



## Air Quality Assessment

Ref:- 1098.116

Proposed conversion of a mixed use building to 24 1 and 2 bed apartments, including 4 'live-work' apartments, with the erection of an additional storey of accomodation.

**At**

203-269 Foleshill Road, Coventry, CV1 4JZ

### 1. Introduction

This air quality assessment has been produced to support the planning application for the restoration and conversion of the above property to 24 1 and 2 bed apartments and 4 commercial units.

### 2. Proposal Summary

The proposal is to retain the bulk of the existing building, but demolish the industrial style lean-to structures to the rear of the building. The rear wall will require building up in places at ground floor level. Internally, the main structural walls will be retained with additional works required to separate the large existing spaces into smaller apartments. There is a proposed additional storey to the roof of the existing building which will be a steel frame construction. The external space will be used predominantly for parking.

### 3. Construction Phase Impact Assessment

Guidance has been issued by the Institute of Air Quality Management (IAQM): 'Guidance on the Assessment of the Impacts of Construction on Air Quality and the Determination of their Significance', 2011 and 'Guidance on the Assessment of Dust from Demolition and Construction', 2014. The construction phase impacts on local air quality associated with the redevelopment of the site have been assessed in accordance with this guidance.

The guidance from IAQM shows that construction impacts on local air quality can be split into four key areas; Demolition, Earthworks, Construction, and Trackout.

The scale of dust emission can be predicted on the scale and type of the proposed works and is classified as small, medium, or large. The guidance provides examples of how the potential dust emission magnitude for different activities can be defined.

**Demolition**

The existing lean-to structures to the rear of the building will be demolished. The volume to be demolished is below 20,000m<sup>3</sup>, the existing structures do not exceed 10m in height, and they are constructed with brickwork, with corrugated roofing, the potential dust emission at demolition stage is classified as 'small'.

**Earthworks**

As the external space is small and the proposals involve only simple landscaping, it is not anticipated that the redevelopment of the site will involve any significant earthworks. As there will be less than 20,000 tonnes of material removed, the site is smaller than 2,500m<sup>2</sup>, no bunds will be formed, and there will be less than 5 heavy earth moving vehicles active at any one time, the magnitude of potential dust emission is classified as 'small'.

**Construction**

Construction is limited mostly to the inside of the existing building and the additional storey steel construction on the roof of the property.

As the building volume is less than 25,000m<sup>3</sup> and the construction materials chosen are not 'dusty', the magnitude of potential dust emission can be classified as 'small'.

**Trackout**

It is hard to accurately assess the potential trackout at this stage, but assumptions have been made that due to the small size of the site, less than 10 Heavy Duty Vehicles will leave the site in any one day, and the unpaved road length will not exceed 50m. Therefore the magnitude of potential dust is classified as 'small'.

A summary of the assessed dust emission magnitude for each of the site activities is displayed in Table 1 below.

Activity	Dust Emission Magnitude
Demolition	Small
Earthworks	Small
Construction	Small
Trackout	Small

Table 1: Summary of the potential dust emission magnitude

**4. Sensitivity of the Area**

The following assessment of site sensitivity has been undertaken using the IAQM methodology.

Various receptors have been identified in the locality of the site;

- The closest residential receptors are located on the other side of Foleshill Road, approximately 17m from the site and facing onto it. There are approximately 20 residential receptors within 50m of the site.
- John Gulson Primary School is located approximately 300m South-East of the site.
- A recreation ground and community centre is situated approximately 250m North-West of the site.
- The site is within the Coventry Canal Conservation Area.

### **Dust Soiling Effects**

Following the IAQM guidance, as there are some residential properties within 20m of the development site, they are considered to be of 'medium' sensitivity.

The Primary School and community centre are considered to be of 'low' sensitivity due to their distance from the site.

The conservation area is of 'medium' sensitivity with respect to dust soiling.

Therefore following the IAQM guidance, the site is assessed to be of 'medium' sensitivity overall with respect to dust soiling.

### **Human Health**

The sensitivity of the area to human health impacts takes into account the annual mean PM<sub>10</sub> concentration, which is below 24µg/m<sup>3</sup>.

The residential properties, school and community centre are considered to be of 'low' sensitivity due to the low concentration of PM<sub>10</sub> in the area.

### **Ecological Sensitivity**

With reference to the MAGIC website, the site sits within a priority species area for CS targeting for the Lapwing species. The site is over 50m away from Coventry Canal so the ecological sensitivity of the site is considered to be 'medium'.



Potential Impact	Sensitivity of the Surrounding Area			
	Demolition	Earthworks	Construction	Trackout
Dust Soiling	Medium	Medium	Medium	Medium
Human Health	Low	Low	Low	Low
Ecological Sensitivity	Medium	Medium	Medium	Medium

The potential dust emissions magnitude for each of the site activities has been combined with the sensitivity of the surrounding area to summarise the risk of dust impacts with no mitigation. This in turn determines the level of mitigation which must be applied. The dust risk is summarised in the table below.

	Demolition	Earthworks	Construction	Trackout
Dust Soiling	Low	Low	Low	Negligible
Human Health	Negligible	Negligible	Negligible	Negligible
Ecological Sensitivity	Low	Low	Low	Negligible

### 5. Construction Phase Mitigation Measures

The IAQM guidance provides recommendations for mitigation measures in line with the risk of dust impacts as detailed below:

#### Site Management and Monitoring

- i. Display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary. This may be the environment manager/engineer or the site manager;
- ii. Develop and implement a Dust Management Plan (DMP), which may include measures to control other emissions, approved by the Local Authority. The level of detail will depend on the risk, and should include as a minimum the highly recommended measures in this document. The desirable measures should be included as appropriate for the site. The DMP may include monitoring of dust deposition, dust flux, real-time PM10 continuous monitoring and/or visual inspections;
- iii. Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken;
- iv. Make the complaints log available to the local authority when asked;
- v. Record any exceptional incidents that cause dust and/or air emissions, either on- or offsite, and the action taken to resolve the situation in the log book;

- vi. Undertake daily on-site and off-site inspection, where receptors (including roads) are nearby, to monitor dust, record inspection results, and make the log available to the local authority when asked. This should include regular dust soiling checks of surfaces such as street furniture, cars and window sills within 100m of site boundary, with cleaning to be provided if necessary;
- vii. Carry out regular site inspections to monitor compliance with the DMP, record inspection results, and make an inspection log available to the local authority when asked;
- viii. Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions;
- ix. Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible;
- x. Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site;
- xi. Fully enclose site or specific operations where there is a high potential for dust production and the site is active for an extensive period;
- xii. Avoid site runoff of water or mud;
- xiii. Keep site fencing, barriers and scaffolding clean using wet methods;
- xiv. Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site cover, seed or fence to avoid wind whipping.

#### **Operating vehicle/machinery and sustainable travel**

- i. Ensure all vehicles switch off engines when stationary – no idling vehicles;
- ii. Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where practicable;

#### **Operations**

- i. Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems;
- ii. Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate;
- iii. Use enclosed chutes and conveyors and covered skips;
- iv. Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate;
- v. Ensure equipment is readily available on site to clean any dry spillages, and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods.

#### **Waste Management**

- i. Avoid bonfires and burning of waste materials;

### **Demolition**

- i. Ensure effective water suppression is used during demolition operations. Hand held sprays are more effective than hoses attached to equipment as the water can be directed to where it is needed. In addition high volume water suppression systems, manually controlled, can produce fine water droplets that effectively bring the dust particles to the ground;
- ii. Avoid explosive blasting, using appropriate manual or mechanical alternatives;
- iii. Bag and remove any biological debris or damp down such material before demolition.

### **Construction**

- i. Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place.

The appropriate mitigation measures will need to be written into a dust management plan (DMP), which should be approved by CCC prior to commencement of work on site.

## **6. Operation Phase Mitigation Measures**

The proposed development will provide 24 apartments with 46 bedrooms with minimal car parking.

As the site is currently used partly for vehicle repairs, the proposal is not expected to increase the amount of vehicular movement around the site.

To mitigate the potential air quality surrounding the site as a result of this proposal, various mitigation measures are proposed;

- i. There will only be 24 car parking spaces, 1 per apartment, and there will be a cycle store for 12 bikes to limit the number of cars entering the site
- ii. All car parking spaces will have electric car charging points to enable and encourage residents to drive electric cars rather than fossil fuel powered cars, which will improve air quality
- iii. There is a bus stop located in close proximity to the site which will encourage residents to use public transport
- iv. All boilers on site will be low NOx dry weight of <40 mgNOx/m<sup>3</sup>

## **7. Conclusion**

It is considered that the development proposals adhere to policy guidance relating to air quality and that the mitigation measures set out fulfil the specified requirements.

Prepared by Callingham Associates, May 2019