoring Proposals

Introduction

Throughout the proposed Demolition phase of works, ad hoc vibratory monitoring shall be carried out in order to ensure suitable control measures are in place to satisfy the effect of ongoing works to the immediate surrounding areas.

Equipment

Continuous vibration monitoring equipment consists of a Vibrock V901 Seismograph capable of recording <u>Peak Particle Vibration levels</u> (PPV) in three orthogonal axes (2 Horizontal and 1 vertical) over continuous 1 minute periods on a daily basis.

A two-stage audible alarm system can be installed to the seismograph, giving visual and audible warnings at pre-set trigger levels to suit the surrounding environment.

Vibration limits of occupied buildings have been identified as: -

- Health, residential or educational building
 1 mm/sec PPV
 - Commercial or industrial buildings
- 3 mm/sec PPV

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An external 12V supply will be attached giving lengthy power for a period of several months without replacement.

Reporting

The proposed equipment will be fully electronic and software supplied will make it compatible with laptop computers to download and distribute monitoring reports electronically.

An optional modem can be installed to provide remote reporting/monitoring from HSEL Head Office server.

Location of Seismograph(s)

Seismograph/s will be located as required on an ad hoc basis at foundation or lowest accessible structural level to determine the affect of our works on the surrounding buildings and ensure required vibration limits are not exceeded.

Trigger levels

Given that the local buildings surrounding the site area are all of relatively recent and sound construction, H Smith (Engineers) Ltd Technical Director is satisfied that a maximum trigger level of PPV 10mm/s is acceptable during the proposed site activities, and that a warning level of 8mm/s is set to advise immediate actions.



The expected trend is that site works produce an intermittent vibration mainly as a result of the pile probing works. If the warning level is breached occasionally, then the type of works and the location relative to the seismographs shall be reviewed and the possibility of amendments to the techniques shall be adopted.

This may take the form of reducing the frequency of the demolition chisel use to a more random frequency, or use of other similar techniques.

Where the warning level is breached regularly, or indeed the maximum trigger level breached occasionally, then alternative techniques may be adopted. This may take the form of severing large sections of concrete using the chisel and removing obstructions whole and pulverising them above ground rather than heavy breaking in the ground where vibrations are transmitted freely to adjacent structures.









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OVERMARKED PLAN SHOWING LOCATIONS FOR ENVIRONMENTAL MONITORING

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