Construction Environmental Management Plan Framework

Prepared by H A Goddard & Sons Limited

Land East of Halden's Parkway, Thrapston

December 2022

Client Newlands Developments

Project Land east of Halden's Parkway, Thrapston

Status Planning

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1.0 Purpose of the Construction Environmental Management Plan Framework (CEMPF)

This Construction Environmental Management Plan Framework (CEMPF) sets out the overarching systems and controls that will be adopted during the construction of the Land east of Halden's Parkway, Thrapston scheme to minimise any adverse environmental impacts in accordance with Construction Good Practice. The CEMPF provides the framework which all construction activities will comply with, with individual activities having their own specific Risk Assessment and Method Statement.

Obligations, Compliance and Enforcement

The principles set out by the CEMPF, and the arrangements established through the CEMPF, will be incorporated within all construction contracts arising from the development and all contractors, their subcontractors and suppliers will be required to comply with the overarching principles and details contained in this CEMPF.

The contractor responsible for the construction of each Phase will be required to prepare a Construction Environmental Management Plan (CEMP) to be compliant with the CEMPF and cover the following elements, as a minimum:

i) Earthworks Management measures to control the emission of dust and dirt during construction;
ii) Control of noise emanating from the site during the construction period;
iii) Contractors' compounds, materials storage and other storage arrangements, cranes and plant, equipment and related temporary infrastructure, including provision for all site operatives, visitors and construction vehicles parking and turning, loading and unloading
iv) Designation, layout and design of construction access and egress points;
v) Internal site circulation routes for construction traffic;
vi) Provision for emergency vehicles;
vii) Details of measures to prevent mud and other such material migrating onto the highway from construction vehicles;
viii) Waste audit and scheme for waste minimisation and recycling/disposing of waste resulting from demolition and construction works.

Contractors shall submit their CEMP to the Project Manager for approval and will allow within their programme adequate time to obtain all necessary statutory approvals.

Any non-conformance or infringement of the approved CEMP shall be reported to the Project Manager within 24 hours and proposals for rectifying the non-conformance shall be submitted to the Project Manager within 7 days. The management and reporting of non-conformances will be the responsibility of the Environmental Manager.

The contractor shall submit proposals to the Project Manager, before works commence, for the internal and external auditing of compliance with the CEMP. Copies of all audit reports are to be provided to the Project Manager within 7 days of the audit. Furthermore, the Project Manager will undertake audits as

and when he/she sees fit.

Failure to rectify a non-conformance within an agreed timescale may result in relevant works being suspended until the Project Manager is satisfied that the non-conformance has been corrected, or in extreme cases termination of the contract.

The CEMP will remain valid throughout the construction phase of the scheme.

The Masterplan of the proposed scheme is provided at Appendix 01.

2.0 Description of the Works

Hybrid Planning Application: Full permission sought for the demolition of all existing buildings and structures and the realignment of an existing farm track; site infrastructure works, including groundworks, strategic landscaping and creation of development plateaus; and construction of a storage and distribution unit (Unit 01) (Use Class B8) with ancillary offices (Use Class E), including gatehouse, access, parking, servicing, landscaping and associated infrastructure. Outline permission sought for the construction of industrial distribution space (Use Class B8) with ancillary offices (Use Class E). All matters reserved except for site access.

3.0 General Site Management

Roles and Responsibilities

The site wide coordination and implementation of the principles established in this CEMPF and CEMP, will be the responsibility of the Project Manager with the support of the development's Environmental Consultant.

As each section of work is taken forward an Environmental Manager will be appointed for that section, generally this will be a contractor appointment but in some circumstances the Project Manager may undertake this role or appoint others. The Environmental Manager shall ensure that the principles of the CEMP shall be fully integrated into all site procedures, processes, and activities, and ensure that appropriate environmental management systems, under BS 14000 or similar, are put in place.

The key contacts are:

- Developer – Newland Developments – Ken Brown
- Project Manager – Avison Young - tbc
- Ecological Consultant – fpcr
- Landscape Consultant – BCA
- Engineering Consultant – Stantec – Matt Hipkiss
- Principal Contractor – tbc
- Principal Designer – Curran Webb
- Site Manager – tbc
- Environmental Manager – tbc

- Health and Safety Manager – tbc

(Please note that the key firms and individuals may change as the scheme develops).

Communications

The effective implementation of the CEMPF is intrinsically linked to good communications between all the project stakeholders and the public.

To promote effective communications during the contract the following will be implemented at the commencement of each section:

- The Project Manager will brief the contractor's senior management team on the philosophy and content of the CEMPF, which will generally include the Director responsible for the scheme.

- The Ecological Consultant shall brief the contractor's senior management team on all ecological aspects of the scheme.

- The contractor's Director shall be responsible for developing a site-specific induction for all those working or visiting his/her site. The scope of the induction will be agreed in advance with the Project Manager.

The contractor will provide a programme to achieve continuous improvement of environmental matters during the contract. The Developer wishes to see positive training on environmental matters on an on-going basis.

The contractor shall develop an appropriate strategy for communicating with the public both before commencement and during the contract in accordance with the Stakeholder Communication Protocol.

4.0 Construction Access & Traffic Management

4.1 Construction Traffic

Access to Land east of Halden's Parkway, Thrapston will be strictly controlled. All vehicles approaching or leaving the Land east of Halden's Parkway, Thrapston will be instructed to only use the designated routes. Directional signage will be erected from the A14 and A605.

Barred Routes

Barred access routes will be agreed by the contractor with the:

- Project Manager
- Planning Authority
- Highway Authorities
- Police

All barred routes shall be signed in accordance with a scheme agreed with the above authorities.

Monitoring

The contractor will submit details of his proposed method on monitoring and reporting Construction Traffic to the Project Manager for his/her approval before he/she undertakes any works on site

Enforcement

LGV enforcement will be undertaken on a 'three strikes and you're out' principle. On the first breach, transgressors will be warned in writing that they have used a "Barred Route" without authorisation. On the second breach a mandatory meeting with the Travel Plan Co-ordinator will be arranged to enforce the issue. On the third breach the driver's permission to enter the site will be withdrawn for three months. After this, should the driver concerned transgress further on any subsequent occasion then permission to enter the site will be permanently withdrawn.

HGV movements will be covered by the same enforcement principles.

4.2 Traffic Management

All works on the Public Highway shall be carried out in accordance with Chapter 8 and the traffic management arrangements agreed with the Local Highway Authority, National Highways and the Police.

The development shall be carried out in such a manner to ensure that emergency vehicles visiting the development, adjacent properties or passing through or adjacent to the development are always unhindered and provided with free flow passage as far as is practicable.

5.0 Working Hours

No construction work that has the potential to cause adverse noise impacts outside the site boundary shall take place on the site outside the hours of **0800 - 1800** Mondays to Fridays and **0800 - 1300** on Saturdays, and at no times on Sundays or Bank Holidays unless otherwise agreed with the local planning authority.

Deliveries will also be kept to within these hours; however, the contractor(s) will endeavour to reduce deliveries during peak hour traffic of **0800 – 0930** and **1530 - 1730hrs** Monday to Friday where possible.

In adopting the above working hours, contractors will have benefit of a period (typically approximately 30 mins) before and after normal working hours for start-up and close down of activities (e.g. minor deliveries, movement of staff and equipment to place of work, unloading, maintenance or washdown, but not including operation of plant or machinery). The start-up and close-down periods do not represent an extension of normal construction working hours, and particular care will be taken to limit and control noise during such periods.

In addition, consent for additional working hours may be sought for specific phases or elements of the works. Any such temporary change to hours for such activities will require agreement in writing from the Local Authority, with an explanation of the reasons for the request.

6.0 Pollution and Contamination

Pollution and contamination can be pre-existing or caused by construction activities.

The contractor must make himself fully aware of all the ground investigation reports and geotechnical design reports relating to the site.

The contractor shall plan and execute his/her work to ensure that hazardous or polluting substances do not cause harm to surface water systems, landscaping and associated ecology.

The scheme requires significant earthworks which will inevitably increase the risk of pollution to the surface water system. The contractor shall adopt water pollution prevention procedures in line with good

practice. In preparing the procedures the contractor shall consider the following as a minimum:

- Published guidance from the Environment Agency
- Control of water pollution from construction site and other documents published by CIRIA
- The site-specific requirements of the EA
- Arrangements for monitoring water bodies to ensure and demonstrate water quality
- Fuelling of plant and equipment
- Maintenance of plant and equipment
- Storage of hazardous materials
- Control of concrete truck washout arrangements
- Flood warnings
- The landscape and ecological environment

Also see Section 15 – Temporary Surface Water Management System.

The contractor will be required to include water pollution prevention in all inductions and shall arrange update toolbox talks at appropriate intervals during the contract.

All incidents involving water pollution shall be immediately reported to the Project Manager.

7.0 Measures for Controlling Noise and Vibration

7.1 Noise

7.1.1 Responsibilities

The Developer will appoint a Noise Consultant to:

- Oversee compliance with this Construction Environmental Management Plan.
- To provide advice to the contractor.
- To assist in the interpretation of monitoring data.
- To advise on amendments to Method Statements and working plans based on observed data.
- To coordinate Noise issues between different contractors engaged on the development.

- To liaise with adjacent projects that may have an impact of Noise on sensitive receptors.

The appointed contractor shall:

- Appoint a Noise Manager (site based).
- Comply with this Construction Environmental Management Plan.
- Install monitoring equipment which is in accordance with the Dust Sensitive Zones and Monitoring positions (Dust and Noise). As the sensitive receptors, monitoring stations will be established on the eastern boundary of Land east of Halden's Parkway, Thrapston.
- Review monitoring data to ensure the mitigation measures are being effective,
- Implement additional measures if monitoring suggests it to be necessary,
- Maintain a log of all noise data,
- Maintain a log of Noise Complaints including details as to how the complaint was closed out and signed off by the Developer's Noise Consultant.
- Provide a Noise Report at each monthly progress meeting.

7.1.2 Monitoring

Noise monitoring will be provided as noted above, on the appropriate boundaries of Land east of Halden's Parkway, Thrapston.

The monitoring equipment shall be ***i-dB*** Type 2 noise monitor or similar with continuous monitoring via ***AirQWeb*** software***.***

Acceptable levels shall be in accordance with BS 5228:2009 + A1:2014.

The monitoring equipment shall send notification if acceptable levels have been exceeded.

Details of typical equipment is provided in Appendix 02

7.1.3 General Mitigation Measures

The Contractor will implement measures to minimise the disturbance caused by construction traffic and activities.

When planning all activities, contractors should predict noise levels and review the likely impacts and what can be done to mitigate any adverse impacts.

If construction activities are likely to cause a potential nuisance at sensitive receptors, consideration should be given to noise measurements before and during construction.

The guidance given in BS 5228: 2009 "Code of Practice for Noise and Vibration Control on Construction and Open Sites" relating to "Methods of Work" will be followed and will be incorporated within the method statement which will form the basis for the implementation of construction works. As required by BS 5228, a survey of background noise will be undertaken prior to the works commencing, and acceptable noise levels established in accordance with Table E.1 of BS 5228: 2009. Any material breach of acceptable noise levels notified to the Environmental Manager will be addressed immediately to ensure no recurrence.

In planning their work, the contractor shall consider the following, as a minimum:

- Selection of plant and equipment
- Timing of an operation in the programme
- Timing the activity during the day
- Duration of tasks
- Maintenance of plant and equipment
- Use of sound reducing equipment
- Closing equipment during period of non-use
- Location access routes and haul roads

Noise shall be considered in all method statements and risk assessment.

7.1.4 Additional Mitigation Measures

Should monitoring indicate that the measures in Section 7.1.3 are not achieving the required levels then additional measures shall be considered and implemented, these shall include:

- Working Hours
- Task Durations,
- Additional Screening,
- Relocation (if possible)
- Alternative methods and plant.

7.2 Vibration

The Contractor will implement measures to minimise the disturbance caused by construction traffic and activities.

When planning all activities, the contractor will consider vibration and review the likely impacts and what can be done to mitigate any adverse impacts.

If appropriate, a Vibration Impact Assessment should be carried out in accordance with BS5228.
In planning their work contractors should consider the following, as a minimum:

- Selection of plant and equipment
- Methods of working
- Duration of activities
- Working hours

8.0 Measures for Controlling Emission of Dust

8.1 Risk of Dust Emissions

The risk of dust emissions causing loss of amenity and/or health or ecology is related to:

- The activities being undertaken (earthworks, number of vehicles and plant etc.)
- The duration of these activities,
- The meteorological conditions (wind speed, direction and rainfall),
- The proximity of receptors
- The adequacy of mitigation measures, and
- The sensitivity of the receptors to dust.

8.2 Dust impacts considered in the plan:

- Annoyance due to dust soiling,
- The risk of health effects due to an increase in exposure to PM10, and
- Harm to ecological receptors.

8.3 Screening Criteria for potential receptors.

Human receptors, being locations where people spend time and where property may be impacted by

dust, within:

- 350m of the boundary of the site, or

Ecological receptors, being habitats that might be sensitive to dust, within

- 50m of the boundary of the site, or
- 50m of the route(s) used by construction vehicles on the public highway, up to 500m from the site entrance.

Areas that are considered within the Dust Sensitive Zones are buildings generally to the east of Land east of Halden's Parkway, Thrapston

Responsibilities

The Developer will appoint an Air Quality Consultant to:

- Oversee compliance with the Dust Management Plan.
- To provide advice to the contractor,
- To assist in the interpretation of monitoring data, and
- To advise on amendments to the Dust Monitoring Plan based on observed data.
- To coordinate Air Quality issues between different contractors engaged on the development,
- To liaise with adjacent projects that may have an impact on Air Quality and sensitive receptors

The appointed contractor shall:

- Appoint an Air Quality Manager (site based),
- Comply with the Dust Management Plan,
- Install monitoring equipment is accordance with the Dust Management Plan,
- Review monitoring data to ensure the mitigation measures are being effective,
- Maintain a log of all air quality data,
- Maintain a log of Air Quality Complaints including details as to how the complaint was closed out and signed off by the Developer's Air Quality Consultant.
- Provide an Air Quality Report at each monthly progress meeting.
- Obtain the agreement of the Air Quality Manager to Method Statements and Risk Assessments for all works within Dust Sensitive Areas

Monitoring Measures.

8.3.1 Wind Speed and Direction

A static wind speed monitor shall be provided at the Site Compound.
A handheld wind speed monitor shall always be available on-site.
A record of wind speed and direction shall be recorded twice a day. The contractor, in conjunction with the Air Quality Consultant, shall correlate wind speed, wind direction, PM10 readings and activities. The results of the correlation, which shall be continually refined, shall be used to identify days when the Site Dust Management Status is likely to be Amber or Red, see section 8.3.4.

8.3.2 PM10 at designated locations

Air Quality monitoring equipment shall be installed at three locations along the eastern boundary of Land east of Halden's Parkway, Thrapston.

The equipment shall be similar to a Topas or Osiris manufactured by Turnkey Instruments Ltd.

The instrumentation shall be capable of sending alerts when readings of PM10 exceed 250µg/m^3 when averaged over a 15-minute period.

A handheld detector, similar to a Dustmate manufactured by Turnkey Instruments Ltd, shall always be available on site.

A copy of the software necessary to analyse the output from the monitoring equipment shall be available on-site. The format of output reports shall be agreed with the Air Quality Consultant and reported at each Progress Meeting.

Details of typical equipment is provided in Appendix 02

8.3.3 Visual Inspections

At the agreed Air Quality Monitoring locations, a flat smooth surface shall be provided (500mm x 500mm) to allow the Air Quality Manager to visually inspect the level of dust deposition. Albeit a subjective assessment, this will provide evidence of dust risk. The results of each inspection shall be recorded.

The Air Quality Manager shall also observe activities twice a day to assess dust risk and the results of each assessment shall be recorded.

8.3.4 Site Dust Management Status

A simple traffic light system shall be adopted for all works within Dust Sensitive Areas:

Green – General Mitigation Measure to apply
Amber – Additional Mitigation Measure shall apply
Red – No high-risk activities shall take place in a Dust Sensitive Area.

The Air Quality Manager shall assess the Site Dust Management Status twice a day and advise the site team management of the status. The site team shall then ensure that the appropriate measure is adopted.

8.3.5 Site Action Level

The Air Quality Manager shall increase the Dust Management Status to Amber on receipt of a warning that the PM10 readings have exceeded 250µg/m^3 when averaged over a 15-minute period.

General Mitigation Measures

- Haul roads should not be used in Dust Sensitive Areas whenever possible,
- Haul roads in Dust Sensitive Areas shall be constructed with a surface that will reduce the risk of dust generation and thereafter maintained in an appropriate manner.
- A site speed limited of 20km/hr shall always apply
- Materials should not be stockpiled in Dust Sensitive Areas, whenever possible.
- Processing areas should not be established in Dust Sensitive Areas,
- No burning on site shall be permitted,
- Soil stockpiles to be in place between April to October shall be profiled and seeded as soon as possible after completion,
- The final surface of permanent landscaped areas shall be seeded as soon after completion as conditions allow.
- Plant and equipment shall be selected to minimise the generation of dust,
- Methods of construction shall be adopted to minimise dust generation, whenever possible.

Additional Mitigation Measures

- All haul roads shall be damped down,
- The site speed limit shall be reduced to 10km/hr,
- Whenever possible, works in Dust Sensitive Areas that could give rise to dust should be stopped or minimised.

- Dust suppression measures shall be used on all crushing/screening plant and equipment.

Contractors will plan their activities to reduce the level of risk and mitigate any residual impacts.

Generally, the most effective method of dust control is damping using a fine spray. The contractor will fully investigate sources of water and, where possible, use recycled water. Potable water should not be used.

In planning his activities, contractors should consider the following as a minimum:

- Damping down arrangements
- Sources of water for damping down
- Location of haul roads and their surfaces
- Stabilisation of temporary haul roads.
- Sweeping arrangements of hard surfaces
- Site speed limits
- Selection of plant and equipment
- Maintenance of plant and equipment
- Covering of payloads while in transit
- Location and surface treatment of stockpiles
- Burning will not be permitted on site
- Prevailing wind direction
- Programme and seasonal timing

9.0 Contractor's Facilities, Compound, Offices, Fencing, Parking and Storage

Within the site compound designated walkways will be established to segregate pedestrians from vehicles.

The contractor shall provide details of his proposed car parking area to the Project Manager before works commence.

The management of material storage is a key element to minimising waste and to maximise the efficiency of site operations. The gate person will direct the deliveries to the correct location. Deliveries which are stored in the site compound will be off loaded using either a fork-lift or a lorry mounted crane. The bulk loose material will be discharged directly from the delivery vehicle.

10.0 Waste Management

It is inevitable that some waste will be produced during the construction works. Throughout the construction process, all activities will seek to minimise the generation of waste, utilising the waste hierarchy where practicable, to manage waste. The waste hierarchy seeks to reduce waste through elimination, reduction, re-use, recycling through to disposal as the final option. Handling and disposal of waste must be carried out under the 'Duty of Care' Regulations and current legislation.

Waste management procedures shall be developed and will include the following topics:

- Identification of the types of waste that may be generated;
- Implementation of re-use and recycling strategies;
- Implementation of waste minimisation strategies;
- Set up of waste disposal facilities;
- Control and management of the disposal of different types of waste;
- Roles and responsibilities;
- Monitoring, reporting and auditing of waste produced on site.

Earthworks/Spoil

The proposed development will seek to minimise the import and export of material, wherever possible. The re-use of materials around the site, as suitable engineering material or infill material, will be carried out whenever possible.

Reduction

A number of potential options are available to complement construction waste reduction including maximising off-site fabrication, efficient design specification of standardised components/materials, implementing a just-in-time delivery system to minimise the volume of goods/materials stored on site and therefore exposed to inclement weather conditions and other site damage sources. Procedures will include:

Re-Use

Certain materials may have a relatively high level of re-use (e.g. timber, aggregates, brick and blockwork) within the construction stage operations. Such wastes may arise from spoiled materials, and natural waste from construction processes. Procedures will include:

- Separate skips/receptacles will be provided to receive different types of specific waste which can be re-used on site.
- Licensed waste carriers will be required to identify possibilities of local community re-use of waste materials.

Recycling

Certain materials may have a feasible recycling value (e.g. timber, aggregates, plastics, glass, metals). These may arise from similar construction processes as those identified above for re-use.

Procedures will include: -

- Separate marked skips/receptacles will be provided for the depositing of types of waste suitable for efficient recycling; and
- Discussion with licensed waste carriers in respect to the feasibility/efficiency of specific materials recycling.

Disposal

It is inevitable that certain materials will have to be removed from site for disposal as they have no re-use/recovery value. Procedures to be considered in preparing a Site Waste Management Plan will

include:

- All wastes which require removal from site for final disposal will be subject to an effective management control regime ensuring statutory compliance. The key components of this regime are illustrated below:

  - Appointing competent and suitably registered waste carrier(s);
  - Establishing an effective site waste stream strategy (recycling, re-use, disposal);
  - Providing an effective waste skip strategy to suit the waste stream strategy and which differentiates between hazardous, non-hazardous and inert wastes;
  - Should asbestos be encountered all potentially asbestos containing materials will be disposed of by a suitably licensed contractor in accordance with relevant guidance and legislation;
  - Providing adequate information/training to site operatives in respect of the waste stream strategy; and
  - Implementing an effective audit procedure, to audit the waste disposal regime from source to licensed disposal facility(s). This will include reviewing all relevant Waste Management Licences and Waste Transfer Licences of all waste contractors on the project. In addition, a record will be kept of all Waste Transfer Notes to ensure that all waste movements from the site are properly documented. Non-Conformance Reports would be issued to ensure any deficiencies are corrected.

11.0 Storage of Fuel, Oil and other Chemicals

All fuel, oil and chemicals shall be stored in accordance with the Manufacturer's recommendations and any tanks shall be in accordance with PPG7 (above ground oil storage tanks) and PPG22 dealing with spills.

Mobile bowsers will be used to refuel construct plant. All bowsers have a double skin construction and bund capacity to store 110% of their total volume. Drip trays will be used beneath all refuelling hoses and no refuelling will take place within 100m of a watercourse or drain.

12.0 Temporary Lighting

Generally, no works are planned to be undertaken in periods of darkness and therefore it is unlikely that task lighting will be required. However, unplanned events can occur for which task lighting may be required for short periods; in this event a method statement shall set out the maximum height of lighting lanterns and the average lux levels.

Temporary lighting will be provided in the site contractor compound for security and safety reasons. All security lighting will be focused to the middle of the site compound and will not face any neighbouring properties or directly into the public highway.

Task lighting shall ensure that there is no upward light.

Lighting will be switched off when not required for safety or security.

13.0 Prevention of Debris on Highways

The measures and provisions set out in Section 9 and 10 of this Plan will go a long way to prevent the deposition of debris on the highway.

The contractor will provide a Wheel Cleaning facility at the exit to the site compound. At all times delivery vehicles will either be driving on tarmac or Type 1 sub-base, therefore this will minimise the risk of tyres becoming dirty. It is anticipated that there will be a low number of delivery vehicle movements, onto and off site during the Infrastructure work.

The Wheel Cleaning equipment will consist of a high-pressure hose mounted onto a portable water bowser. In the unlikely event that this is not sufficient, and debris is deposited outside the site boundary, it will be cleaned immediately using a road sweeper.

14.0 Protecting Biodiversity Interests

Landscape

The Landscape Designer will identify existing landscaping or newly planted landscaping that needs to be protected. Protection shall be provided in accordance with BS 5837: 2012 Trees in relation to design, demolition and construction – Recommendations.

Ecology

Habitats

The proposals include little retained habitat, although some of the peripheral habitats would be retained. The habitats to be retained are boundary features. The aims for these areas are to:

- Protect valuable habitats *in situ* during development and remediation works.
- Enhance the existing ecological interest and provide additional habitat for species of interest known to be present within the site through appropriate management

General Measures

The potential for impacts on retained habitats outside of the immediate working areas during construction activities will be minimised by protecting all unaffected habitats within the site and those bounding it to ensure that disturbance is kept to a minimum and any sensitive species are retained *in situ* where feasible.

All retained habitats will be protected by the erection of fencing of a type of barrier appropriate to the likely impact in each area, such as Heras panels or orange barrier mesh fencing. Working areas will be marked out prior to start in that area and kept within the footprint of the new plot or habitat creation area.

No temporary storage of materials, site machinery or construction of haul routes will be sited within or adjacent to retained habitats and access by construction site personnel will be prevented by erection of sturdy fencing.

An ecological clerk of works will ensure that measures are implemented to prevent inadvertent damage to retained or created habitats throughout the construction phase particularly where vegetation is to be removed or during works close to retained habitat.

Tree protection

Retained trees will be adequately protected during works ensuring that the calculated RPA for all retained trees is protected through the erection of the requisite tree protection barriers. Measures to protect trees should follow the guidance in BS5837 and detailed within the FPCR Arboricultural Assessment (February 2022) and should be applied where necessary for the purpose of protecting trees and hedgerows within the site whilst allowing sufficient access for the implementation of the proposed layout.

Pollution avoidance

Site management protocols will be put in place to ensure that best practice measures are complied with, these must be outlined within the Construction Environmental Management Plan (CEMP).

The possibility of fuel spillages will be minimised through sound site management in accordance with the CEMP. The CEMP will also include strategies for remediation and contamination incidents in the unlikely event of their occurrence including the use of spill kits.

The location of all works compounds will be agreed with the supervising ecologist. Any environmentally hazardous material will be kept in dedicated stores and storage tanks will have appropriate bunding.

To ensure construction works are undertaken in an environmentally responsible manner the best practice guidance listed below will be adhered to; these include Pollution Prevention Guidance (2012), some of which has been superseded by Guidance for Pollution Prevention (GPP):

- PPG 1: Understanding your environmental responsibilities - good environmental practices. A basic introduction to pollution prevention, with signposts to other PPGs and publications. (July 2013)
- GPP 2: Above ground oil storage tanks - For above ground oil storage, excluding oil refineries and distribution depots. (January 2018)
- PPG 3: Use and design of oil separators in surface water drainage systems - For identifying where an oil separator is required and, if so, what size and type of separator is appropriate. (April 2006)
- GPP 4: Treatment and disposal of wastewater where there is no connection to the public foul sewer - For selecting the correct sewage disposal, treatment and disposal options, and maintenance and legal requirements. Also, for what to have in mind, in terms of wastewater treatment, when buying a house. (November 2017)
- GPP 5: Works and maintenance in or near water - For construction or maintenance works near,

in, or over water. (January 2017)

- PPG 6: Working at construction and demolition sites - For the construction and demolition industry. (2012)
- PPG 7: Safe storage - The safe operation of refuelling facilities for operators of liquid fuel refuelling facilities; it applies to all types of fixed refuelling facilities (July 2011).
- GPP 8: Safe storage and disposal of used oils - For storing and disposing of used oils. Applies to activities ranging from a single engine oil change to those of large industrial users. (July 2017)
- GPP 13 Vehicle washing and cleaning (April 2017) - For washing and cleaning any vehicle using automatic wash systems, high pressure or steam cleaners and washing by hand.
- PPG 18: Managing fire water and major spillages - For identifying equipment and techniques available to prevent damage to the water environment caused by fires and major spillages. (June 2000)
- GPP 21: Pollution incident response planning - For producing emergency pollution incident response plans to deal with accidents, spillages and fires. (July 2017)
- PPG 22: Incident response - dealing with spills or incident response - dealing with spills. (April 2011)
- PPG 23 Maintenance of structures - replaced by PPG 5, Works and maintenance in or near water.
- PPG 26 Safe storage - drums and intermediate bulk containers - For site operators of industrial and commercial premises storing and handling drums and intermediate bulk containers (IBCs) containing oil, chemicals or potentially polluting substances. (March 2011)

Protected Species

The following section provides outline details of the protected species potentially present within the site and outlines the measures that may need to be taken to avoid impacts and potential breaches to legislation.

The key species mitigation and enhancement aims are:

- Avoid unnecessary disturbance during site works through careful programming, implementation and supervision.
- Create habitats using general principles known to benefit specialist groups of interest.

Badgers

No badger setts were recorded on-site or within 30m of the badger sett during surveys in 2021 but evidence of badger usage on-site was recorded in the form of two latrines and snuffle holes. Any open trenches or similar adjacent must be covered at night or installed with a wildlife ladder to prevent badger entrapment. Any soil piles must be covered over or compacted down to minimise the risk of badgers digging in to create setts and checked daily by site staff. In the event any evidence of badger digging is observed, the ECoW must be contacted for further advice.

Given that badgers are a highly mobile species, a re-survey of the site will be undertaken prior to start of each phase. The survey will focus upon identifying the presence of new badger setts and quantifying any changes in activity associated with the existing setts. The results will be used to inform phase specific mitigation or minor site works, should badger be found to be active. In the event that any new setts are identified, 30m exclusions zones may need to be adhered to unless the sett has been successfully closed under licence between the 1st of July and the 30th of November.

Bats

It is likely that the LPA will require pre-commencement surveys of trees/buildings prior to demolition/felling of trees to ensure bats do not pose a statutory constraint.

Best Practice Lighting Design

Construction lighting will need to avoid deterring bats from retained habitats or those outside of the site. Suggested measures include:

- All lighting should be screened from retained habitats.
- All lighting columns and building-mounted lights located as low as possible and comprising sensitively positioned directional lighting.
- Light free of UV emissions to prevent potential adverse effects on flying insects and bat populations.
- Lighting designed to switch off or be dimmable where possible.
- Use of LED lighting units with sharp light cut-off

Birds

A variety of breeding birds have been identified within the site including those that nest on scrub and dense vegetation and those that prefer open habitats such as arable fields and open grassland. To avoid disturbance to breeding birds, ground clearance works and vegetation should be undertaken prior to the bird-breeding season (March to August, inclusive). If this is not possible, areas must be checked prior to removal of vegetation or ground works by an experienced ecologist. If active nests are found, vegetation will be left untouched and suitably buffered from works until all birds have fledged. Specific advice will be provided prior to undertaking the clearance. A suitably qualified ecologist would supervise this.

Further to the above, unmanaged areas of grassland provide a potential constraint from the presence of ground nesting birds during the breeding season (typically March – August inclusive). It is therefore recommended that these habitats are cleared outside of this time over winter, to minimise potential future constraints once works commence later in the year.

Reptiles

A single common lizard was recorded during surveys and consequently measures will need to be incorporated into construction methods to prevent killing and injury comprising passive displacement of areas of suitable habitat. Displacement could be applied in those areas where localised destruction of small areas of habitat will occur. Sensitive management of vegetation to displace reptiles towards areas of retained habitat will be used. This approach will involve the following key steps:

- Passive displacement shall only be undertaken during suitable weather conditions, i.e: daytime temperature 18˚C or higher, within the reptile active season (mid-March to mid-October)
- Grassland will first be strimmed directionally to a height of 100mm and 1-2 hours later it will be reduced to 50mm. All strimming will be carried out from the centre of the working areas towards the retained areas of habitat.
- All arisings will be completely removed from the working area to prevent potential areas of refugia from being used by reptiles moving across the area.
- Further operations will only continue once common reptile species have been confirmed to be absent from the working area by the supervising ecologist immediately prior to any ground works.

Winter clearance

Suboptimal areas of the site not considered likely to support over wintering reptiles due to a lack of suitable ground conditions and absence of potential refugia owing to the nature of its former use and could be cleared during winter.

Areas of suitable habitat include hedgerows and their margins, grassland, tall ruderal vegetation and scrub areas.

Destructive Search

A destructive search of suitable features/habitats would be made during suitable weather conditions. The search will involve the supervised dismantling of any suitable hibernation/refuge features, such as piles of brash and / or rubble. Development will proceed once the appropriate areas have been made unsuitable by a complete destructive search.

15.0 Temporary Surface Water Management System

The arrangements for the temporary management of surface water shall be set out in a detailed method statement.

The contractor shall prepare and submit to the Project Manager's approval his/her surface water management plan before any works in a phase commences and the contractor shall thereafter carry out his/her works in accordance with the approved plan.

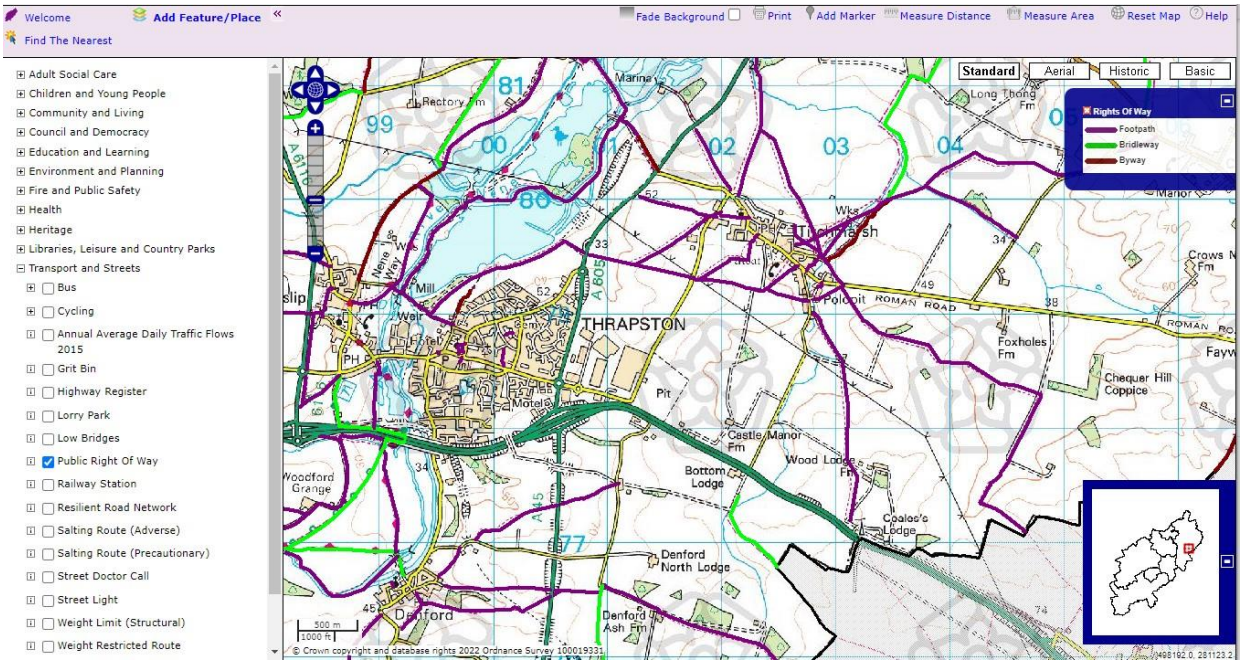
Measures shall be adopted in accordance with PPG5, particularly Section 2.2b (balancing lagoons) and 2.2c (filtration) and CIRIA Report C532 "Control of water pollution from construction sites".

Monitoring points shall be established downstream of any temporary balancing lagoons to monitor water quality so that the effectiveness of the measures can be assessed and improved, if necessary. Details of monitoring techniques shall be set out in the detailed method statement.

Testing parameters shall be agreed with the Environment Agency/Local Lead Flood Authority ahead of collection of baseline test data.

16.0 Public Rights of Way

The existing Public Rights of Way (PRoW) are shown below:



Appendix 1

Indicative Masterplan

Areas Schedule									Parking and docks - figures quoted are minimum, plots may allow additional.					
Plot No.	Warehouse GIA SQFT	Warehouse GIA SQM	Offices GIA SQFT	Offices GIA SQM	Hub Office SQFT	Hub Office SQM	Total GIA SQFT	Total GIA SQM	Car Parking @1/120sqm	HGV Parking	Docks	Level Access	cycles	PTW's
1	500000	46451	25000	2323	10000	929	535000	49704	414	142	68	8	100	16
2	360000	33445	15000	1394	5000	465	380000	35304	294	85	48	8	70	12
3	594000	55184	25000	2323	10000	929	629000	58436	487	201	72	8	117	18
4	550000	51097	25000	2323	10000	929	585000	54348	454	202	72	8	109	17
Total	2,004,000	186,177	90,000	8,363	35,000	3,252	2,129,000	197,790	1649	630	260	32	396	63

Revisions:

P18	Foul Pumping Station added.	03.02.22 RG
P19	Red Line Boundary corrected. Plot areas amended.	01.12.22 WE
P20	Linework amended to omit existing buildings.	05.12.22 WE
P21	General updates. Permissive route amended.	09.12.22 WE
P22	Existing Farm track line omitted.	16.12.22 WE

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HUNTINGDON ROAD THRAPSTON

INDICATIVE MASTERPLAN AND PLOT 1 DETAILS

Status	PLANNING
Drawn by : RG	Checked by : RM
Date	01/04/2021

Document Number:

HRT-PHP-01-XX-DR-A-4432-012-P22

Scale@ A1 1:2000

0 50m 100m

Appendix 2

Noise & Air Quality

Turnkey Instruments Ltd

World Wide Web Interface

- **View latest PM readings and associated live site video feed on any web browser, even on your Android or iPhone. Automatically links with Google map of instrument location and satellite images**
- **Pan (& zoom) video image to remotely inspect site in more detail**
- **Use AirQ to control instrument and continuously monitor dust readings over the internet**
- **Use AirQ to upload stored results from instruments anywhere in the world using your internet connection**
- **Program automated emails or text messages in the event of alarm conditions**
- **Multi-drop RS485 to connect multiple instruments at one site to a single internet node at distances of up to 1km**
- **Worldwide connection with 3G/4G mobile broadband or fixed DSL landline**
- **Mains or battery powered**
- **Can be retro-fitted to all existing Osiris/Topas installations**

Turnkey Instruments are pleased to announce the availability of an internet device server for their range of environmental instruments. This new proprietary device allows you to conect to any Osiris or Topas dust monitor by means of a standard internet or ethernet connection.

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Turnkey Instruments Ltd
Tel: +44 (0)1606 330020 www.turnkey.tel

i-dB Noise Monitor

i-dB Internet Noise Monitor

- **Accuracy:** **IEC61672-1 Class 2 as standard**
  IEC61672-1 Class 1 as cost option
- **Measurement Range:** **30dB to 120dB RMS**
- **Parameters:** **LAeq, LAmax, LA10, LA90 and others**
- **Operating Temperature:** **-10C to 50C**
- **Humidity:** **0 to 95%**
- **Enclosure:** **IP65, up to 10m cable**

i-dB is Turnkey's new internet noise monitor. It connects directly to any Osiris or Topas continuous multi-fraction PM dust monitor to allow both dust and noise to be continuously monitored and recorded via the internet using our free ***AirQWeb*** software application and a web browser such as Internet Explorer, Chrome or Firefox. An equivalent free 'app', AirQApp, is also available for Android and iPhone devices.

AirQWeb can be used to graph and tabulate most commonly used noise parameters such as LAeq, LAmax, LA10 and LA90 and others along with simultaneous measurements for PM1, PM2.5, PM10, TSP dust fractions, wind-speed and direction

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APM

Osiris Monitor
Sira MC 090157/01

Topas Monitor
Sira MC 090158/01

Airborne Particulate Monitors

- **Real time air quality monitoring**
- **Simultaneous TSP, PM10, PM2.5 & PM1**
- **Multi-monitor networks**
- **Spot monitoring, portable or permanent installations**
- **Meteorological instruments**

Turnkey Instruments design and manufacture a range of easy to use instruments which continuously measure and record the concentration of airborne particles. In their environmental mode, these instruments can simultaneously monitor the concentrations of TSP, PM10, PM2.5 and PM1 particles. Alternatively, in their workplace mode, the inhalable, thoracic and respirable fractions can be monitored.

An internal reference filter can be used to confirm the gravimetric calibration of the instruments.

All instruments feature internal data logging for the particle concentrations. Osiris and Topas also allow wind speed and direction, temperature, humidity, rainfall and two external gas or noise meter inputs to be recorded at the same time.

All instruments use our own proprietary nephelometer. A pump continuously draws an air sample through the nephelometer, which analyses the individual particles as they pass through a laser beam. These same particles are then collected on the reference filter. The nephelometer's dedicated microprocessor can analyse individual particles even if there are millions of them per litre. This allows size fractions to be determined at concentrations up to several mg/m^3. Above this there is an indicator range which can be used without sizing up to 60 mg/m^3.

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Osiris (Particulate Monitoring)

The Osiris is a small and compact instrument that can be used to study short to long term particulate monitoring. Powered by various power options to suit your application. The Osiris can be used effectively to determine exceedance areas.

DustMate

DustMate is a hand-held detector ideal for short term sampling. Highly effective for monitoring air quality within buildings and clean rooms. It measures TSP, PM10, PM2.5 and PM1 simultaneously in real time. Data can then be transferred to a PC via PC-Link.

Topas (Particulate Monitoring)

The Topas fixed station monitor is intended for long term installation. Several sites can be networked together to form a city wide monitoring system, which can be controlled by various communication means including GSM, 3G router or radio modem.

Osiris (site sentry, full site monitoring system)

When Osiris is used with i-dB, Turnkey's latest noise monitor, a full site monitoring station can be used to meet all regulations. The system is designed to provide remote online monitoring of dust and noise emissions to meet regulatory requirements. This innovative web based remote system simultaneously measures multi-parameter dust, noise, wind speed and direction, temperature & humidity and rainfall from a single UK based manufacturer. All data is stored on a web based secure system with private login.

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AirQ Software, AirQWeb & AirQApp

Environmental Monitoring Software

AirQ the user friendly and quick reporting PC software, designed in-house will manage and display results from our range of environment sensors.

AirQ can be used to control sensors and record measurements in real time

- "Live" graphs and tables appearing on the PC screen.
- Software automatically starts and stops sensors.
- Change parameters and configurations.
- Upload stored results.
- Powerful database engine.

With **AirQ** a live "on-screen" pollution rose can be created which plots measurements against wind direction on a polar chart.

Networked Environmental Monitoring

Creating a network of sensors is easy. Any number of sensors can be connected to an **AirQ** network created with fixed wiring (up to 10km), licence free radio telemetry (up to 20km), telephone and GSM cellular modems.

A network can include alarm facilities such as beacons or sirens for early warning and response to high readings. It can also active water sprinkler systems for damping down exceedance levels of dust.

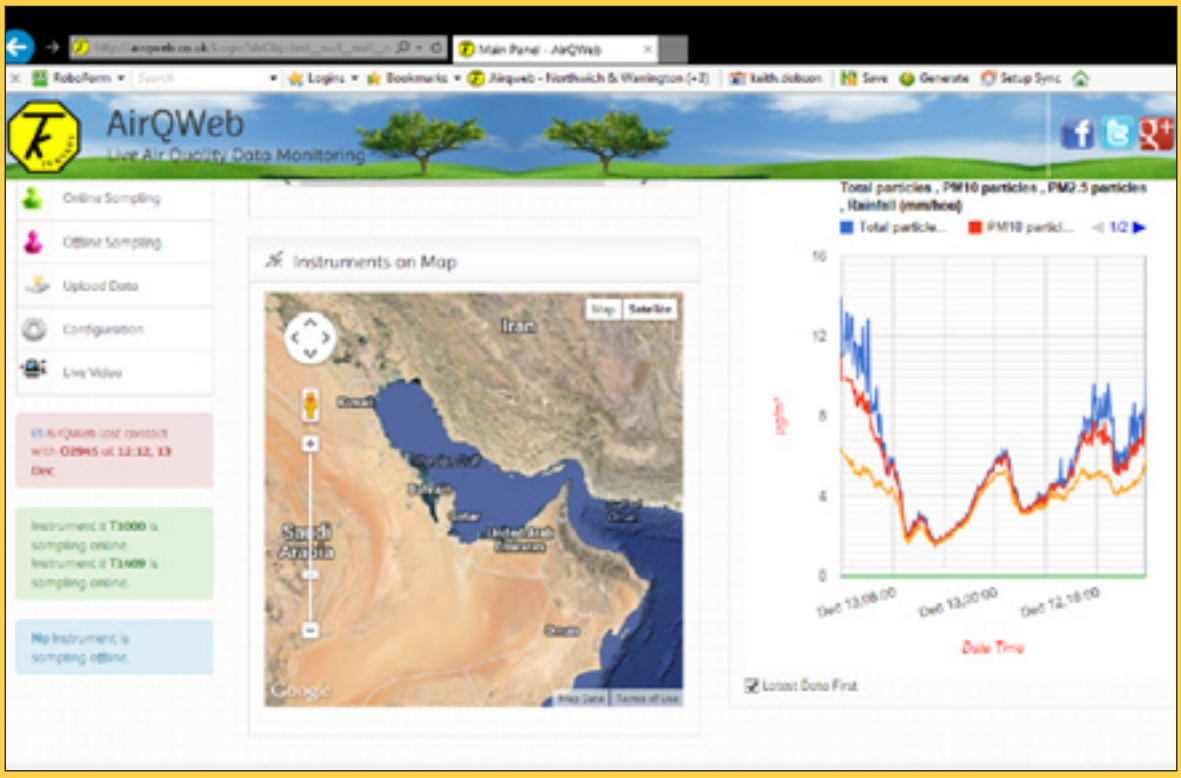
AirQWeb & AirQApp

Units fitted with a web router can be accessed via the internet (M2M simcard with 2GB data, fixed or dynamic public IP address, required).

Also via smartphone app, instant alerts can be sent to your phone before a likely exceedance breach occurs.

Alerts can be set for wind direction and wind speed, as well as dust levels.

A remote pan/tilt rotate IP camera can be added when connected via the web.



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Feature	Description	TOPAS	OSIRIS	DUSTMATE
Standard inlet	TSP (1mm stainless mesh)	✓	✓	✓
Heated inlet	Heating to 60°C	✓	✓	•
Detector	Turnkey laser nephelometer	✓	✓	✓
Environmental mode	TSP, PM10, PM2.5, PM1.0	✓	✓	✓
Workplace mode	Inhalable, thoracic, respirable	✓	✓	✓
Measurement range	0 to 6000 micrograms per cubic metre	✓	✓	✓
Detection limit	0.01 micrograms per cubic metre	✓	✓	✓
Indicator range	0 to 60mg/m^3 without particle sizing	✓	✓	✓
Particle size range	0.5 to 20 micron diameter	✓	✓	✓
Particle counting mode	Three size channels in particle per cc	✓	✓	✓
Flow rate	600cc per minute	✓	✓	✓
Reference filter	25mm diameter GFA circle	✓	✓	✓
Operating temperature	-5°C to +50°C	✓	✓	✓
Security	Password protection	✓	✓	✓
Alarm	Siren, text to cellular phone, visual beacon and email	✓	✓	×
Display	Two line alphanumeric with backlight	✓	✓	✓
Data storage	Internal with separate battery backup	128k byte	128k byte	32k byte
Averaging period	1 second to 4 hours	✓	✓	✓
Battery	Sealed lead acid, rechargeable	n/a	Internal 6v 2.8 AH	Belt pack 6v 1.2 AH
Sampling current drain	Including heated inlet and backlight	1.2A	1.2A	200mA (without heated inlet)
External power pack	80 to 260v AC input, weatherpoof	•	•	×
Meteorological inputs	Wind speed and direction, rainfall, temperature and humidity	✓	✓	×
Other logging inputs	Two 0 to 5 volt analogue inputs	✓	✓	×
RS232 I/O	9600 baud via PC-link	✓	✓	✓
Telemetry I/O	1200 baud opto isolated	✓	✓	×
Analogue output	0 to 4 volt analogue of TSP or PM10 channel, 12 bit resolution	•	•	×
Wall or lamppost box	Lockable steel	✓	✓	×
Case protection	To IP66 (excluding inlet and exhaust)	✓	✓	Carry case
Dimensions	External dimensions in mm	400 x 300	260 x 160 x 150	160 x 100 x 100
Weight	Instrument and enclosure approximate weight in kg	12kg	11.8kg	1.2kg
Power options	Solar, wind, mains and battery	✓	✓	Mains and battery only

✓ Fitted as standard × Not available • Available as option

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