



## **Technical Appendix 6.2 Dust Risk Assessment Methodology**



Table A6.2-1: Determining Dust Emission Magnitude

| Large                                                                                                                                                                                                                                                                                                                              | Medium                                                                                                                                                                                                                                                                      | Small                                                                                                                                                                                                                                                                                |
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| <b>Demolition</b>                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                      |
| <ul style="list-style-type: none"> <li>total building volume &gt;75,000 m<sup>3</sup></li> <li>potentially dusty construction material (e.g. concrete)</li> <li>on-site crushing and screening</li> <li>demolition activities &gt;12m above ground level</li> </ul>                                                                | <ul style="list-style-type: none"> <li>total building volume 12,000 m<sup>3</sup> – 75,000 m<sup>3</sup></li> <li>potentially dusty construction</li> <li>demolition activities 6-12m above ground level</li> <li></li> </ul>                                               | <ul style="list-style-type: none"> <li>total building volume &lt;12,000 m<sup>3</sup></li> <li>construction material with low potential for dust release (e.g. metal cladding or timber)</li> <li>demolition activities &lt;6m above ground</li> <li>during wetter months</li> </ul> |
| <b>Earthworks</b>                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                      |
| <ul style="list-style-type: none"> <li>total site area &gt;110,000m<sup>2</sup></li> <li>potentially dusty soil type (e.g. clay, which will be prone to suspension when dry due to small particle size)</li> <li>&gt;10 heavy earth moving vehicles active at any one time</li> <li>formation of bunds &gt;6m in height</li> </ul> | <ul style="list-style-type: none"> <li>total site area 18,000m<sup>2</sup> - 110,000m<sup>2</sup></li> <li>moderately dusty soil type (e.g. silt)</li> <li>5-10 heavy earth moving vehicles active at any one time</li> <li>formation of bunds 3m - 6m in height</li> </ul> | <ul style="list-style-type: none"> <li>total site area &lt;18,000m<sup>2</sup></li> <li>soil type with large grain size (e.g. sand)</li> <li>&lt;5 heavy earth moving vehicles active at any one time</li> <li>formation of bunds &lt;3m in height</li> </ul>                        |
| <b>Construction</b>                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                      |
| <ul style="list-style-type: none"> <li>total building volume &gt;75,000 m<sup>3</sup></li> <li>on-site concrete batching</li> <li>sandblasting</li> </ul>                                                                                                                                                                          | <ul style="list-style-type: none"> <li>total building volume 12,000 m<sup>3</sup> – 75,000 m<sup>3</sup></li> <li>potentially dusty construction material (e.g. concrete)</li> <li>on-site concrete batching</li> </ul>                                                     | <ul style="list-style-type: none"> <li>total building volume &lt;12,000 m<sup>3</sup></li> <li>construction material with low potential for dust release (e.g. metal cladding or timber)</li> </ul>                                                                                  |
| <b>Trackout</b>                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                      |
| <ul style="list-style-type: none"> <li>&gt;50 HGV (&gt;3.5t) movements in any one day</li> <li>potentially dusty surface material (e.g. high clay content)</li> <li>unpaved road length &gt;100m</li> </ul>                                                                                                                        | <ul style="list-style-type: none"> <li>20-50 HGV (&gt;3.5t) movements in any one day</li> <li>moderately dusty surface material (e.g. high clay content)</li> <li>unpaved road length 50m – 100m</li> </ul>                                                                 | <ul style="list-style-type: none"> <li>&lt;20 HGV (&gt;3.5t) movements in any one day</li> <li>surface material with low potential for dust release</li> <li>unpaved road length &lt;50m</li> </ul>                                                                                  |

Table A6.2-2: Determining Receptor Sensitivity

| High                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Medium                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Low                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Sensitivities of People to Dust Soiling Effects</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <ul style="list-style-type: none"> <li>Users can reasonably expect enjoyment of a high level of amenity; or</li> <li>The appearance, aesthetics or value of their property would be diminished by soiling; and the people or property would reasonably be expected to be present continuously, or at least regularly for extended periods, as part of the normal pattern of use of the land.</li> <li>Indicative examples include dwellings, museums and other culturally important collections, medium and long term car parks and car showrooms.</li> </ul> | <ul style="list-style-type: none"> <li>Users would expect to enjoy a reasonable level of amenity, but would not reasonably expect to enjoy the same level of amenity as in their home; or</li> <li>The appearance, aesthetics or value of their property could be diminished by soiling; or</li> <li>The people or property wouldn't reasonably be expected to be present here continuously or regularly for extended periods as part of the normal pattern of use of the land.</li> <li>Indicative examples include parks and places of work.</li> </ul>                        | <ul style="list-style-type: none"> <li>The enjoyment of amenity would not reasonably be expected; or</li> <li>Property would not reasonably be expected to be diminished in appearance, aesthetics or value by soiling; or</li> <li>There is transient exposure, where the people or property would reasonably be expected to be present only for limited periods of time as part of the normal pattern of use of the land.</li> <li>Indicative examples include playing fields, farmland</li> <li>(Unless commercially-sensitive horticultural), footpaths, short term car parks and roads.</li> </ul> |
| <b>Sensitivities of People to the Health Effects of PM<sub>10</sub></b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <ul style="list-style-type: none"> <li>Locations where members of the public are exposed over a time period relevant to the air quality objective for PM<sub>10</sub> (in the case of the 24-hour objectives, a relevant location would be one where individuals may be exposed for eight hours or more in a day).</li> <li>Indicative examples include residential properties, Hospitals, schools and residential care homes should also be considered as having equal sensitivity to residential areas for the purposes of this assessment.</li> </ul>      | <ul style="list-style-type: none"> <li>Locations where the people exposed are workers, and</li> <li>Exposure is over a time period relevant to the air quality objective for PM<sub>10</sub> (in the case of the 24-hour objectives,</li> <li>A relevant location would be one where individuals may be exposed for eight hours or more in a day).</li> <li>Indicative examples include office and shop workers, but will generally not include workers occupationally exposed to PM<sub>10</sub>, as protection is covered by Health and Safety at Work legislation.</li> </ul> | <ul style="list-style-type: none"> <li>Locations where human exposure is transient.</li> <li>Indicative examples include public footpaths, playing fields, parks and shopping streets.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Sensitivities of Receptors to Ecological Effects</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <ul style="list-style-type: none"> <li>Locations with an international or national designation and the designated features may be affected by dust soiling; or</li> <li>Locations where there is a community of a particularly dust sensitive species such as vascular species included in</li> </ul>                                                                                                                                                                                                                                                         | <ul style="list-style-type: none"> <li>Locations where there is a particularly important plant species, where its dust sensitivity is uncertain or unknown; or</li> <li>Locations with a national designation where the features may be affected by dust deposition.</li> </ul>                                                                                                                                                                                                                                                                                                  | <ul style="list-style-type: none"> <li>Locations with a local designation where the features may be affected by dust deposition.</li> <li>Indicative example is a local Nature Reserve with dust sensitive features.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                         |

| High                                                                                                                                                                                                                                                                                                                    | Medium                                                                                                                                             | Low |
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| <p>the Red Data List For Great Britain.</p> <ul style="list-style-type: none"> <li>Indicative examples include a Special Area of Conservation (SAC) designated for acid heathlands or a local site designated for lichens adjacent to the demolition of a large site containing concrete (alkali) buildings.</li> </ul> | <ul style="list-style-type: none"> <li>Indicative example is a Site of Special Scientific Interest (SSSI) with dust sensitive features.</li> </ul> |     |

## Determining sensitivity of the area

Table A6.2-3: Dust Soiling Effects on People and Property

| Receptor Sensitivity | Number of receptor | Distance from source (m) |        |        |      |
|----------------------|--------------------|--------------------------|--------|--------|------|
|                      |                    | <20                      | <50    | <100   | <250 |
| High                 | >100               | High                     | High   | Medium | Low  |
|                      | 10-100             | High                     | Medium | Low    | Low  |
|                      | 1-10               | Medium                   | Low    | Low    | Low  |
| Medium               | >1                 | Medium                   | Low    | Low    | Low  |
| Low                  | >1                 | Low                      | Low    | Low    | Low  |

Table A6.2-4: Human health impacts

| Receptor Sensitivity | Annual Mean PM <sub>10</sub> Concentration | Number of Receptors | Distance from the Source (m) |        |        |        |
|----------------------|--------------------------------------------|---------------------|------------------------------|--------|--------|--------|
|                      |                                            |                     | <20                          | <50    | <100   | <250   |
| High                 | >32 µg/m <sup>3</sup>                      | >100                | High                         | High   | High   | Medium |
|                      |                                            | 10-100              | High                         | High   | Medium | Low    |
|                      |                                            | 1-10                | High                         | Medium | Low    | Low    |
|                      | >28-32 µg/m <sup>3</sup>                   | >100                | High                         | High   | Medium | Low    |
|                      |                                            | 10-100              | High                         | Medium | Low    | Low    |
|                      |                                            | 1-10                | High                         | Medium | Low    | Low    |
|                      | >24-28 µg/m <sup>3</sup>                   | >100                | High                         | Medium | Low    | Low    |
|                      |                                            | 10-100              | High                         | Medium | Low    | Low    |
|                      |                                            | 1-10                | Medium                       | Low    | Low    | Low    |
|                      | <24 µg/m <sup>3</sup>                      | >100                | Medium                       | Low    | Low    | Low    |
|                      |                                            | 10-100              | Low                          | Low    | Low    | Low    |
|                      |                                            | 1-10                | Low                          | Low    | Low    | Low    |
| Medium               | >32 µg/m <sup>3</sup>                      | >10                 | High                         | Medium | Low    | Low    |
|                      |                                            | 1-10                | Medium                       | Low    | Low    | Low    |
|                      | 28-32 µg/m <sup>3</sup>                    | >10                 | Medium                       | Low    | Low    | Low    |
|                      | <28 µg/m <sup>3</sup>                      | 1-10 or >10         | Low                          | Low    | Low    | Low    |
| Low                  | -                                          | >1                  | Low                          | Low    | Low    | Low    |

*Table A6.2-5: Ecological impacts*

| Receptor Sensitivity | Distance from source (m) |        |
|----------------------|--------------------------|--------|
|                      | <20                      | <50    |
| High                 | High                     | Medium |
| Medium               | Medium                   | Low    |
| Low                  | Low                      | Low    |

### Determining risk of dust impacts

*Table A6.2-6: Demolition*

| Potential Impact | Risk        |             |             |
|------------------|-------------|-------------|-------------|
|                  | Large       | Medium      | Small       |
| High             | High Risk   | Medium Risk | Medium Risk |
| Medium           | High Risk   | Medium Risk | Low Risk    |
| Low              | Medium Risk | Low Risk    | Negligible  |

*Table A6.2-7: Earthworks*

| Potential Impact | Risk        |             |            |
|------------------|-------------|-------------|------------|
|                  | Large       | Medium      | Small      |
| High             | High Risk   | Medium Risk | Low Risk   |
| Medium           | Medium Risk | Medium Risk | Low Risk   |
| Low              | Low Risk    | Low Risk    | Negligible |

*Table A6.2-8: Construction*

| Potential Impact | Risk        |             |            |
|------------------|-------------|-------------|------------|
|                  | Large       | Medium      | Small      |
| High             | High Risk   | Medium Risk | Low Risk   |
| Medium           | Medium Risk | Medium Risk | Low Risk   |
| Low              | Low Risk    | Low Risk    | Negligible |

*Table A6.2-9: Trackout*

| Potential Impact | Risk        |             |            |
|------------------|-------------|-------------|------------|
|                  | Large       | Medium      | Small      |
| High             | High Risk   | Medium Risk | Low Risk   |
| Medium           | Medium Risk | Medium Risk | Low Risk   |
| Low              | Low Risk    | Low Risk    | Negligible |