



23 June 2020

Redwood Health Care
Foresters Nursing Home
Walton Pool
Clent
Worcestershire
DY9 9RP

RE: Land at Kenilworth Manor – Air Quality Scoping Report

Dear Sir

Swan Environmental Services has been commissioned by Redwood Health Care to undertake an air quality scoping report to investigate the potential impact on air quality of the proposed development. We have reviewed the proposed development plans and publicly available information for the site to provide an indication of potential air quality impacts associated with the development of the site as proposed.

It is understood that the development comprises the construction of a single residential property within the grounds of Kenilworth Manor. The Manor is currently used as a care home and this will be retained. It is also understood that part of the site will be developed as a dementia garden presumably for the use of residents of the care home. Our assessment has considered the impact of both developments (i.e. that covered by the red line in drawing number ZLA_1101-L-200-F appended to this letter report).

Potential Air Quality Impacts

The proposed development has the potential to impact on air quality from the following:

- the impact of dust generated by activities at the site during the construction phase of the development;
- the impact of additional traffic generated by the development on local air quality during construction and operation;
- the impact of poor air quality on the occupiers of the development.

Overview of the Assessment

This scoping assessment provides the following.

- A summary of the relevant assessment criteria and a review air quality monitoring data in the vicinity of the proposed development.
- A discussion of the potential air quality and annoyance impacts generated during the construction phase of the development.
- A discussion of the potential traffic-related air quality impacts.
- A discussion of the potential air quality impacts on occupiers of the development from existing poor air quality.

- Recommendations for further work or consultation, where necessary.

Baseline Conditions

Potential air quality impacts are likely to arise due to exposure to nitrogen dioxide (NO₂) and or fine particles (referred to as PM₁₀ and PM_{2.5}). Air quality objectives (AQO) for the protection of human health for these are as follows:

- 40 µg m⁻³ as an annual mean for NO₂;
- 200 µg m⁻³ as an hourly mean for NO₂ (not to be exceeded more than 18 times per annum);
- 40 µg m⁻³ as an annual mean for PM₁₀;
- 50 µg m⁻³ as a 24-hour mean for PM₁₀ (not to be exceeded more than 35 times per annum); and
- 25 µg m⁻³ as an annual mean for PM_{2.5}.

Local authorities are required to periodically review and assess the current and future quality of air in their areas. Where it is determined that an air quality objective is not likely to be met within the relevant time period, the authority must designate an Air Quality Management Area (AQMA) and produce a local action plan.

The review and assessment process carried out by Warwick District Council (WDC) has highlighted elevated concentrations of NO₂ arising from traffic on two locations within Kenilworth (Warwick Road and New Street). These are located in excess of 0.7 km from the proposed development site.

WDC carry out monitoring of NO₂ within Kenilworth at eight locations. However, these locations are within or close to the two AQMAs and would not be representative of air quality at the development site. WDC do not carry out monitoring of PM₁₀ or PM_{2.5} within Kenilworth. Therefore, ambient background concentrations of NO₂, PM₁₀ and PM_{2.5} for 2020 have been obtained from the Defra UK Background Air Pollution Maps¹. These 1km grid resolution maps are derived from a complex modelling exercise that considers emissions inventories and measurements of ambient air pollution from both automated and non-automated sites. Estimated annual mean concentrations for the development site are as follows:

- 15.6 µg m⁻³ for NO₂ (39% of the AQO);
- 13.5 µg m⁻³ for PM₁₀ (24% of the AQO); and
- 8.8 µg m⁻³ for PM_{2.5} (35% of the AQO).

Therefore, air quality at the development site is relatively good and concentrations of NO₂, PM₁₀ and PM_{2.5} are all well below their respective AQOs.

¹ <https://uk-air.defra.gov.uk/data/laqm-background-maps?year=2017>

Construction Impacts

The Institute of Air Quality Management (IAQM) provides guidance on the assessment of construction activities on local air quality. This determines the likely risk of adverse impacts of dust soiling and health impacts based on two factors.

- the scale and nature of the works, which determines the potential dust emission magnitude as small, medium or large; and
- the sensitivity of the area to dust impacts which is defined as low, medium or high sensitivity.

These are combined to determine the level of risk identified as negligible, low, medium or high risk. The level of risk determines the requirement for mitigation measures to minimise the risk.

Based on the size of the development site and the likely construction activities taking place for this type of site we would conclude that the potential dust emission magnitude would be 'low'. Given the proximity of the development site to existing residential properties on Thickthorn Close, Thickthorn Orchards and the Kenilworth Manor care home, the sensitivity of the area to dust impacts would be defined as 'low' to 'medium' for dust soiling (depending on the construction activity taking place) and 'low' for health impacts.

Overall, it is concluded that the risk of impact for dust soiling would be 'low risk' and for human health impacts 'negligible risk'. Where the risk is assessed as 'negligible' no additional mitigation beyond good site practices is considered necessary. Consequently, additional mitigation measures may be required to minimise the impact of construction activities on dust soiling.

Traffic-related Air Quality Impacts

Guidance is provided by the Institute of Air Quality Management (IAQM) on indicative criteria for requiring an air quality assessment in their land-use planning development control: planning for air quality (January 2017)². For sites that are not located within an air quality management area, these are 500 light duty vehicles (LDVs) AADT (annual average daily traffic) and/or 100 heavy duty vehicles (HDVs) AADT. Where there is an AQMA this is reduced to 100 LDVs and 25 HDVs movements as the AADT.

For construction, the scale of the development is very small. Therefore, it is assumed that vehicle movements will be substantially less than the IAQM criteria for developments requiring a detailed assessment outside of an AQMA (i.e. less than 500 LDV and less than 100 HDV movements as the daily average). Similarly, the two residential properties would generate minimal additional traffic movements on the local roads. Therefore, it is concluded that vehicle movements for the construction and occupation of the development would be below indicative criteria for requiring a detailed assessment, and an assessment of traffic-related air quality impacts would not be required.

² Land-Use Planning & Development Control: Planning for Air Quality, EPUK and IAQM (January 2017)



Impact of Poor Air Quality on Occupiers of the Development

The development site is not located within an AQMA and Defra mapping data indicate that concentrations of key pollutants (NO₂, PM₁₀ and PM_{2.5}) are well below air quality objectives for the protection of human health. Therefore, it is concluded that occupiers of the proposed development would not be exposed to poor air quality.

Conclusions and Recommendations

On the basis of the assessment detailed above, it is considered that air quality would not pose a constraint to the proposed development. It is considered prudent that a dust mitigation strategy is put in place to cover the construction phase of the proposed development.

If you require any further information, then please do not hesitate to contact me.

Yours sincerely

A handwritten signature in blue ink, appearing to read "Peter Clarke", is placed over a light blue rectangular background.

Peter Clarke
Director

Enc Development Plan 3199-SK06



DRAWING NOTES

- GENERAL NOTES:**
- The contractor is to liaise with the main contractor to establish the position of as-built services and manhole covers prior to cultivation and excavation of planted areas and tree pits.
 - If there is any conflict in the information indicated on the contract drawings, the contractor must seek clarification from all the design consultants involved.
 - All trees, planting and grass areas will be subject to a 12-month Maintenance and 5 year Defects Liability Period.

SETTING OUT NOTES:

- All tree, amenity shrub planting is to be pegged/set out for approval by the Landscape Architect prior to planting.
- Tree planting in relation to manhole covers and statutory runs is to be co-ordinated with the main contractor and in accordance with statutory guidelines, for approval by the landscape architect.
- Tree positions are to be set out and staked for approval by the Landscape Architect and Engineer prior to planting.
- Planting adjacent to road kerbs and path edges along roads is to be set back 300mm from the back of kerb to allow room for plants to establish and reduce trampling, but unplanted area to be mulched.
- Ensure that Root Barrier has been installed in the foundation trench before planting any trees on the site. Contact Engineers to determine specification and depth required.
- Planting adjacent to existing vegetation to be retained to be carefully integrated with existing planting, and cultivations evenly graded into existing levels.
- Trees are to be set out to ensure a minimum of 1.5m exists between tree stations and drains/mains lines, in accordance with BS5837. Otherwise, approved root barriers should be employed.

DENSITY NOTES:

- Amenity planting to be carried out at approximately 3no. plants per m², unless otherwise stated in the plant schedule.
- Native hedge planting to be at 5no. plants per linear metre, double staggered, unless otherwise stated in the plant schedule.

TREE AND SHRUB NOTES:

- All planting to be planted in accordance with BS 8545
- Cultivate and weed-kill all areas to be planted/turfed as per Soft Landscape Specification.
- Ameliorate soil prior to planting. Water retaining polymer to be in planting pit only.
- All trees to be staked and protected with spiral guards.
- Tree planting in soft areas to be in topsoiled tree pits as per depths noted below.
- All planting to be bark mulched to a depth of 50mm with Melcourt's 'Ornamental Spruce'.

TOPSOIL NOTES:

- All areas to be landscaped are to be free from contaminated ground.
- All areas to be planted are to be topsoiled to a depth of 400mm.
- All areas to be turfed are to be topsoiled to a depth of 150mm.
- Ensure adequate growing medium exists to provide sustained healthy plant growth beyond the Defects Liability Period.

TREE PIT NOTES:

- All trees are to be planted in tree pits and topsoiled to the following dimensions: 1200mm x 1200mm x 900mm deep
- Excavated material: Separate topsoil and subsoil material and stockpile for backfilling.
- Pit bottoms: Excavate with slightly raised centre: Break up base to a depth of 100 mm.
- Treatment: Soil ameliorant worked into pit bottoms.
- Pit sides: Scarify
- Retain topsoil for re-use where specified.
- In sloping ground, maintain horizontal bases and vertical sides with no less than minimum depth throughout.
- Backfill with clean topsoil either salvaged or imported to BS2882: 2007.
- Soil/compost % - 80:20 on medium soils; 50:50 on sandy soil; 70:30 on clay soils; Water storing polymer may not be necessary on naturally damp soils; i.e. heavy clays.

TREE STAKES:

- Stakes: Stakes to be pressure impregnated softwood (not with creosote or tar), round or half round as specified, straight, peeled, free from projections and large or end knots, pointed at one end.

GRASS AREAS:

- Lawn areas are to be turfed with Rolawn Medallion®, in accordance with the Soft Landscape Specification, and protected with fencing as specified until directed otherwise by the CA.
- Any areas that are too narrow to be laid to turf should be surfaced with decorative gravel over weed-suppressant membrane.
- Disturbed grass areas are to be cultivated to a fine tilth and seeded.
- Undisturbed grass areas are to be scarified and over-seeded where necessary.

STRIP OF EXISTING TOPSOIL:

- The site topsoil which is to be retained for later use shall be stripped and stockpiled.
- The following method shall be used:
 - During suitable dry weather conditions, the existing vegetation shall be treated with herbicide as directed.
 - Site to be cleared of foreign materials.
 - During suitable dry weather conditions, topsoil to be stripped down to its full natural depth, taking care to avoid contamination with subsoil or other foreign materials.
 - Excavated topsoil unsuitable to be reused as topsoil shall be stored separately and used as subsoil.

TOPSOIL STORAGE:

- Topsoil which has been stripped and stored before use in the works shall not have been stacked in heaps higher than 1.5m for more than four weeks.
- Stored topsoil shall not have become waterlogged, compacted or destructured.

IMPORTED TOPSOIL FOR ALL SOFT LANDSCAPE FINISHES:

- Provide topsoil to BS3882: 2007 as necessary to make up any deficiency of topsoil existing on site and to complete the work.

SAMPLE LOAD OF IMPORTED TOPSOIL:

- Deliver to site a sample load of not less than 5m³
- Give notice to all CA to inspect before making further deliveries to site.
- Retain sample for comparison with subsequent loads.

DEFICIENT TOPSOIL:

- Any topsoil offered which is deficient in nutrient levels as required by BS3882:1994 but which otherwise conforms to the specification, may be acceptable providing suitable adjustments are made with the addition of organic and inorganic fertilisers to the satisfaction of the CA and entirely at the landscape contractor's expense.

CONTAMINATION:

- Do not use topsoil contaminated with subsoil, rubbish or other materials that are corrosive, explosive or flammable; hazardous to human or animal life; detrimental to healthy plant growth.
- In areas to receive topsoil, do not use subsoil contaminated with the above materials.
- Give notice to CA if any evidence or symptoms of soil contamination are discovered on the site or in topsoil to be imported.

HANDLING TOPSOIL:

- Give notice of evidence of aggressive weeds and obtain instructions before moving topsoil.
- Select and use plant to minimise disturbance, trafficking and compaction.
- Do not mix topsoil with subsoil, stone, hardcore, rubbish or material from demolition work; other grades of topsoil.
- Keep handling to a minimum and use topsoil immediately after stripping.
- Handle topsoil in the driest conditions possible and do not handle during or after heavy rainfall or when it is wetter than the plastic limit.

SPREADING TOPSOIL:

- Remove temporary roads/surfacing before spreading topsoil.
- Spread in layers of 150mm depth (max.) and gently firm each layer before spreading the next.



REDWOOD CARE LTD

zla1101

Kenilworth Manor
Warwickshire

L-200

Detailed Soft Landscaping
Plot 1

date February 2021

status planning

rev **F**

D	landscaping updated for BNG	12/05/21
E	to suit BDG latest site plan	14/07/21
F	to suit dementia garden tweak	27/07/21

KEY:

- Ownership boundary
- Application site
- Existing trees retained
- Existing vegetation retained
- Existing trees removed
- Proposed tree planting
- Proposed amenity planting
- Proposed native hedgerow seeded beneath - Emorsgate EH1
- Proposed turf/existing lawn
- Proposed wildflower seeding Emorsgate EL1
- Proposed dwellings
- Existing Buildings

ZLA 1101-L-200 Plant Schedule

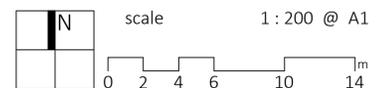
Trees (Standards)					
Species Name	Height	Girth	Specification	Layout	No. Plants
Amelanchier x grandiflora 'Ballerina'	300-350cm	12-14cm	Heavy Standard :Clear Stem 150-175 :5 brks :3x :RB	5/m	3 -
Betula pendula (EHS)	425-600cm	14-16cm	Extra Heavy Standard :Clear Stem 175-200 :5 brks :3x :RB	1 -	1 -
Liquidambar styraciflua 'Worplesdon'	425-600cm	14-16cm	Extra Heavy Standard :Clear Stem 175-200 :5 brks :3x :RB	1 -	1 -
Prunus avium 'Plena' (EHS)	425-600cm	14-16cm	Extra Heavy Standard :Clear Stem 175-200 :5 brks :3x :RB	1 -	1 -
Sorbus aucuparia 'Cardinal Royal'	425-600cm	14-16cm	Extra Heavy Standard :Clear Stem 175-200 :5 brks :3x :RB	1 -	1 -

Trees (Whip)				
Species Name	Height	Specification	Layout	No. Plants
Acer campestre (whip)	60-80cm	1+1 or 1/1 :Whip :BR	5/m	54 -
Corylus avellana (whip)	60-80cm	1+2 or 1/2 :Whip :Branched :3 brks :BR	5/m	68 -
Crataegus monogyna (whip)	80-100cm	1+1 or 1/1 :Whip :Branched :BR	5/m	327 -
Prunus avium (whip)	80-100cm	1+1 :Whip :BR	5/m	41 -

Shrubs (Whip)				
Species Name	Height	Specification	Layout	No. Plants
Prunus spinosa (whip)	80-100cm	1+2 or 1/2 :Whip :Branched :3 brks :BR	5/m	54 -
Rosa canina	60-80cm	1+1 or 1/1 :Whip :Branched :3 brks :BR	5/m	54 -
Viburnum opulus (whip)	60-80cm	1+2 or 1/2 :Whip :Branched :3 brks :BR	5/m	68 -

Shrubs					
Species Name	Height	Specification	Pot Size	Layout	No. Plants
Ceanothus thyrsiflorus repens	20-30cm	Bushy :5 brks :C	5L	3/m ²	3 -
Hebe 'Green Globe'	20-30cm	Bushy :5 brks :C	5L	3/m ²	24 -
Hebe 'Mrs Winder'	30-40cm	Bushy :5 brks :C	5L	3/m ²	3 -
Hydrangea macrophylla	60-80cm	Branched :5 brks :C	7.5L	1/m ²	1 -
Ilex aquifolium	40-60cm	Bushy :3 brks :C	2L	2/m ²	35 -
Lavandula intermedia 'Grosso'	30-40cm	Bushy :7 brks :C	5L	3/m ²	3 -
Spiraea japonica 'Fire Light'	30-40cm	Bushy :5 brks :C	5L	3/m ²	3 -

detailed soft landscaping - plot 1



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