



THAKEHAM

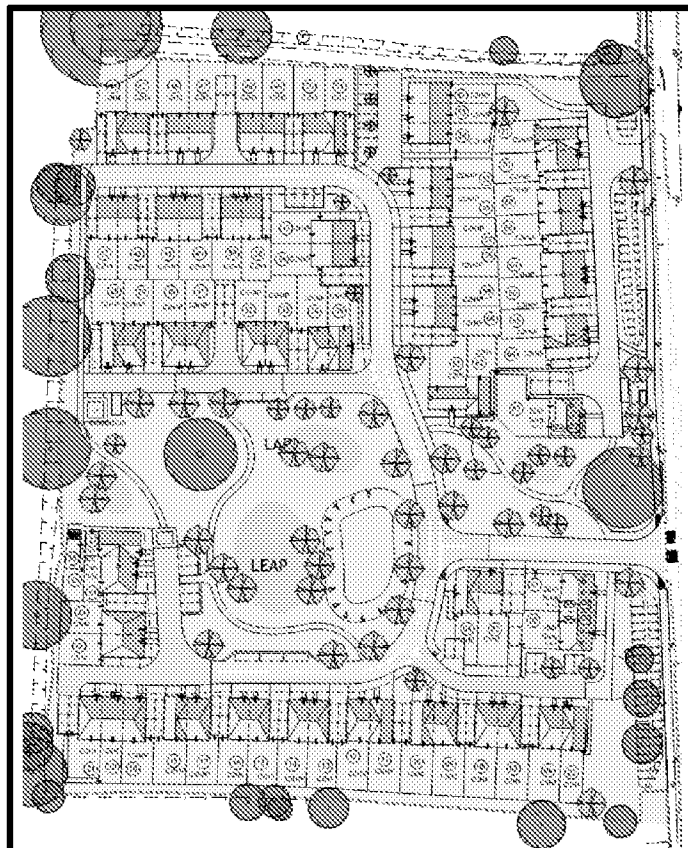
PARTNERSHIPS

In association with Southern Housing Group

Construction Environment Management Plan - REV D

Lidsey Road, Woodgate, West Sussex

April 2022



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1. Introduction

1.1 General

This Construction Environmental Management Plan (CEMP) is for the approved development comprising of the construction of 71 no. units and all associated infrastructure including highway works, utilities, drainage, and landscaping as permitted under planning permission from Arun District Council reference: AL/20/21/PL at the Land at Wings Nursery, Lidsey Road, Woodgate, PO20 3SU.

1.2 Planning Condition No.14

The planning application for “Demolition of Wings House & erection of 71 No. replacement dwellings (70 net new dwellings), access arrangements, sustainable drainage measures, public open space, landscaping & all other associated works” was granted subject to a number of conditions including Condition 14 which states:

“No development shall take place, including any works of demolition, until a Construction & Environmental Management Plan has been submitted to and approved in writing by the Local Planning Authority (who shall consult with WSCC Highways and the Councils Environmental Health Officers). Thereafter the approved Plan shall be implemented and adhered to throughout the entire construction period. This shall require the applicant and contractors to minimise disturbance during demolition and construction and will include (but not limited to) details of the following information for approval:

- *the phased programme of construction works;*
- *the means of access and road routing for all construction traffic associated with the development;*
- *provision of wheel washing facilities (details of their operation & location) and other works required to mitigate the impact of construction upon the public highway (including the provision of temporary Traffic Regulations Orders);*
- *details of street sweeping;*
- *construction vehicle delivery times;*
- *details of a means of suppressing dust & dirt arising from the development;*
- *a scheme for recycling/disposing of waste resulting from demolition and construction works (i.e. no burning permitted);*
- *details of all proposed external lighting to be used during construction (including location, height, type & direction of light sources and intensity of illumination);*
- *details of areas for loading, unloading parking and turning of vehicles associated with the construction of the development;*
- *details of areas to be used for the storage of plant and materials associated with the development;*
- *details of the temporary construction site enclosure to be used throughout the course of construction (including access gates, decorative displays & facilities for public viewing, where appropriate);*
- *contact details for the site contractor, site foreman and CDM co-ordinator (including out-of-hours-contact-details);*
- *details for the arrangements for the public engagement/consultation both prior to and continued liaison during the construction works;*
- *details of any temporary traffic management that may be required to facilitate the development including chapter 8 traffic signage;*
- *measures to minimise the noise (including vibration) generated by the construction process to include hours of work, proposed method of piling for foundations, the careful selection of plant and machinery and use of noise mitigation barrier(s).”*

Details of how measures will be put in place to address any environmental problems arising from any of the above shall be provided. A named person shall be appointed by the applicant to deal with complaints, shall be available on site and their availability made known to all relevant parties.

This CEMP shall also include reference measures to minimise disturbance to bats and other wildlife during construction including the briefing of site operatives, monitoring by an ecologist and either securing or providing a means of escape for all deep pits/ trenches/ holes present on the site at night-time.

1.3 Objectives

The purpose of a CEMP is to outline how a construction project will avoid, minimise or mitigate effects on the environment and surrounding area. It is a 'live' document that is to be reviewed and updated at regular intervals throughout the project life cycle.

The CEMP is not intended to be used to discharge planning conditions (other than Condition 14), nor is it intended to be a detailed summary of specialist disciplines, such as drainage or ecology. It is therefore important to cross reference the supporting documents that were submitted as part of the planning application with this document. The CEMP will be provided to all contractors and suppliers at the procurement stage and kept on site to enable the pertinent chapters to be reinforced to each operative during the site induction and toolbox talks.

1.4 Site Description, Current & Surrounding Land Uses

The site is located in the southern corner of the suburban area of Woodgate, West Sussex. The site is bounded to the east by land in current use by nurseries, defined by a line of mature planting, with an access road to the nurseries running along the northern boundary of the site defined by fencing. Lidsey Road (A29), a main arterial road into Woodgate from Shripney, runs along the western side of the site between the site and a residential area including Woodgate Road, Woodgate close and Oak Tree Lane. The south perimeter of the site constitutes existing field boundaries provided by mature hedgerows and trees separating the site from a small development.

The development site is predominantly a greenfield site, composed of a roughly rectangular grassed field, which is generally flat and level. On the eastern side of the site is a single large two storey detached dwelling with garage and indoor swimming pool with gardens on the eastern and western sides. This property is vacant and has been for a number of months.



Figure 1: Site Location Plan

2. Construction Environmental Management Plan

2.1 Project Description and Off-Site Works

The development will consist of 71 no. dwellings made up of 1, 2 & 3 bedroomed houses and flats. The accommodation is a mixture of market, affordable/social rent and shared ownership accommodation. The scheme is to be built using timber frame construction methods.

There will be a new site access into the development from Lidsey Road in the form of new bellmouth junction and a separate vehicle crossover. These works are subject to a Section 278 Agreement and will form the permanent construction and end user access to the development. A Temporary Traffic Regulation Order (TTRO) will be utilised following the discharge of the CEMP document in conjunction with the Section 278 Agreement. In order to enable the construction of the site access in advance of Section 278 Technical Approval, a Section 184, Temporary Access Licence will be sort. Off-site installation of the new electric main to the site and off-site connections for gas, water and BT will be undertaken under statutory undertaker powers. This will be undertaken by contractors whose supervisors and operatives hold the necessary New Roads and Street Works Act (NRSWA) licences.

2.2 Project Roles, Responsibilities and Contacts

Thakeham Partnerships Limited (hereafter referred to as 'Thakeham Partnerships') has overall responsibility for the development and will have a dedicated on-site management team consisting of a Project Manager, Site Managers, Finishing Foremen, and Materials Manager, all of whom will be supported by Thakeham Partnerships' Head Office staff. There will be a dedicated Site Management Team responsible for Construction Traffic Logistics throughout the scheme. This will also cover parking management to ensure contractors are parking in permissible locations on site.

The Site Managers, in conjunction with the site gateman/banksman will ultimately be responsible for the management of all deliveries to and from site in accordance with the

restraints outlined in Section 2.10. They will be supported by the project buyer and commercial manager who will ensure that all suppliers and subcontractors are informed of the requirements and restrictions imposed by the CEMP.

The Site Managers will manage the traffic logistics for the duration of the construction period. This will include liaising directly with all hauliers and their drivers to ensure a smooth flow of construction traffic and avoid congestion of the surrounding road network.

In tandem with Thakeham Partnerships, there will be a dedicated civil engineering contractor assuming responsibility for the Section 184 and Section 278 and highway works. This will be a contractor who is familiar with undertaking such works and whose supervisors and operatives hold the necessary NRSWA licences. Contact details for this contractor will be displayed on signs in the locality of the roadworks.

2.3 Health & Safety Policies and Responsibilities

Thakeham Partnerships will carry out all operations on this development in full compliance with all relevant Health and Safety Regulations, which includes making the statutory notification to the Health and Safety Executive (HSE) and submitting the F10 form.

CDM Regulations place a statutory obligation for all construction activities to identify key roles, namely the Client, Principal Designer, and Principal Contractor these roles can vary and are confirmed to the HSE via 'F10' notifications.

All site operations will receive careful planning and be carried out in a safe and professional manner with due consideration to the surrounding environment. Site rules will be issued to all site personnel as well as being displayed in the site offices and notice boards. The site rules will form part of the inductions that are carried out by the Site Managers with all site personnel and gives guidance on the required behaviour and conduct as well as environmental considerations.

The Construction Phase Health and Safety Plan will be drawn up by the Site Management Team. This will then be updated as the development progresses.

A Traffic Management Plan will be implemented and amended to suit the progress of the site. The plan will include both pedestrian and vehicle routes to and from the site for all site operatives and deliveries and will provide safe access. A copy of the Traffic Management Plan is included in Appendix A.

All contractors employed by Thakeham Partnerships will attend a pre-contract meeting, during which their health and safety documentation will be reviewed and amended as necessary. These meetings are fully documented.

All operations will be carried out in accordance with health and safety legislation and good practice, with the necessary safety signs and notices being displayed throughout the site.

2.4 Constraints and Restrictions

There is a HV Underground Mains Electric Cable present running through the centre of the development site. Along the eastern boundary on the development side runs a foul water sewer. These services shall remain through the construction programme and will be included on as-laid drawings issued to all contractors carrying out works breaking ground or applying large loads on the area, such as cranes. It will be the responsibility of the site management team to check the grounds daily before work commences, ensure controls are implemented

to minimise risk of striking existing services, and to ensure that all works are being carried out in accordance with Thakeham Partnerships, Permit to Break Ground Procedure.

A railway line runs east to west approximately 80m north of the development site. Before commencement on site, Thakeham Partnerships will notify Network Rail's Asset Protection and Optimisation Team (ASPRO) informing them of the planned commencement date and the scope of works to be undertaken. It not foreseeable that works on site should affect the railway line, however in the event that the ASPRO deems any works to be of high risk, Thakeham Partnerships shall work in conjunction with them to mitigate any potential impacts.

2.5 Considerate Contractor, Public Engagement, and Advance Notifications

The site will be registered on the Considerate Constructors Scheme (CCS) and local residents and businesses will be kept informed of progress in the form of regular letter drops and visits if appropriate. The resident neighbour letters will contain details of Thakeham's website where there will be a 'contact us' tab to allow the public to consult directly should any concerns arise. In addition, a Considerate Constructors sign will be displayed at the site entrance with contact details for the Project Manager. Site visits by local school will be encouraged to engage with the wider community.

Thakeham Partnerships will appoint a Resident Liaison Officer whom for the duration of the project will keep local residents and businesses informed of progress and forthcoming work and ensure that residents' concerns are dealt with in a caring and timely manner. Further to this, the site team will issue a quarterly newsletter to the surrounding residents to inform of progress on site and to maintain an ongoing relationship throughout the development programme. Prior to works commencing on site, newsletters will be issued by the Contract's Manager to the surrounding local residents, informing them of any activities occurring on site and dates of interest. Once a site hoarding has been erected around the perimeter of the site, information boards will be installed, these will aim to share the vision, values and goals for the site with the local community through site maps and bulletins.

Off-site road works will be pre-planned in association with the Highway Authority and carried out under licence using approved traffic management contractors. Motorists and the public will be informed of planned works by way of information boards placed on the roadside verges which will advise the public of the duration of the works and emergency contact details.

2.6 Indicative Programme/Site operations

It is foreseeable that the initial works undertaken at the development site will entail Section 278 works at Lidsey Road to create the two new bell mouth junctions on to the development and ultimately the end user entrance/ exit to the site. In addition, these works will also include relocating the existing bus stop on Lidsey Road. The southerly bell mouth will be the construction site entrance with the northerly bell mouth used solely by the end users upon handover of Phase 3. In the event S278 works are delayed, the existing entrance serving Wings House will be utilised for access/ egress. These works are scheduled to start within the first 6 months of the development and will last approximately 6 weeks. The first on site works will constitute the construction of the foul & surface water drainage system, including the attenuation pond, for Phase 1, The main estate roads shall then be installed, providing clean and safe access site wide. Laying of the service mains will follow shortly afterwards, this also includes the provision of a new electricity sub-station. Demolition of Wings House and initial works to Phase 1 will commence in the late Spring/Summer 2022, the exact demolition date will be dictated by the migration of the bats currently residing within the property and the receipt of Natural England Licence. Excavated material will be stockpiled on site until the roads are formed. There will be no encroachment of the Tree Preservation Order (TPO) nor the site boundary, every precaution will be taken to manage excess materials on site and mitigate the

impacts of said activity on the surrounding neighbours. Following the initial infrastructure and groundworks, the next stage will be the mobilisation of the site setup, this will constitute the delivery of site offices and other associated infrastructure to establish a site compound.

The site consists of 71 units, these will all be constructed using Timber frame construction methods, employing the use of mobile cranes. the above process will repeat on a phase-by-phase basis as the development site progresses over time.

The development site has been split into nine phases as shown in figure 2. Phase 1 comprises the sales units (show home) and associated sales area with circa seven plots to be completed thereafter moving north of the site to the eastern side will be Phase 2, with 3,4 & 5 being located to the southeast of the site. Phases 6, 7, 8 & 9 are located on the northeast of the site. It is intended that the development site will be opened up to residents and the general public on a phase-by-phase basis, the site compound and associated infrastructure will move accordingly, as illustrated in appendix C. A draft construction programme is included within appendix D.

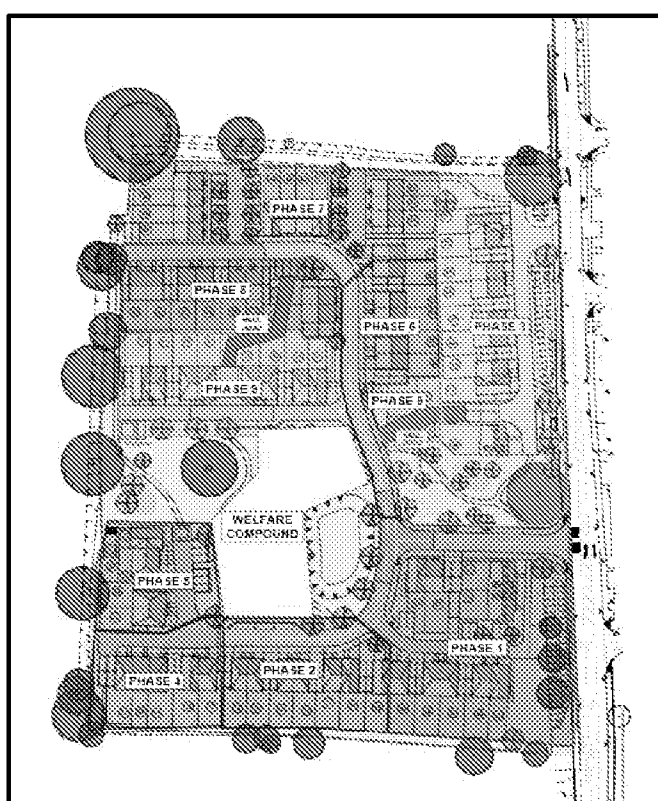


Figure 2: Construction Phase Plan

2.7 Working Hours

Condition 5 of the planning permission stipulates construction working hours, works will therefore only be carried out in accordance with the requirements of Condition 5.

Measures detailed under 2.14 will be implemented, and any works appropriately planned and managed to ensure no adverse impacts to neighbouring residents.

2.8 Construction Site Access Arrangements

Vehicular access to the site will be achieved from Lidsey Road which runs along the east of the site in a south, north alignment. The site access will consist of a new bell-mouth junction to the east of the site. Appropriate signage will be implemented to make construction traffic aware of the site's location and speed restrictions on site. Further, 'no access for construction traffic' signs will be installed where appropriate to manage the flow of traffic in the surrounding area.

All roads approaching the site are subject to 30mph speed limits.

In addition, all parties will be under instruction to avoid, as much as reasonably practicable, peak network hours.

A Site Route Plan is provided in appendix B.

2.9 Public, Visitor, Sales, and End User Access Arrangements

All vehicles will enter and exit the site in forward gear, where feasible, to prevent excess manoeuvring within the highway and appropriate turning areas will be provided on site. In the event that it is necessary for a vehicle to reverse into or out of the site, a qualified banksman will be in attendance to assist.

Visitor/end user traffic will also enter the site from the new estate access road off Lidsey Road

A Traffic Management Plan, which will be developed throughout the project, will clearly identify the location of the sales area and highlight the means of segregation between the general public and construction operatives/traffic.

2.10 Off-Site Construction Traffic, Deliveries, and Signage

Thakeham Partnerships will have responsibility for ensuring delivery instructions are passed down to all subcontractors and suppliers; such instructions will include delivery routes, site rules and restrictions on delivery times. Thakeham will endeavour to keep site deliveries out of times of peak traffic volume, this includes the hours of 08:00 – 09:00 and 16:00 – 17:00.

Local waste collections are undertaken weekly on a Thursday, with recycled waste collected fortnightly on Thursdays. The Site Management Team will check collections online and organise deliveries of materials and plant to avoid such times and therefore congestion on the local road network.

Once the new site access from Lidsey Road is completed, this will form the construction traffic access, the site entrance gates will be erected at the new junction. A gateman will be employed at the main site entrance gates to control access for deliveries. Wheel washing shall take place as and when required for all construction traffic exiting the site, this will be in the form of a diesel-powered Jet wash located at the site entrance. This will be in place straight after road formation. We estimate the timeframe for this being between 7 and 8 weeks (prior to any soil removal), this will ensure that all vehicles exiting the site are cleaned and do not discharge mud onto the highway. Throughout the course of the development, a road sweeper will be deployed, as and when necessary, to ensure the condition of the existing built environment is maintained.

Prior to any construction activities commencing on site, a conditions survey will be undertaken of the surrounding road network by Thakeham Partnerships in conjunction with a representative from the area's Highways Office.

To ensure that HGV vehicles do not park on the public highway, a holding area will be created on site to accommodate a minimum of two haulage vehicles, the location of this will be confirmed in due course (This is indicated in the Traffic Management Plan in Appendix A).

Estimated HGV movements.

Whilst the access road off Lidsey Road is constructed, all excavated material will be stored on site and it therefore there will be no soil removal during the first stage of the project. The only HGV movements during this period will be plant and accommodation deliveries, expected to consist of approximately 10 a week.

Surplus Soil Removal.

We estimate that 50% of the expected soil movement off site will occur during weeks 4 to 70. Allowing for removal approximately 5 days a week.

The remaining 50% of surplus soil removal will be removed progressively over a 70-week period, we would expect approximately 5 loads to be removed per week.

Brick, Block & Mortar Deliveries

It is anticipated that approximately 250 deliveries of brick and blocks will be required throughout the project. This will occur from around week 15 and take place over a 14-month period at an average of approximately 3 deliveries per week.

Mortar silos will be utilised, and deliveries of dry mortar will be via a rigid tanker. It is anticipated that approximately 40 deliveries will be required at least in weekly intervals.

Timber Frames

There will be 71 no. timber frames to be delivered to site across a 6-month period, it is expected they will be transported on a rigid arctic lorry at around two/three frames per week, equating to around 30 deliveries.

Timber.

Approximately 40 deliveries of timber are expected over a period of 30 weeks with the first delivery anticipated in week 15. This equates to an average of at least 1.3 deliveries per week.

Roof Tiles.

Approximately 35 deliveries of roof tiles are expected over a period of 19 weeks with the first delivery anticipated in week 10. This equates to around 2 deliveries per week.

Mobile Cranes.

We estimate that there will be approximately 30 cranes operations required throughout the project for installation of timber frames and trusses. The first is expected in week 13 and then at least weekly thereafter.

Sundry Deliveries.

In addition to the above deliveries, we expect sundry HGV deliveries of other materials to take place throughout the project up to week 55 with approximately 1.5 deliveries per week.

2.11 On-Site Construction Traffic, Parking, Pedestrians & Workers Travel Plan

The site compound will encompass parking for site personnel and operatives; however, in the event operative parking on site becomes limited, this document will be reviewed, and the traffic management plan adapted to suit the needs of the site.

Thakeham Partnerships encourages all its contractors to vehicle share where possible to minimise off site traffic and parking and this requirement is discussed with each contractor at the Pre-start Meeting. Such agreements will be altered to comply with prevailing COVID-19 restrictions and will be monitored in accordance with Government guidelines.

Traffic routes will be communicated to suppliers and subcontractors via the pre-commencement meetings and order documentation. A Traffic Management Plan will be developed on commencement of the project and will be displayed in the site offices, this plan will be adhered to by all those attending the site.

All site operatives and visitors to the project will be site inducted and briefed on the traffic management and pedestrian routes and updated monthly through sub-contractor meetings. All pedestrian routes will be segregated from construction traffic with the use of designated crossing points, barriers and signage to give clear direction.

2.12 Location of Site Offices, Material Storage, and Construction Plant

The main site compound including material storage, project offices and welfare facilities will be located in an area centrally to the phase under construction, the compound and material stores will be moved to suit the various stages of the development as indicated in Site Logistics Plan in Appendix C. The site compound shall be located east of the attenuation basin, this shall include welfare and offices, sub-contractor car park and material storage. Additional material shall be stored to the North of the site.

The site compound will consist of double stacked cabins which should be established within 6-8 weeks of works commencing on site. LED Security lighting will be PIR activated and will be installed in such a way as to avoid causing any light disturbance to the surrounding residents. A CCTV security system will be installed to prevent / deter unauthorised access to the site (Appendix C)

All materials will be stored on site in designated areas and in line with the manufacturers' instructions (Appendix C). Materials will be off loaded from delivery vehicles and then moved to the appropriate areas by mechanical means where necessary/appropriate. Any vehicle movement will be in line with the traffic management plan and the designated site routes.

Designated locations will be positioned for construction plant and will include refuelling points and bucket changing areas.

2.13 Surface Water Run-Off Control, Groundwater, and Drainage

During the construction phase, the greatest potential effects on the water environment originate from construction-derived pollution i.e., sediment, oil, chemicals and cement products.

The provision of jet washing equipment for site plant prevents the tracking of mud onto the public highway and subsequently into the off-site surface water drainage systems. The gateman will be responsible for ensuring that no vehicle exits the site in a condition that will cause waste to be deposited onto the highway. A forklift with a road brush attachment and self-contained water bowser and waste collector will be used to regularly clean the site during

periods when a forklift is required on site. Where necessary, this will be supplemented by road sweeps by an external contractor.

A number of measures will be employed during construction to prevent the release of suspended sediments including:

- Site access points will be regularly cleaned to prevent build-up of dust and mud
- Earth movement will be controlled to reduce the risk of silt combining with the site runoff
- Measures will be taken to protect controlled waters from the release of oil and hydrocarbons. Wherever possible, static plant and machinery will have drip trays beneath oil tanks/engines/ gearboxes/ hydraulics which will be checked and emptied regularly and correctly disposed of via a licensed waste disposal operator
- Oils and hydrocarbons will be stored in bunded tanks at designated locations with specific measures to prevent leakage and release of their contents, including the siting of the storage area away from the drainage system on an impermeable base. There is a risk of accidental spillage of oils and fuels so an emergency spillage action plan will be produced, which site staff will have read and understood. Onsite provisions will be made to contain a serious spill or leak through the use of booms, bunding and absorbent materials
- Several onsite precautions will be taken to reduce the potential magnitude of a concrete and cement product leak. These include pre-mixing the majority of concrete used and delivering it from an offsite source, thereby negating the need to mix concrete onsite and reducing the creation of alkaline wastewater onsite. Wherever possible, any mixing. Any handling of wet concrete required onsite will be undertaken in designated areas; which will be used for any washing down or equipment cleaning associated with concrete or cementing processes and facilities provided to remove sediment prior to disposal of foul water
- It is proposed that wastewater generated from temporary sanitary facilities will be disposed via tanks in the interim. Once a temporary plumbing system has been instated, they will discharge into the existing foul sewerage network located nearby to the site, therefore minimising pollution risk of untreated effluent discharging to nearby surface waterbodies.

Following the initial reduce level dig, the installation of surface and foul water drainage is the some of the first works to commence on site. In light of this, surface water runoff can be contained and channelled into the appropriate drainage systems.

2.14 Air Quality , Noise and Lighting

Air Quality

During the construction phase, the greatest effects on air quality are expected to result from dust. To mitigate the potential impacts from dust during construction activities, the site Construction Phase Plan has been planned so that machinery and dust causing activities are located away from receptors. Further measures, Thakeham Partnerships will put in place to mitigate the potential impacts from dust during construction activities are set out further in 2.15.

Where possible, the use of diesel or petrol-powered generators and use mains electricity equipment will be avoided. All on-road vehicles comply with Non-Road Mobile Machinery NRMM standards, where applicable and all vehicles are to be switched off engines when stationary.

Thakeham Partnerships will display the name and contact details of person(s) accountable for air quality pollutant emissions and dust issues on the site boundary along with the head office contact information in align with the Considerate Constructors Scheme.

Noise

Prior to commencement on site, a Section 61 Consent will be obtained under the Control of Pollution Act 1974 to outline the methods intended to mitigate the impact of noise during the construction process and minimise disruption to the neighbourhood.

The construction of the development will involve processes and equipment with the potential to cause disturbance to neighbouring residents such as the properties on Lidsey Road, Woodgate Road, Woodgate Close and Oak Tree Lane.

On-site construction activities will not take place between the hours of 6pm – 8am, and not before 8am or after 1pm on Saturdays, or the remaining hours of the weekend without additional consideration to controlling noise or the prior approval of the Local Planning Authority.

Best practicable means (as defined in section 72 of Control of Pollution Act (CoPA) 1974) will be employed at all times and in all areas to minimise noise and vibration emissions from the works. The relevant recommendations for the control of noise and vibration on construction and open sites in the approved Code of Practice BS5228 will be adopted.

In general, the following measures will be taken:

- a. Solid timber hoarding, to areas of construction is to be used where adjacent to sensitive receptors. Consideration to neighbouring residential properties has been given when locating the main site compound.
- b. Hoarding and fencing will be inspected regularly and repaired as necessary.
- c. All handheld and portable equipment where practicable will be electrically powered
- d. All plant and equipment will be maintained in good working order
- e. Plant, when in operation intermittently, will be switched off during periods of inactivity
- f. All vehicles will observe site speed limits
- g. Stationary equipment and plant such as generators will be placed as far as practicable from noise sensitive properties, and where practical in areas benefiting from natural or purpose-built attenuation such as bunding or behind non-sensitive buildings
- h. Delivery of materials and removal of waste from the site will be planned to minimise disturbance to neighbouring properties. Idling of plant, machinery and delivery vehicles will be prohibited when not in use.
- i. Care will be taken when loading and unloading materials to limit impact noise
- j. Vehicles will not be permitted to queue on the road or pavement outside the site access
- k. Vehicle parked within the site, outside working hours will have their engines switched off.
- l. Vehicle routes and traffic management plans will be arranged to avoid where possible any reversing operations
- m. Activities which can produce significant levels of noise will be arranged for times which are less likely to cause disturbance

In addition to the above any plant on site will be compliant with UK noise limits applicable to that equipment or is no noisier than would be expected from the noise levels quoted in British Standards BS5228:1997. All plant will be maintained properly and operate in accordance with manufacturers recommendations. All plant will be fitted with appropriate noise and vibration attenuation measures in place, based on guidance given in BS528.

With the aforementioned measures in place and appropriately planned and managed construction operations, no adverse impacts are anticipated.

Lighting

Where possible, a daylight only construction schedule will be adopted to minimise adverse lighting. It is unavoidable that construction work may require work during the hours of darkness in consideration of shorter daylight availability during winter months.

The temporary lighting scheme for the construction phase of the works may be required in these circumstances. The main considerations for the construction phase lighting are:

- To provide lighting when natural light levels fall below a safe level for site activity
- To provide adequate lighting for vehicle and pedestrian access around the site
- To provide lighting for storage, prefabrication and laydown areas
- To provide lighting for construction activity within the building footprint
- To reduce light spill at the site boundary to acceptable levels for the general environment

Any temporary lighting installed will face in the opposing direction to existing residential properties to mitigate light pollution during working hours (as shown on Proposed Site Security Setup Plan within Appendix C). Temporary lighting will primarily be used throughout the site compound areas, any lighting required across the site will constitute mobile lighting towers with a maximum height of 10m. Considering the working hours permissible on site, the time in which lighting is in use on site is envisaged to be minimal and predominantly during the winter months for health and safety reasons.

2.15 Construction Waste, Dust Suppression, Earthworks, and Soil Movements

Prior to commencement on site, a Site Waste Management Plan will be prepared to identify the types of waste anticipated and forecast on the anticipated volume of waste for the project. It will identify methods of reducing waste and provide targets for the site team to increase recycling and reduce the amount of waste to landfill. A copy of a typical SWMP is in Appendix E.

The site will follow the waste hierarchy taking the following measures to prevent, reuse or recycle waste:

Waste prevention

Design, procurement and construction strategies will attempt to minimise the production of waste wherever possible by:

- Storing materials in a way to prevent the likelihood of damage from weather, collision, theft and vandalism.
- Ordering materials just in time to reduce the likelihood of over ordering.
- Using suppliers who can minimise single-use packaging for deliveries.
- The use of prefabricated items to reduce waste from on-site construction
- If wasteful activities are identified their cause will be investigated and actions taken to mitigate the causes.
- Hazardous waste production will be minimised by specifying non-hazardous alternative products and work methods.

Reuse & Recycling

The site will look to maximise opportunities to reuse and recycle spare or waste materials by:

- Reusing spare materials, such as:

- Topsoil
 - Crush Concrete
 - Timber offcuts
 - Pallets
 - Polyethene sheeting
 - Segregating the following waste streams to maximise recycling rates:
 - Plasterboard
 - Hazardous Waste
 - Liquid Waste
 - Waste Electrical and Electronic Equipment (WEEE)
- Using waste contractors that can maximise recycling rates

Below are some of the site-specific waste risks and mitigation measures:

Environmental Aspect	Environmental Risk (Impact)	Mitigations / Initiatives
Storing waste	Risk of waste escaping into the environment causing damage to ground, water, or flora / fauna. As well as a risk of breaching waste regulations.	All waste will be stored in dedicated containers Regular housekeeping will be carried out around skip areas Waste requirements will be included within the site induction
Disposing of waste	Risk of waste escaping into the environment causing damage to ground, water, or flora / fauna. As well as a risk of breaching waste regulations.	Waste will be collected and disposed of through appropriately licensed carriers and end destinations and related duty of care paperwork kept on file.
Segregating waste	Risk of cross-contamination of waste streams leading to a breach of regulations and reducing recycling rates.	Separate clearly labelled bins / skips will be provided for Plasterboard, Hazardous Waste, Liquid Waste, WEEE waste
Identifying unexpected hazardous materials	Risk of hazardous waste escaping into the environment causing damage to ground, water or flora/fauna. As well as a risk of breach waste regulations.	Contaminated material will be segregated from all other waste and will be collected and disposed of by an appropriately licensed carrier and end destination and related duty of care paperwork kept on file.

Every effort will be made to keep waste materials to a minimum during the construction of the site. Any waste that is unavoidable will be disposed of as per the manufacturer's instructions and with regards to COSHH and waste regulations guidelines. Where possible, separate skips will be used on site to segregate waste before being removed by licensed waste carrier. Waste will be segregated.

Materials will be removed from site as soon as possible. Site fencing, barriers and scaffolding will be kept clean using wet methods.

Only cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction will be used. An adequate water supply on the site for effective dust/particulate matter mitigation (using recycled water where possible). Full enclosure will be provided of specific operations where there is a high potential for dust production and is active for an extensive period. This will form part of each operatives RAMS which will be reviewed on a three-monthly basis. If extra prevention is deemed necessary by the site management team or health and safety advisors, they will be implemented accordingly. In addition, a forklift and bowser combination can be employed to dampen the roads and mitigate dust production, however it is envisaged that with the on-site wheel wash and jet washing facilities, dust production should be kept to a minimum.

To minimise the impact of construction plant temporary hard standings will be installed to avoid plant running “off road”.

Soil Resources Plan

The goal is to keep as much soil on site as possible. The preparation and development of the site will be carried out in accordance with the Soil Resources Plan, reference GE192231-SRP-JAN21 (27/01/21), provided by Geo Environmental Soils Limited which outlines the following procedures and is provided in Appendix F;

Stripping Soil

The soil will be stripped prior to the commencement of work on site in accordance with best practice.

In order for the topsoil to maintain its quality, the soil will be stripped, handled and moved using suitable machinery and in the appropriate conditions of weather and soil moisture. Appropriate machinery will be selected based on the volume of soil and haul distance. A soil stripping plan will be followed to reduce soil compaction on site. The Site Pedestrian Route and Access Plan in Appendix B includes the soil units to be stripped, haul routes and phasing of vehicle movements. Topsoil and subsoil will be stripped and kept separately.

Storage

In order to minimise the loss of soil quality, the site of the stockpile location will be prepared beforehand by being graded and any rubbish or demolition debris removed. The soil heaps will be tipped loosely and the surface firmed and shaped to help shed water. All stockpiles will be bunded in neat, graded formation at all times. Furthermore, the location of the stockpile has been chosen to avoid any risk of muddy water run off either directly or indirectly into watercourses. If the soil is stockpiled for a period more than six months, it is good practice for it to be sown with vegetation such as deep rooting grass/legume seed mix. This will help maintain the soil structure, aeration, minimize weed colonization and help stabilize the stockpile. The stockpile will be managed to restrict self – seeding.

Designated areas have been allocated for stockpiles of material as shown on the Site Pedestrian Route and Access Plan in Appendix B.

Spreading Topsoil

Prior to the spreading of topsoil, the area on which it is to be placed is to be de-compacted to increase permeability. The minimum rooting depth is typically 450mm for grass, 600mm for shrubs and 900mm for trees. However, the topsoil spread should not usually exceed 300mm, with suitable loosened subsoil providing the remainder of the depth. The ‘loose-tipping’ method seeks to avoid over compaction by using tracked hydraulic excavators working in strips from ground not yet loosened. Ripping equipment may be used to loosen over-compacted subsoil,

if necessary. The ripping would only be done while the subsoil is sufficiently dry that it shatters. In small areas, such as gardens, a small, tracked excavator with a 'tine attachment' or hand cultivation may be used. Extra attention will be paid to not overwork the soil, especially with inappropriate machinery, can damage the soil structure and increases the risk of erosion and runoff. Additionally, any object or stones greater than 75mm would be removed from the prepared surface prior to the spreading of the soil.

2.16 Site Security, Fencing and Hoarding

All boundaries of the development will be secured with various methods including 2-metre-high close board fencing, hoarding or double clipped Heras panels. A recorded inspection will be carried out on the boundaries on a weekly basis. A combination of CCTV and Infrared detection beams will be deployed within the site compound and boundaries of the site, where deemed necessary a manned operative will be employed during out of hours. See Appendix C.

A linked fire alarm system will be deployed on site, smoke detectors will be located within plots and various fire points placed strategically across the site. The location of the fire points and smoke detectors will be reviewed quarterly, a renewed fire plan published on site.

Appendix A:**TRAFFIC MANAGEMENT PLAN**

Project Name: Wings Nursery, Lindsey Road, Woodgate		Job No C0030
Site Address Lidsey Road, Woodgate, West Sussex, PO20 3SU		
Site Telephone No TBC		Site Fax No TBC
Authorised by:	Title	Signature
John Gaffney	Southern Homes County Managing Director	
Calum Semark	Construction Director	

CIRCULATION

Copy No.	Issued to:	Location:
1.	Project/Site Team	Head Office and Lidsey Road Site Office
2.	Principal Designer	Head Office
3.	Other	
4.	Other	
5.	Other	
6.	Other	

Revision Record

This document has been reviewed and where necessary updated as detailed below.

Note – This document shall be reviewed weekly and updated as and when the site changes are significant (in conjunction with the occupation strategy) and revised at intervals no longer than 3 months.

Revision	Date	Purpose	Amendment	Updated By
-	13 th July 2021	1 st Issue		Ellie Wilkins
A	28 th September 2021	2 nd Issue		Tristan Boulter/ Gary Gill
B	19 th November 2021	3 rd Issue	Amended to reflect comments from Megan Green and Chris Brake.	
C	26 th January 2022	4 th Issue	Additional detail added throughout	Tristan Boulter
D	1 st April 2022	Feedback from ADC/ EHO	Working hours and delivery times	Tristan Boulter
E				
F				
G				
H				
I				

Introduction

The purpose of this Project Traffic Management Plan is to consider initially at the planning stage and then throughout the duration of the Project the arrangements for the management of pedestrians and mobile plant / vehicles.

If planned correctly at the start this can prevent expensive reactive management.

Responsibilities

The following persons are responsible for the development, implementation and monitoring of the Project Traffic Management Plan:

Site Manager:	Name: TBC
The Site Manager shall develop and implement the project traffic management plan. The Plan must be effectively communicated to all site personnel and appropriate visitors.	

Appointed site traffic marshal (s): (Where appropriate)	Name(s):
	To be confirmed
The appointed site traffic marshal shall be responsible for the movement of vehicles on site including banking and reversing etc of all site plant and delivery vehicles. On sites where traffic marshalls are not appointed the gateman will undertake the responsibility for traffic control.	

Site Specific Traffic & Plant Management Arrangements

Access to and from the site:

Construction traffic will enter the site using the newly formed junction on the A29, Lidsey Road which will constitute a bell-mouth junction. In the event there is any unforeseen delay to the S278 works, a temporary site entrance can be utilised in the northeast corner of the site.

A one-way system will be adopted for HGV's entering and exiting the site. All traffic should approach Woodgate from the north via the Fontwell roundabout on the A27. Traffic will then continue south on the A29, Fontwell Ave, bearing right on to Nyton Road and then at the roundabout junction taking the 1st exit on to Westergate Street, continuing Southbound on the A29. Traffic shall follow the A29 through Woodgate, crossing the level crossing on to Lidsey Road, passing Oak Tree Lane and Woodgate Road, the development site will be on the righthand side soon after

Wherever feasible, construction traffic leaving the site should take a right on to the A29, Lidsey Road and proceed southbound, continuing on the A29, now Shripney Road, until the roundabout junction where traffic will take the 1st exit on to the A259 if heading eastbound or 3rd exit towards Chichester if heading westbound.

The designated routes will be signed to instruct construction and delivery vehicles of the direction to and from the site. In addition, 'No Access for Construction Traffic' signs will be erected where appropriate. Before arriving on the site, HGV's will make radio communication with the site banksman/gateman. Once cleared for entry, HGV's will be allowed to proceed to site where they will be guided in by the banksman and unloaded by the telehandler in conjunction with the site gateman. All vehicles leaving the site will be supervised by the site banksman. A Site Access Route Plan is included.

All roads approaching the site are subject to a 30mph speed limit

Site entrances:

The site entrance will be clearly signed posted up to all construction traffic.

A new site entrance will be constructed off Lidsey Road in the form of a bell-mouth junction, this will form the singular site entrance and will be segregated from the public domain via site gates and a designated gateman. Slow moving construction traffic must be supervised by a banksman who will oversee construction traffic movements and warn approaching traffic of the presence of construction vehicles.

Visitor/end user traffic will also enter the site from Lidsey Road (A29) once construction is complete. Construction traffic, including visitors must park in the designated compound during construction.

Pedestrian traffic will be segregated by fencing at the entrance to the site. A separate pedestrian entrance gate will be provided adjacent to the main vehicular entrance and fencing/ bollards will be provided to all site walkways to provide adequate segregation from site traffic. Signage will clearly identify all pedestrian routes and crossing points and warning signs will be erected at areas liable to construction traffic.

A gateman will be located at the site entrance to direct site traffic and visitors to relevant parking and unloading areas. This will be supplemented by signage.

Restrictions:

There are no overhead restrictions on approaches to the site. The local streets surrounding the site are mainly residential and have limited parking restrictions.

A 10mph speed limit will be enforced for all construction traffic operating within the construction areas, signage will be provided to make all site personnel aware, this will be reinforced at the site induction.

To ensure that HGV vehicles do not park on the public highway, a holding area will be created on site to accommodate a minimum of three haulage vehicles. (See Appendix B). The onsite road network will accommodate additional vehicles should this number be exceeded at peak times.

Site constraints / Conditions:

There will be a designated on-site car parking for all site operatives and visitors within the welfare area. At no point during the construction project will parking be permitted off site in the local residential areas or in completed areas within the development. All visitors are to report to Project Office and sign in.

All sub-contractors will be encouraged to either use public transport or car /van share when working on site at Lidsey Road to minimise the amount of vehicle parking required, this is subject to prevailing COVID-19 restrictions and shall be reviewed in line with government guidelines.

The 10mph speed limit will be enforced by signage, induction and controlled visually by all Site Management. Speed humps will be considered if deemed appropriate.

Loading and unloading:

Initial contact with deliveries arriving on site will be made via radio by the gateman, a designated unloading area will be provided on site (See appendix C). All deliveries will be mechanically unloaded by the telehandler where necessary, all other deliveries will be manually unloaded.

All deliveries that require the use of the telehandler must be laden on the necessary pallets or slung appropriately for unloading.

The traffic marshal will control deliveries and act as a banksman for reversing vehicles and general traffic management around the site

Pedestrian segregation / Protection:

Pedestrians are segregated by post & rail fencing or pedestrian barriers with designated crossing points provided by a proprietary walkthrough barrier which will be clearly signed.

All visitors and labour are site inducted prior to entry to site.

Thakeham Partnerships management and all plant operatives are to manage this system.

Road and footpath maintenance:

The traffic marshal and site management will monitor and review the pedestrian barriers and Heras fencing daily.

Whilst on site the groundworks contractor is responsible for road cleaning. A minimum of weekly road cleaning will be in place.

Jet washing facilities will be set up and managed by the traffic marshal whilst on site to prevent mud transfer into the public domain.

Site Standards:

- All plant will have a flashing beacon, reverse sounding signals and a banksman at all times (without exception).
- Mobile phone use whilst in any plant is banned.
- The speed limit on site is restricted to 10mph.
- The site will have appropriate signage and all fencing will be checked to maintain full segregation from public.
- Excavations will be protected by 'Heras' fencing & signage
- Hard hat, high visibility vest/jacket, toe protective footwear, are to be worn at all times. Gloves and goggles will be worn where required.

Contacts / Liaison:

The emergency services will be contacted and invited to site and review access and egress. An emergency pack will be sent to all emergency services which as a minimum will include:

- Set of keys to access gates
- A plan showing entry and exit points and the traffic management on site

Site Layout Plans (See Appendix 1):

- Traffic routes
- Pedestrian routes
- Signage
- Crossing points
- One-way systems
- Loading / unloading areas

Other relevant information:

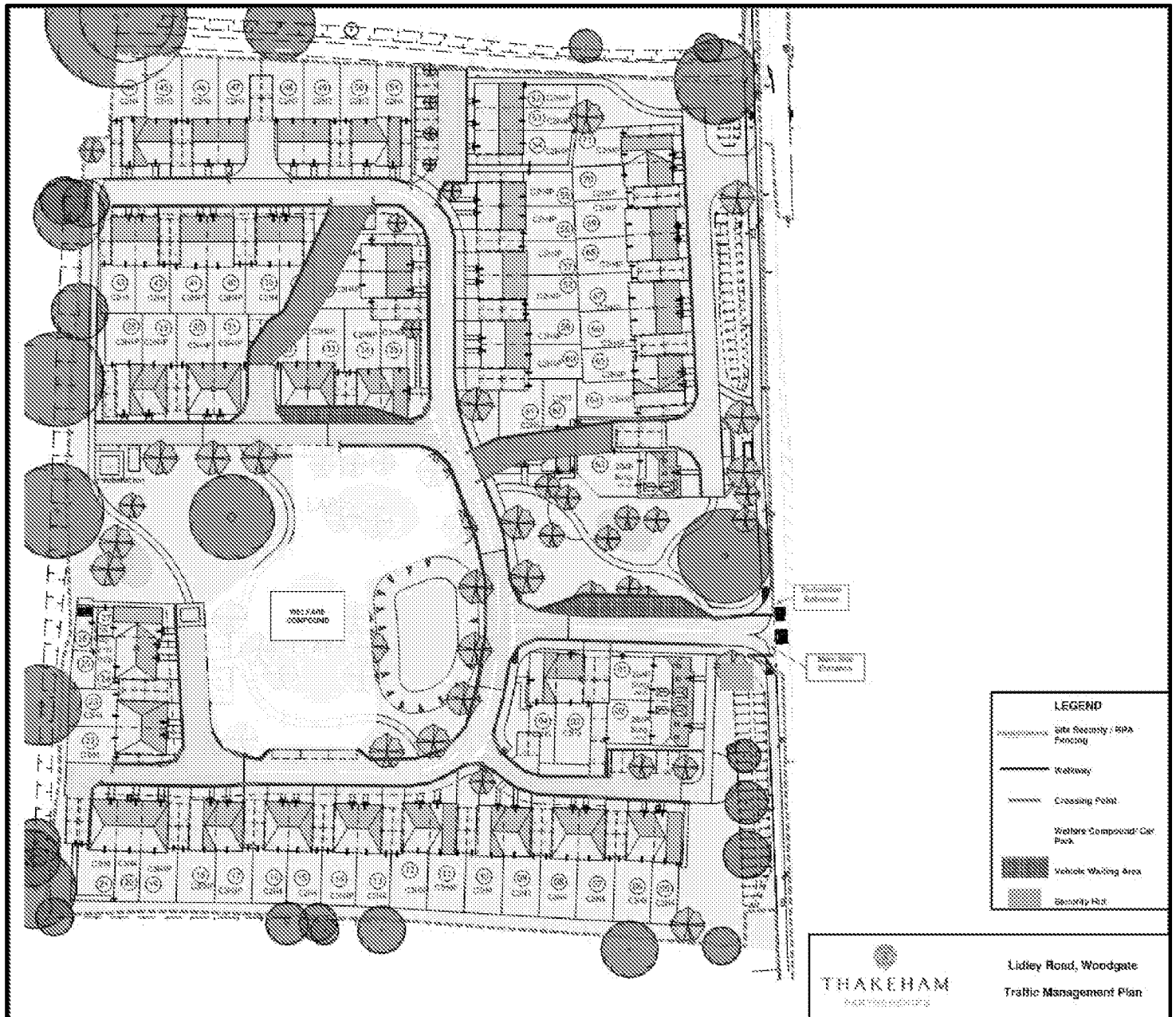
Appendix B:

Site Traffic & Plant Rules

Project: Lidsey Road, Woodgate

1.	NO PASSENGER RIDING ON SITE VEHICLES UNLESS PROVISIONS ARE MADE (E.g. a seat & seat/lap belt)
2.	DRIVERS/OPERATORS & PEDESTRIANS TO FOLLOW & COMPLY WITH SITE SAFETY SIGNS & ROAD MARKINGS.
3.	PEDESTRIANS TO KEEP TO DESIGNATED & SIGNED FOOTPATHS & CROSSING POINTS.
4.	DRIVERS/OPERATORS TO OBEY SITE SPEED LIMITS (10MPH)
5.	ROADS & FOOTPATHS ARE TO BE KEPT CLEAN & TIDY & FREE FROM MATERIALS & WASTES.
6.	REVERSING MUST BE AVOIDED WHEN POSSIBLE. USE TURNING POINTS WHERE PROVIDED.
7.	NO REVERSING WITHOUT THE ASSISTANCE OF A TRAFFIC MARSHALL.
8.	VEHICLES MUST NOT BE LEFT RUNNING WHILST UNATTENDED.
9.	KEYS MUST BE REMOVED & VEHICLES LEFT SO AS TO PREVENT UNINTENTIONAL MOVEMENT. (e.g., handbrake on).
11.	OPERATIVES MUST NOT REMAIN ON DUMPERS WHILST LOADING IS IN PROGRESS.
12.	MOBILE PHONES MUST NOT BE USED WHILST OPERATING PLANT, DRIVING VEHICLES OR DIRECTING VEHICLES.

Site Setup/ Vehicular Access/ Pedestrian Route and Unloading Plan

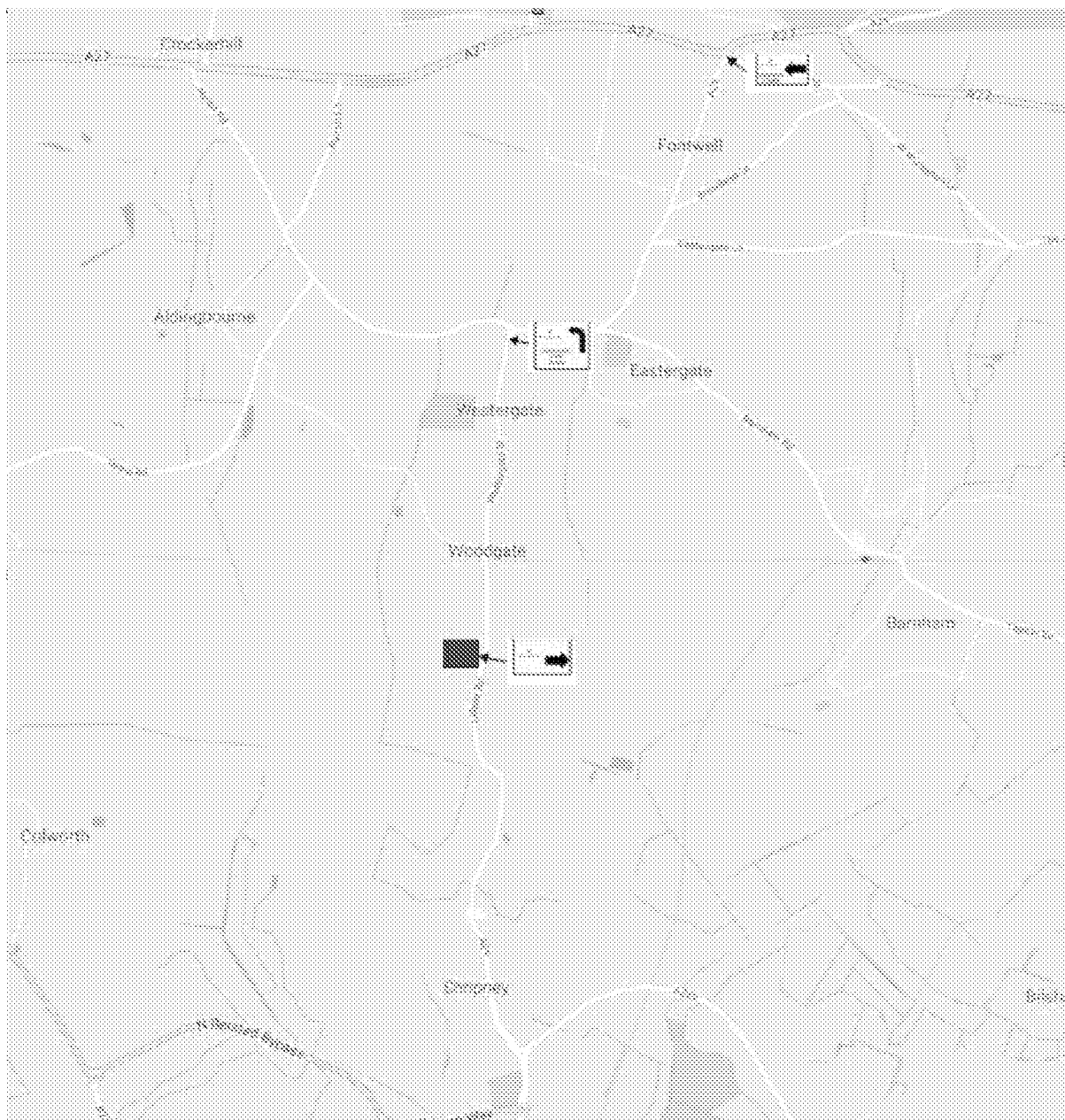


Site Route Plan (HGV'S)

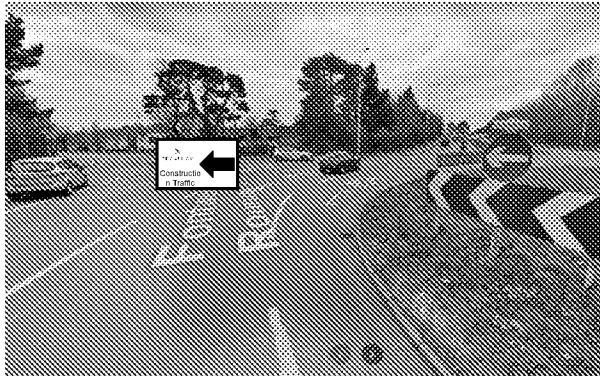
Proposed Site Route Plan



Lidsey Road, Woodgate - Traffic Route Signage



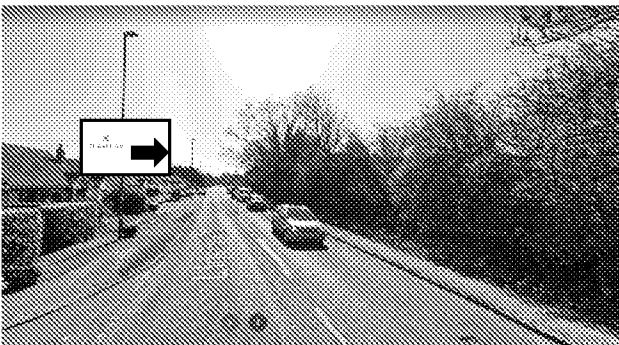
Access:



Approach fontwell roundabout on the A27 westbound. Take the 2nd Exit. If on the A27 Eastbound, take the 3rd Exit.



Take the 1st Exit continuing on the A29.

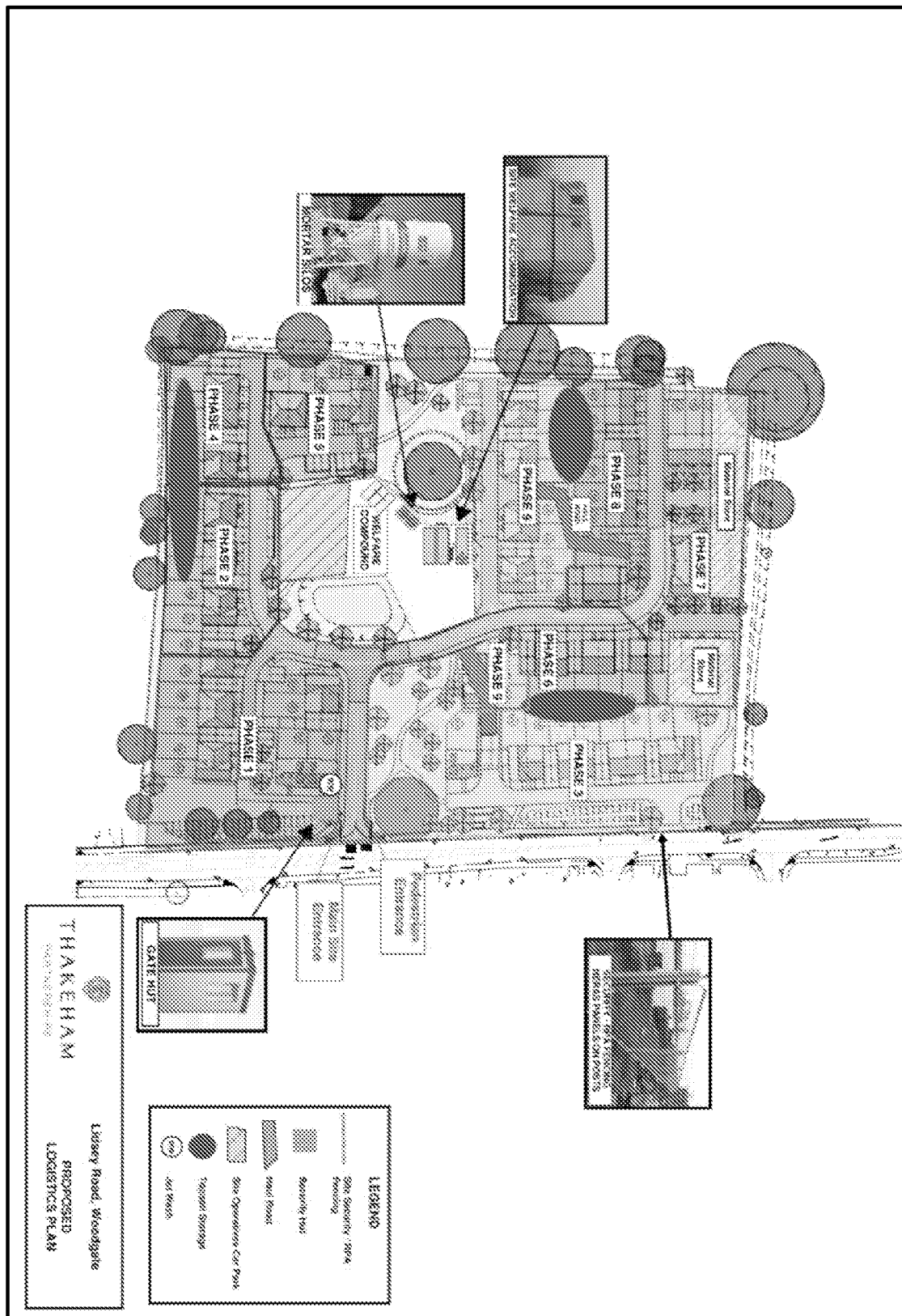


Continue on A29 through Woodgate, over the level crossing and then site entrance will be on the right on Lidsey Road.

Exit:

Construction traffic will be instructed to take a right out of the development site onto the A29, Lidsey Road, southbound wherever possible. Traffic will continue on to Shripney Road (A29), at the roundabout a left-hand turn on to the A259 will take traffic eastwards towards Littlehampton, a right-hand turn taking traffic towards Chichester.

Site Logistics



Proposed Site Security Setup



Appendix D:

Draft Construction Programme

Appendix E:

Example Site Waste Management Plan



Site Waste Management Plan

Responsibility

Name of Client:	
Name of Principal Contractor:	
Name of person who drafted plan:	
Notes, amendments:	

Construction project

Location (address, postcode if appropriate)	
Estimated project cost	
Notes, amendments	

Nature of Project:

☒ Construction of

Scope of project:

Project Aim

At we are committed to implement the project environmental plan and SWMP so that it is effective, accurate and economical, we are expecting time and a lot of effort to ensure that the procedures put into place are working and are maintained.



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Position	Name	Contact details
Client	[.....]	
Client WM representative (if applicable)	[.....]	
Site Agent	[.....]	Project office
Project Environmental Co-ordinator	[.....]	Project office
Waste Management Co-ordinator	[.....]	Project office
Document Controller	[.....]	Project office

Management

The Construction Director is environmental co-ordinator of the project and as such is responsible for instructing workers, overseeing and documenting results of the SWMP. The Environmental Department will monitor the effectiveness and accuracy of the documentation during the routine site visits.

Distribution

The contractor shall distribute copies of this plan to the Planning Supervisor, Client, Site manager and each Subcontractor. This will be undertaken every time the plan is updated.

Instruction and Training

The contractor will provide on-site instruction of appropriate separation, handling, recycling, re use and return methods to be used by all parties at all appropriate stages of the project.

Toolbox talks will be carried out every month on waste issues and all subcontractors will be expected to attend. The SWMP will also be mentioned in the site induction process. This will ensure that everyone feels they are included and that their participation is meaningful.

Waste management on site

Surplus of waste materials arise from either the materials imported to site or from those generated on site. Imported materials are those, which are brought to the project for inclusion into the permanent works. Generated materials are those, which exist on the project such as topsoil, sub-soil, trees and materials from demolition works etc.

However, there are other considerations to waste management such as waste reduction, segregation of waste, disposal of waste, financial impacts of waste disposal and recording, monitoring, education and reviewing. This plan outlines the procedures that have been put in to place and demonstrates how they benefit the environment, how we can measure the effects and how these procedures and practices are sustainable.



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Forecast volumes (m³) of Potential waste on Site

Waste Category & Types	ENABLING WORKS (Including DEMOLITION)			CONSTRUCTION WORKS		
	Tick	Estimated (m³)	Quantity	Tick	Estimated (m³)	Quantity
e.g. concrete						
Inert Waste						
Rock						
Gravel						
Sand						
Aggregates						
Concrete						
Tarmac						
Brick/Blocks						
Top Soil(uncontaminated)						
Sub soil (uncontaminated)						
Bulk excavated (uncontaminated)						
Glass						
Polystyrene						
Plastics (non biodegradable)						
Other;						
Other:						
Other:						
Sub TOTAL						
Active/biodegradable waste						
Plasterboard						
Gypsum products						
Metals-reinforcement						
Metals-steel						
Metals-off cuts						



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Timber				
Cardboard				
Paper				
Biodegradable plastic				
Canteen waste				
Trees				
Vegetation (shrubs, bushes)				
Other:				
Other:				
Other:				
Sub TOTAL				
Hazardous Waste				
Topsoil (contamination)				
Sub soil (contaminated)				
Bulk excavated (contaminated)				
Asbestos				
Explosive				
Flammable				
Other:				
Other:				
Other:				
Sub TOTAL				
TOTAL VOLUMES				



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Actual Volumes (m³) of Actual waste on Site

Waste Category & Types	ENABLING WORKS (Including DEMOLITION)			CONSTRUCTION WORKS		
	Tick	Actual (m ³)	Quantity	Tick	Actual (m ³)	Quantity
e.g. concrete						
Inert Waste						
Rock						
Gravel						
Sand						
Aggregates						
Concrete						
Tarmac						
Brick/Blocks						
Top Soil (uncontaminated)						
Sub soil (uncontaminated)						
Bulk excavated (uncontaminated)						
Glass						
Polystyrene						
Plastics (non biodegradable)						
Other:						
Other:						
Other:						
Sub TOTAL						
Active/biodegradable waste						
Plasterboard						
Gypsum products						
Metals-reinforcement						
Metals-steel						



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Metals-off cuts				
Timber				
Cardboard				
Paper				
Biodegradable plastic				
Canteen waste				
Trees				
Vegetation (shrubs, bushes)				
Other:				
Other:				
Other:				
Sub TOTAL				
Hazardous Waste				
Topsoil (contamination)				
Sub soil (contaminated)				
Bulk excavated (contaminated)				
Asbestos				
Explosive				
Flammable				
Other:				
Other:				
Other:				
Sub TOTAL				
TOTAL VOLUMES				



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PRIORITISING WASTES REQUIRING WASTE MANAGEMENT

ENABLING WORKS (including DEMOLITION): Waste Type, Category and Origin

Waste Types		Waste Category	Origin of waste
e.g. Bricks		Inert	Demolition of existing buildings and walls.
1	Concrete	Inert	Site Strip & Demolition
2	Tarmac	Inert	Site Strip
3	Brick/Block	Inert	Site Strip & Demolition
4	Timber	Active/Bio	Demolition Works
5	Sub soils	Inert/Hazard	Site Strip
6	Metals	Active/Bio	Site Strip & Demolition
7	Asbestos	Hazardous	Demolition Works
8	Plasterboard	Active/Bio	Demolition Works



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Waste Minimisation

At [site name] we have, from a very early stage looked at how we can minimise the waste produced, thereby reducing the amount of waste to be removed from the project.

Trade Contractors, design team and Suppliers are all being encouraged to look at ways to minimise the amount of waste produced at the work face. Up to date actions are recorded in the table below:

Action	Responsibility	Date Action Commenced
The wash down point for the concrete wagons is in a suitable location so that the washed out aggregates formed part of the fill		
Substructure-when the bases are being poured that we had other bases excavated so that any surplus concrete could be utilised as blinding.		
Materials, which arrive on pallets, are unloaded and the pallets are stored neatly and removed from site once the numbers are sufficient to make collection economical		
Plasterboard sheets are made to standard sizes to suit the wall heights and to reduce the amount of off cuts.		

All of the above act to reduce the amount of waste and surplus materials, which traditionally would be skipped and sent to landfill. We are continually identifying waste minimisation actions and these will be updated in the above table.

Segregation

A specific area shall be laid out and labelled to facilitate the separation of materials for potential recycling, salvage, reuse and return. Recycling and waste bins are to be kept clean and clearly marked in order to avoid contamination of materials. The labelling systems shall be the Waste Awareness Colour Coding Scheme. If the skips are clearly identified the bulk of the workforce will deposit the correct materials into the correct skip. Skips for segregation of waste identified currently are:

- Wood
- Metal
- Brick/Rubble
- Canteen waste



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As works progress and other trades come to site other skips will be placed to enable certain waste to be removed from the site. This is likely to include:

- Plasterboard
- Paper and cardboard (bagged Up)

Management

Disposal of Waste

All surplus or waste materials fall into three categories for management, these are:

- Re-used
- Recycled
- Landfill

a. Re-used

If surplus materials can be used in the permanent works they are classified as materials, which we have been **re-used**. If they are surplus to requirements and need to be removed from the site and they can be removed and used in their present form, they can be removed from site for **re-use**.

b. Recycling

If the surplus material cannot be re-used in its present form but could be used in a different form, it is sent for recycling such as 50x50 timbers to make chipboard.

c. Landfill

If either of the above cannot be satisfied then the only option left is to send the surplus materials to **landfill**. At Project Y landfill is a last resort.

Post-Construction

(Within three months of the construction work being completed)

Confirmation

This plan has been monitored on a regular basis to ensure that work is progressing according to the plan and has been updated to record details of the actual waste management actions and waste transfers that have taken place.

Signature:



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Issue	Details
Explanation of any deviation from the planned arrangements	
Waste forecasts- exceeded	
Waste forecasts -- not met	
Cost savings achieved	

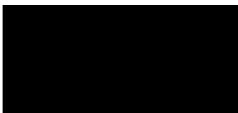
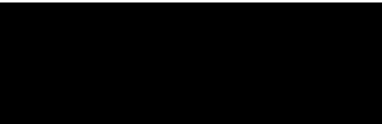
Appendix F:



SOIL RESOURCE PLAN
for the site at
LIDSEY ROAD, WOODGATE,
CHICHESTER, WEST SUSSEX,
PO20 3SU
on behalf of
THAKERAM CLIENT LTD



Geo-Environmental

Report:	SOIL RESOURCE PLAN
Site:	LIDSEY ROAD, WOODGATE, CHICHESTER, WEST SUSSEX, PO20 3SU
Client:	THAKEHAM CLIENT LTD
Date:	27/01/2021
Reference:	GE192231-SRP-JAN21
Version:	3.0
Prepared by:	 LUCY HOLFORD BSc (Hons) FGS CONSULTING ENGINEER
Reviewed by:	 NATIE BRAYNE CSci, BSc (Hons), MSc, FGS, MEnvSc REGIONAL MANAGER - EAST
Authorised by:	 JONATHAN TINGLEY CEng, BEng (Hons), MSc, FGS, MEnvSc TECHNICAL DIRECTOR

Geo-Environmental Services Ltd
Unit 7, Dunsheath Farm, Cockfield Road, Horsham, West Sussex, BN6 9CJ
T: 01273 821 872 E: enq@geol.net W: www.geol.net

GE19231/SRP/JAN21
Soil Resource Plan

Lidsey Road, Woodgate, Chichester, West Sussex PO20 3SU
Thakeham Client Ltd



Geo-Environmental

AMENDMENT RECORD

Revision ref.	Date	Reasons for amendment	Author	Reviewed By	Authorised By
1.0	23/12/2020	First issue	LH	KB	GE
2.0	27/01/2021	Updated site plan for topsoil storage locations	KB	KB	JT

GE18231/SRP/18N21
Soil Resource Plan

Lidsey Road, Woodgate, Chichester, West Sussex PO20 2SL
Thakeham Client Ltd



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FIGURES

Figure 1	Site Plan
Figure 2	Proposed Stockpile Location and Residential Development Plan
Figure 3	Excluded Topsoil area Stockpile Location and Residential Development Plan



1.0 INTRODUCTION

1.1 General

Geo-Environmental Services Limited was instructed by Thakeham Client Ltd to conduct a Soil Resource Plan for the proposed development at Lidsey Road, Woodgate, Chichester, West Sussex PO20 3SU.

1.2 Form of Development

It was understood that the development proposals were to comprise the construction of residential properties with private gardens, access roads and associated infrastructure.

1.3 Objectives

A planning application has been submitted and the council have requested that a soil resources/mitigation plan is submitted alongside the application.

1.4 Site Description

The site is located approximately 6.44km north of Bognor Regis, 10.94km east of Chichester, 26.07km west of Worthing and 40km east of Portsmouth.

At the time of the previous investigations, the site comprised a roughly rectangular grassed field, which was generally flat and level. On the eastern side of the site was a single large two storey detached house with garage and indoor swimming pool with gardens on the eastern and western sides. The former greenhouse/nursery had recently been demolished and the site cleared.

The site was bounded by mature trees and hedges, with a ditch along Lidsey Road, which formed the eastern boundary. A large oak tree was noted centrally within the western portion of the site.

The surrounding area comprised a small field and a public house to the north, residential properties to the east and south and a large commercial nursery to the west.

1.5 Standards

Where practicable, the subsequent environmental assessments were undertaken in accordance with the following documents and guidance:

- British Standards Institute - Code of Practice for Site Investigations (BS5930:2015).
- British Standards Institute - Investigation of Potentially Contaminated Sites - Code of Practice (BS10175:2011+A1:2015).
- British Standards Institute - Soils for Civil Engineering Purposes (BS1377:1990).
- British Standards Institute - Specification for Topsoil and Requirements for Use (BS3882:2015).
- DEFRA - Construction Code of Practice for the Sustainable Use of Soils on Construction Sites 2009

1.6 Soil Sampling and Laboratory Testing

Geo-Environmental have completed two phases of investigation to date –

- GE18390 – October 2018 - Ground Appraisal Report (Ref. GE18390-GAR-OCT18)



- GE18679 – June 2020 – Further Investigation Letter Report (GE18679/AP02/200616)
- GE19231 – January 2021 – Agricultural Land Assessment (GE19231-ALA-JAN21)

During the previous intrusive investigation (GE18390-GAR-OCT-19) four Topsoil samples were taken within the depth range of 0.10m and 0.15m bgl to target the various layers of Topsoil. Sample locations were spread across the proposed development area.

Soil samples were placed into plastic containers for general inorganic analysis and into amber jars for organic analysis. Samples were stored in temperature-controlled conditions from sampling until receipt at the laboratory from which time sample preparation and storage was determined by testing requirements and in line with the laboratory's protocols.

The presence of contaminants was identified on site and additional investigation was recommended. A wooden electrical box with a concrete base was noted on site. Samples of this material were taken and confirmed that the base had been shuttered with asbestos containing materials. Furthermore, plastics, bricks and concrete were observed within the soil mass during the investigation. It was recommended that a cover system be used for the private gardens and any soft landscaping around plots 1-9 and plots 73 and 74. The original investigation also identified the requirement for barrier pipe protection. For further details, please refer to the reports referenced above. It should be noted a Local Authority approved RSVP will be required to outline the soils being removed and a validation report produced once works are completed as part of any required planning condition.

1.7 BS3882 Topsoil Analysis

In addition to the geochemical testing, all 4 samples of Topsoil were sent for classification to BS 3882:2015 for their suitability for reuse as Topsoil. Table 1 below, presents a summary of the results.

Sample	BS 3882:2015 Requirements	TP3 (0.10m)	TP4 (0.10m)	TP5 (0.10m)	TP6 (0.15m)
Carbon Nitrogen Ratio	<20:1	8.7	1.5	2.3	2.7
Total Nitrogen %	>0.15	0.04	0.2	0.14	0.09
Extractable Potassium mg/l	121 to 1500	75.1	205	328	76.4
Extractable Magnesium mg/l	51 to 600	120	200	300	150
Extractable Phosphate mg/l	16 to 140	0.1	0.7	3.2	3.7
*Sand Content %	<85	82.9	82.2	89.3	88.9
*Silt Content %	0 to 65	71.8	70.8	67.2	64.9
Clay Content %	5 to 20	15.6	14.8	11.5	11.8
Stones > 2mm %	30	2.6	7.70	1.6	0.7
Stones > 10mm %	10	<1	<1	<1	<1
Stones > 50mm %	0	<1	<1	<1	<1
Total Variable Contaminants %	<0.5	0.9	0.9	0.9	0.9
Plastics %	<0.25	<0.01	<0.01	<0.01	<0.01
Sharps	0	0	0	0	0
# Multipurpose Topsoil Pass/Fail	N/A	Fail	Fail	Fail	Fail
# Low Fertility Topsoil Pass/Fail	N/A	Fail	Pass	Fail	Fail

* Depending on the percentage of other constituents

although they fail in some areas the topsoil is suitable for re-use throughout the remaining clean areas of the site

Table 1 - Soil Classification of samples against BS3882:2015 requirements



The physical make-up of the soils (sand, silt, clay & stone content) was generally suitable with soils being classified as being a silt loam. The samples failed on either Carbon Nitrogen Ratio, Total Nitrogen, Extractable Potassium, or Extractable Phosphate and silt content, therefore did not comply with the requirements for British Standard Multipurpose Topsoil. If the Topsoil is moved, stockpiled and seeded in line with best practice during the development process an improvement in the nutrients may occur but this would be subject to additional analysis and assessment prior to re-use. The addition of nutrients may still be required when the topsoil is to be re-used subject to the quality of the soils at that time.

1.8 Conditions

The data collected from the previous investigations have been used to provide an interpretation of the environmental conditions pertaining to the site. The recommendations and opinions expressed in this report are based on the data obtained. Geo-Environmental takes no responsibility for conditions that either have not been revealed in the available records, or that occurs between or under points of physical investigation. Whilst every effort has been made to interpret the conditions, such information is only indicative and liability cannot be accepted for its accuracy.

It should be noted that in particular the concentrations and levels of mobile liquid and gaseous materials are likely to vary with time. The results obtained may therefore only be representative of the conditions at the time of sampling. This report should not be taken as any guarantee that a site is free of hazardous or potentially contaminative materials.

Information contained in this report is intended for the use of the Client, and Geo-Environmental can take no responsibility for the use of this information by any party for uses other than that described in this report. Geo-Environmental makes no warranty or representation whatsoever express or implied with respect to the use of this information by any third party. Geo-Environmental does not indemnify the Client or any third parties against any dispute or claim arising from any finding or other result of this investigation report or any consequential losses.



2.0 Recommendations

2.1 Stripping, Handling and Preparing Topsoil

It is understood that topsoil is to be stripped from all areas excluding the former garden Nursery area (TP1 and TP2) and residential property (W27), see Figure 3 for excluded areas. The topsoil will be temporarily stockpiled prior to re-use with proposed locations indicated on Figure 3. During the previous investigation Topsoil was recorded at depths of between 0.15 and 0.25mbgl.

The best practice for stripping soil prior to the commences of work on site is as follows:

In order for the topsoil to maintain its quality, it is essential that soil is stripped, handled and moved using suitable machinery and in the appropriate conditions of weather and soil moisture. If sustained heavy rainfall (>10mm in 24h) has occurred, then the ground work should be suspended and not restarted until the ground has dried for at least one day or once a suitable moisture content has been reached. Furthermore, the soil should not be stripped if it is waterlogged, frozen/covered by snow or when there are pools of surface water.

Appropriate machinery should be selected based on the size of the site, volume of soil and haul distance. A detailed soil stripping plan should be followed to reduce soil compaction on site. This plan should include the soil units to be stripped, haul routes and phasing of vehicle movements. Topsoil and subsoil should be stripped and kept separately. In addition, it is best practice to keep topsoil of different quality separate from each other.

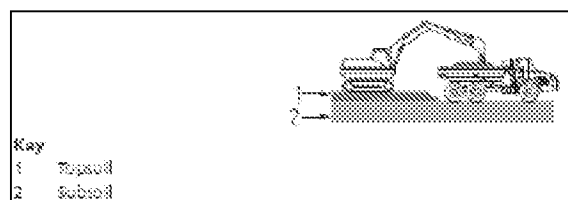


Figure 1 – BS3882 Preferred method of stripping topsoil

2.2 Storage

The quality of topsoil reduces when it is stored. In order to minimize the loss of soil quality, the site of the stockpile location should be prepared thoroughly beforehand by being graded and any rubbish or demolition debris removed. The soil heaps should be tipped loosely and the surface firmed and shaped to help shed water. Furthermore, the location of the stockpile should be chosen to avoid any risk of muddy water run off either directly or indirectly into watercourses.

If the soil is to be stockpiled for a period more than six months, it is good practice for it to be sown with vegetation such as deep rooting grass/legume seed mix. This will help maintain the soil structure, aeration, minimize weed colonization and help stabilize the stockpile. The stockpile should be managed to restrict self-seeding.

2.3 Spreading Topsoil

Prior to the spreading of topsoil, the area on which it is to be placed should be de-compacted to increase permeability. The minimum rooting depth typically should be 450mm for grass, 600mm for shrubs and 900mm for trees. However, the topsoil spread should not usually exceed 300mm, with suitable loosened subsoil providing the remainder of the depth. It is particularly important to not over-compact topsoil during spreading as this prevents



plant root growth and functioning as well as altering water attenuation and drainage. The 'loose-tipping' method, shown in Figure 2, is an effectivity method of avoiding over compaction by using tracked hydraulic excavators working in strips from ground not yet loosened.

Ripping equipment can be used to loosen over-compacted subsoil, if necessary. The ripping should only be done while the subsoil is sufficiently dry that it shatters. In small areas, such as gardens, a small tracked excavator with a 'tine attachment' or hand cultivation should be used. Extra attention is required to not overwork the soil, especially with inappropriate machinery, can damage the soil structure and increases the risk of erosion and runoff. Additionally, any object or stones greater than 75mm should be removed from the prepared surface prior to the spreading of the soil.

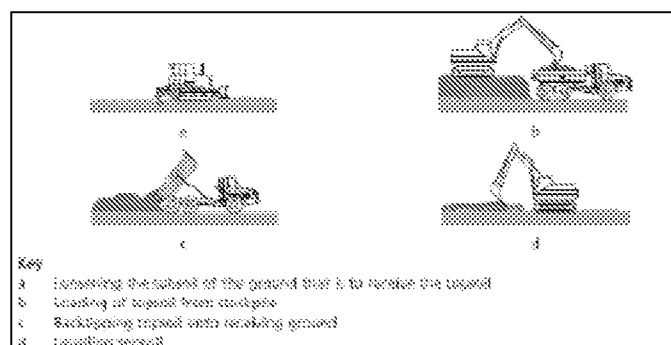


Figure 2- B53682 The loose tipping method for placing topsoil

2.6 Stockpile Plan

A plan has been provided which indicates three stockpiles of topsoil that will be located in the south, north east and north west of the site within areas of proposed rear residential gardens. The haul road is also mapped on the drawing and is presented in Figure 3.

The following volumes have been provided by Thakeham Client Limited.

Topsoil Stockpile Location	Volume (m³)
South	2000
North East	1400
North West	750

Table 2 – Estimated Topsoil Stockpile Volumes

2.7 Supervision

It is understood the person responsible for the soil management on site will be the site manager.

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3.2 Discovery Strategy

Whilst an intrusive investigation has been undertaken on the site, it remains possible that unexpected soil conditions may be encountered during the process of construction.

Examples may include oily pockets within the soil, pockets of cement boarding or fibrous materials within the soil, black ashy materials, soils exhibiting strong odours, brightly coloured materials and former structures or brickwork.

Should previously undiscovered conditions be encountered during construction by the ground workers, this should be reported to the site manager immediately in order that any necessary inspection may be made. Records should be kept, and samples submitted for analysis where conditions encountered are not as anticipated. The results of any such testing should be sent to the authorities for consultation.

Depending on the type, nature and extent of any such 'discovery', it may be necessary to halt works in that location until such time as the assessment has been completed. This should be reviewed on a 'discovery' specific basis and in conjunction with regulatory consultation.

As a general guide, where such unexpected conditions are encountered the following approach is recommended:

- All discoveries are to be reported to the Site Manager immediately and works at that location are to halt until further notice;
- The Site Manager is to report any such discoveries to the Client and the Consultant;
- Following notification from the Site Manager, the Consultant shall discuss the discovery with the Local Authority and if considered necessary, arrange to meet an Officer on site to view the discovery;
- The Consultant shall attend the site to record the location, extent and nature of the discovery and implement an appropriate sampling and analysis regime, taking due account of the type and nature of the discovery, known and probable land uses in that area of the site;
- Where remedial action is required, regulatory consultation and approval will be sought;
- A record will be produced by the Consultant and held on site (with copies held by the Consultant, Client and Local Authority), detailing the discovery, assessment works undertaken, findings thereof, confirmation either of no action required or detailing the remedial action taken and validation thereof.

The process is shown overleaf:

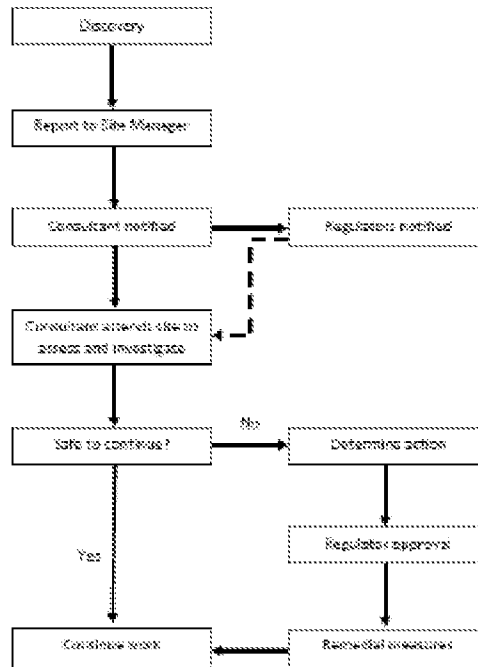


Chart 1: Discovery Strategy Process

A copy of the discovery strategy should be lodged on site, and provisions made to ensure that all workers are made aware of their responsibility to observe, report, and act on any potentially suspicious or contaminated materials they may encounter.

FIGURES

