# Infrastructure

## Construction Management Framework Plan

Project: Hoyland

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**Title** Construction Management Framework Plan

**Client** Newlands Developments

**Project** Hoyland West

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## 1.0 Purpose of the Construction Environmental Management Plan (CEMP)

This Construction Environmental Management Plan (CEMP) sets out the overarching systems and controls that will be adopted during the construction of the Hoyland West scheme to minimise any adverse environmental impacts in accordance with Construction Good Practice. The CEMP provides the framework which all construction activities will work too, with individual activities having their own specific Risk Assessment and Method Statement.

**Obligations, Compliance and Enforcement**

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

Any non-conformance or infringement of the 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 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

The proposed work consists of the following:

- Bulk earthworks to form three development platforms
- Creation of a surface water attenuation pond
- Sitewide surface water drainage linking the attenuation pond to the development platforms
- Sitewide foul sewer including a foul sewer pumping station
- Construction of a Link Road between Birdwell Roundabout and Sheffield Road
- Construction of a new roundabout on Sheffield Road
- Reconfiguration of Tankersley Lane junction
- Sitewide Infrastructure Landscaping

## 3.0 General Site Management

**Roles and Responsibilities**

The site wide coordination and implantation of the principles established in this CEMP, will be the responsibility of the Developer's 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 CEMP.

The key contacts are:

- Developer – Newland Developments – Ken Brown
- Project Manager – HA Goddard & Sons – Peter Goddard
- Ecological Consultant – fpcr
- Landscape Consultant – BCA
- Engineering Consultant – RPS – Pete Adcock
- Principal Contractor – Winvic Construction – Mark Skelton

- Principal Designer – tbc
- Site Manager – Winvic Construction
- Environmental Manager – Winvic Construction – Ian Goodhead
- Health and Safety Manager – Winvic Construction – Ian Goodhead

The key firms and individuals may change as the scheme develops.

**Communications**

The effective implementation of the CEMP 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 CEMP, 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 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 Hoyland West will be strictly controlled. All vehicles to Hoyland West will be instructed to leave the M1 at Junction 36 and enter and leave the site from existing access of Birdwell Roundabout. Directional signage will be erected from the M1. Using this existing access will minimise the impact on the local highway network.

Barred Routes

Access to the site will not permitted from Sheffield Road or Tankersley Lane.

Monitoring

All workers and suppliers will be advised on a regular basis that they should not use any of the roads not designated to travel to and from the site. The movement of HGV's will additionally be visually monitored on an occasional basis by the site gang person.

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.

Access to and departure from Hoyland West by construction delivery vehicles shall not be permitted before 07.00 hours and after 19.00 hours.

### 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, Highways England and the Police.

Traffic management will be for three different activities:

- Construction of the new Roundabout on Sheffield Road
- Reconfiguration of Tankersley Lane
- Crossing of Tankersley Lane under traffic signals whilst completing bulk earthworks.

Whilst moving earthworks material across Tankersley Lane it will be necessary to use traffic management. The traffic management will consist of two-way temporary traffic signals which will operate under Vehicle Actuation, which will ensure priority to vehicles using Tankersley Lane. A temporary Pelican crossing will be installed across the footpath so that pedestrians can pass safely. Furthermore, an operative will be stationed at the crossing point to ensure the cleanliness of the carriageway. The traffic management will be removed outside of working hours.

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

Construction work within the development site will be confined to the following:

07:00 -19:00 hours Monday to Friday,
07:00 -16:00 hours Saturday,

No works will be undertaken on Sundays or public holidays, save in exceptional circumstances only and with prior notification to the LPA.

Any changes to the above working hours will also be agreed with the local Environmental Health Officer.

## 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 work to ensure that hazardous or polluting substances do not cause harm to surface water systems, landscaping and associated ecology.

Additional settlement and control ponds will be provided as necessary during a component to prevent

pollution entering the existing water courses.

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

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 receptor is Hoyland Common, three monitoring stations will be established on the eastern boundary of Hoyland West.
- 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 Developers 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 eastern boundary of Hoyland West.

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 Hoyland West along Tankersley Lane and Sheffield Road. The western boundary along the M1 corridor is not considered sensitive.

**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 Developers 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 Hoyland West.

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 $PM_{10}$ 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 contractions shall be adopted to minimise dust generation whenever possible.

**Additional Mitigation Measures**

- All haul roads shall be damped down,
- The site speed limited 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 measure 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

It is proposed to locate the Site Compound for the Infrastructure work immediately off Birdwell Roundabout. The access to the site compound will be controlled by a gate person.

The site compound will be 75m x 75m, and will include the site offices, car parking and material storage. The perimeter of the site compound will be secured with 1.8m high chain link fencing. Where elevation of the site compound that is parallel to Birdwell Roundabout will have 2.0m solid timber hoarding.

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

The site office will be double stacked temporary accommodation, with the first floor containing all the welfare facilities (canteen, toilets and drying rooms) and the open plan office on the second floor.

The car parking area will be in the northern half of the site compound with a bituminous surfacing and capacity to park 75 vehicles.

The southern half of the site compound will be used to storage materials. The maximum height of material storage will be two pallets or 2m, whichever is lower. Bulk loose materials (aggregates, ready mixed concrete) will be delivered directly to the point of use.

Materials that are affected by weather conditions will be stored in steel containers stores.

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.

When the work is complete the site compound will be removed, and ground will be engineered to become part of the development platform.

## 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

Indicative locations of Contractor Facilities are shown in Section 9.0.

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 dirt escapes onto Birdwell Roundabout, 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**

As no protected species have been found on site, the Contractor hasn't designed mitigation measures. However, if the contractor does find any protected species whilst completing the work, the work will be stopped immediately, and mitigation measures will be designed.

## 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 surface water management plan before any works in a phase commences and the contractor shall thereafter carry out his works in accordance with the approved plan.

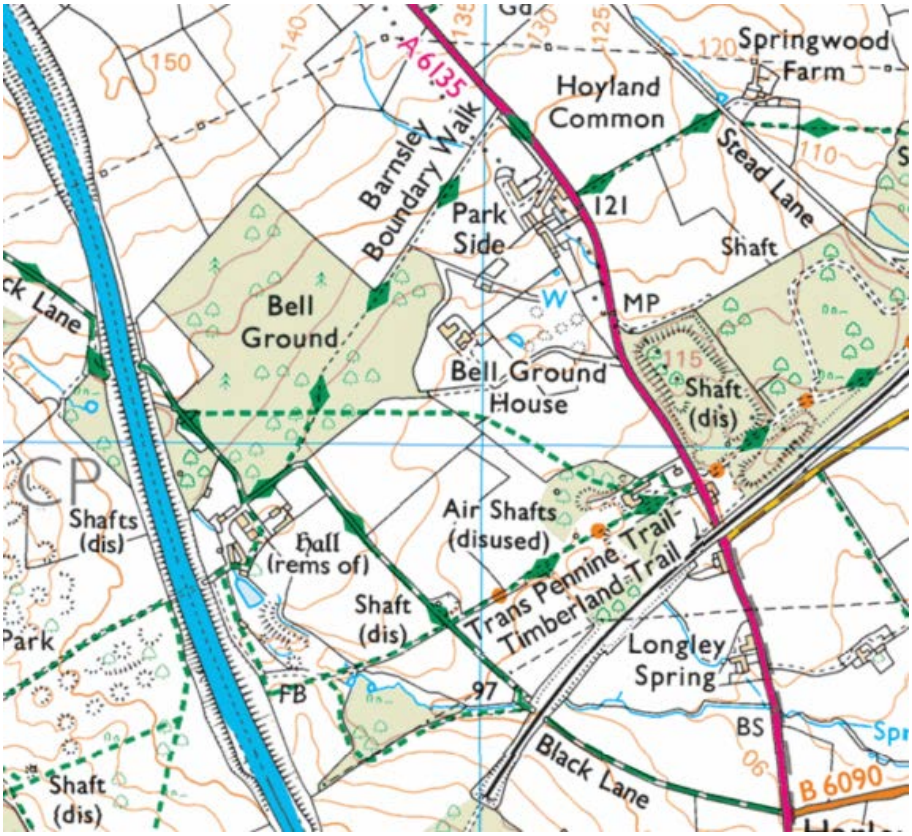
Measures shall be adopted in accordance with PPG5, particularly Section 2.2b (balancing lagoons) and 2.2c (filtration) and CIRIA Report C532 "Control of water pollution from construction sites".

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:



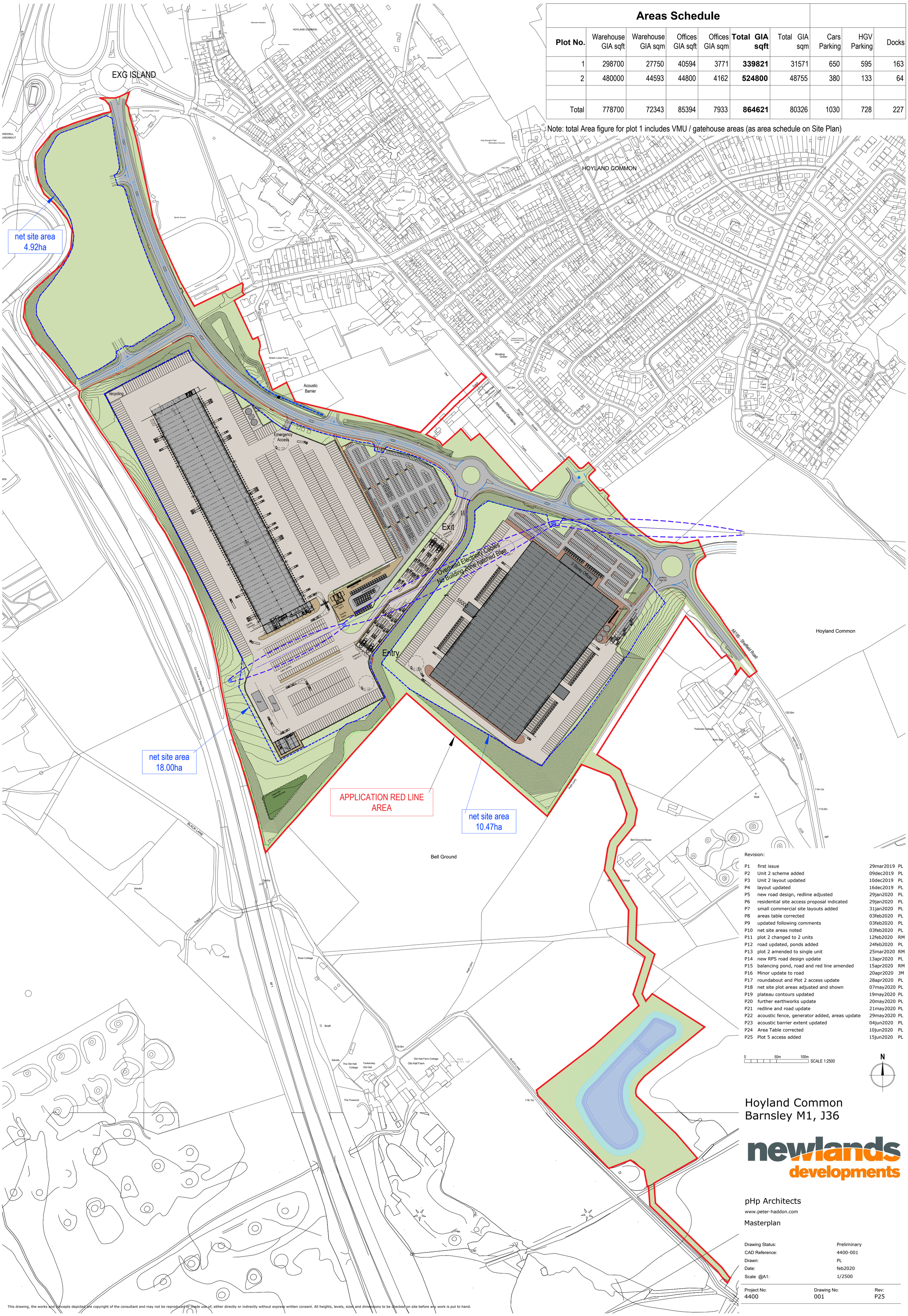

These existing PRoW will remain open throughout the duration of the work. Where the works cross over or run parallel to a PRoW, the PRoW will be securely fenced, and the workforce will be given Toolbox Talks on the management of PRoW.

## Appendix 01 – Masterplan

## Areas Schedule

| Plot No. | Warehouse GIA sqft | Warehouse GIA sqm | Offices GIA sqft | Offices GIA sqm | **Total GIA sqft** | Total GIA sqm | Cars Parking | HGV Parking | Docks |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 298700 | 27750 | 40594 | 3771 | **339821** | 31571 | 650 | 595 | 163 |
| 2 | 480000 | 44593 | 44800 | 4162 | **524800** | 48755 | 380 | 133 | 64 |
| | | | | | | | | | |
| Total | 778700 | 72343 | 85394 | 7933 | **864621** | 80326 | 1030 | 728 | 227 |

Note: total Area figure for plot 1 includes VMU / gatehouse areas (as area schedule on Site Plan)




Revision:

| | | | |
|---|---|---|---|
| P1 | first issue | 29mar2019 | PL |
| P2 | Unit 2 scheme added | 09dec2019 | PL |
| P3 | Unit 2 layout updated | 10dec2019 | PL |
| P4 | layout updated | 16dec2019 | PL |
| P5 | new road design, redline adjusted | 29jan2020 | PL |
| P6 | residential site access proposal indicated | 29jan2020 | PL |
| P7 | small commercial site layouts added | 31jan2020 | PL |
| P8 | areas table corrected | 03feb2020 | PL |
| P9 | updated following comments | 03feb2020 | PL |
| P10 | net site areas noted | 03feb2020 | PL |
| P11 | plot 2 changed to 2 units | 12feb2020 | RM |
| P12 | road updated, ponds added | 24feb2020 | PL |
| P13 | plot 2 amended to single unit | 25mar2020 | RM |
| P14 | new RPS road design update | 13apr2020 | PL |
| P15 | balancing pond, road and red line amended | 15apr2020 | RM |
| P16 | Minor update to road | 20apr2020 | JM |
| P17 | roundabout and Plot 2 access update | 28apr2020 | PL |
| P18 | net site plot areas adjusted and shown | 07may2020 | PL |
| P19 | plateau contours updated | 19may2020 | PL |
| P20 | further earthworks update | 20may2020 | PL |
| P21 | redline and road update | 21may2020 | PL |
| P22 | acoustic fence, generator added, areas update | 29may2020 | PL |
| P23 | acoustic barrier extent updated | 04jun2020 | PL |
| P24 | Area Table corrected | 10jun2020 | PL |
| P25 | Plot 5 access added | 15jun2020 | PL |

0 50m 100m SCALE 1:2500

N

# Hoyland Common
# Barnsley M1, J36

newlands developments

pHp Architects

www.peter-haddon.com

Masterplan

| | |
|---|---|
| Drawing Status: | Preliminary |
| CAD Reference: | 4400-001 |
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| Date: | feb2020 |
| Scale @A1: | 1/2500 |

| Project No: | Drawing No: | Rev: |
|---|---|---|
| 4400 | 001 | P25 |

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## Appendix 02 – Noise and Air Quality

Turnkey Instruments Ltd

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# 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.

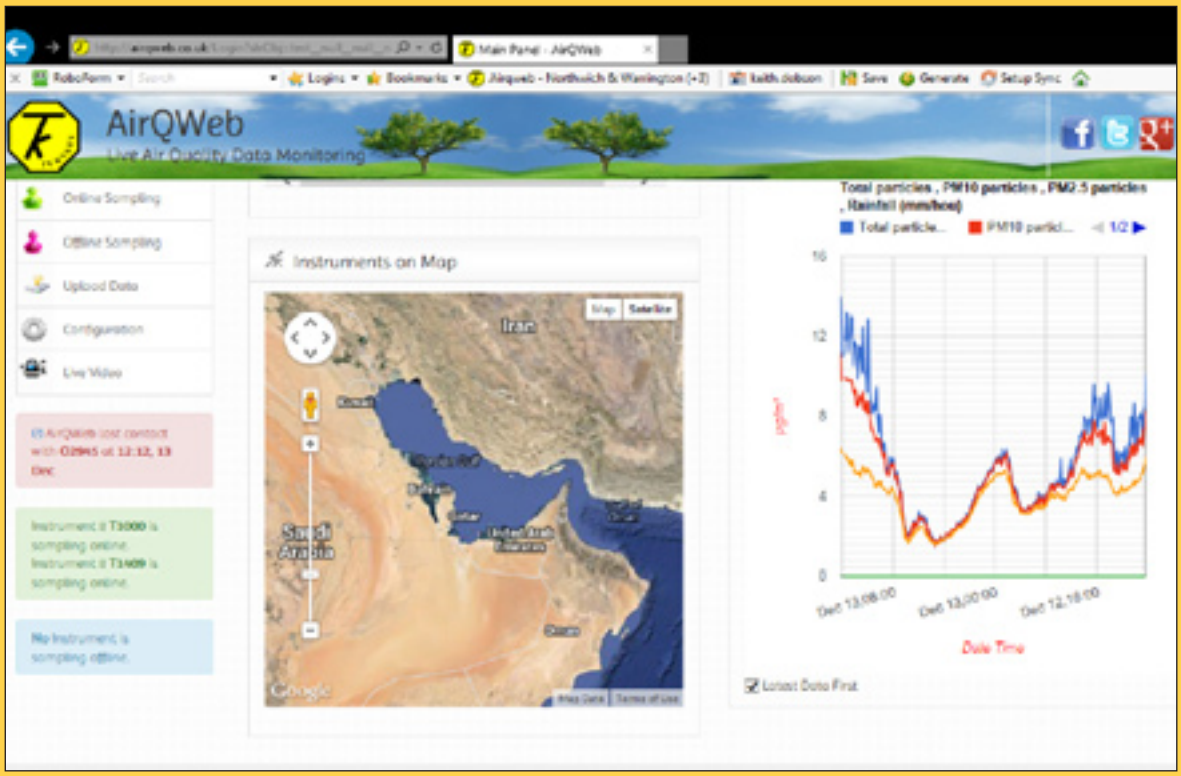
### AirQWeb & AirQApp

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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# **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.

Turnkey® is a trademark registered with the EU, USA and WTO.

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