

452 Basingstoke Road, Reading RG2 0QE
November 2016

Procter & Gamble Ltd

P&G Reading Innovation Centre

Design and Access Statement



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1.0 1.0 Proposal Overview

Procter & Gamble's architectural consultant, DHP (UK) LLP, have prepared this design and access statement on behalf of Procter & Gamble UK, The Heights, Brooklands, Weybridge, Surrey, KT13 OXP.

This proposal is for the development of a research and development office and laboratory accommodation (Class B1) and associated warehousing (Class B8), demolition and alteration works to existing building, new car parking and associated hard and soft landscaping works to provide: -

- Suitable and sufficient accommodation for the relocation of staff, work spaces, welfare facilities and car parking facilities (ca 250 [NF1][AP2] members of staff).

The proposed development comprises; demolition of the wing (South-Western) of the existing frontage building, for a new 2 storey building comprising of remodeled and new offices, laboratories, a glazed atrium to form a link between old and new, and a rear Shelter (Warehouse)

The proposed multi – storey car park will be built in place of existing surface level parking. This will contain 190 spaces over 4 levels split into 8 half levels, to minimize overall height.

The works also contain extensive landscaping works and remodeling of existing hard landscaping to form new green spaces and hard landscaping.

2.0 Existing Site and Accommodation

The site is located within an industrial area to the South of Reading City Centre, bounded industrial buildings to the South, Basingstoke Road/B3031 (to the East), Manor Farm Road (to the North) and Commercial Way/Longships Way (to the West). Buildings currently on the site include:

- 1950's original 3 storey office building with a 1970's south west return wing extension which are both currently vacant
- 1950's electrical sub-station building
- External garden store
- Hard landscaped parking areas

Brief History of the Site

The site has been used for industrial uses since the mid-1900s, and more recently as part of Procter & Gamble's Gillette manufacturing facility. Reading is where it produces personal care ranges. The site is also an R&D laboratory responsible for the front-end innovation for new razor products that are used across the world. For the past 50 years, the Reading Innovation Centre has created, prototyped and tested every new Gillette razor product that the company has launched.

Existing site analysis

The site is located within an industrial area to the South of Reading City Centre, bounded industrial buildings to the South, Basingstoke Road/B3031 (to the East), Manor Farm Road (to the North) and Commercial Way/Longships Way (to the West). Immediately to the west of the site there is a residential development and there are two semi-detached dwellings on the corner of Gillette Way and Manor Farm Road. The Ordnance grid reference for the site is SU 71546 70488

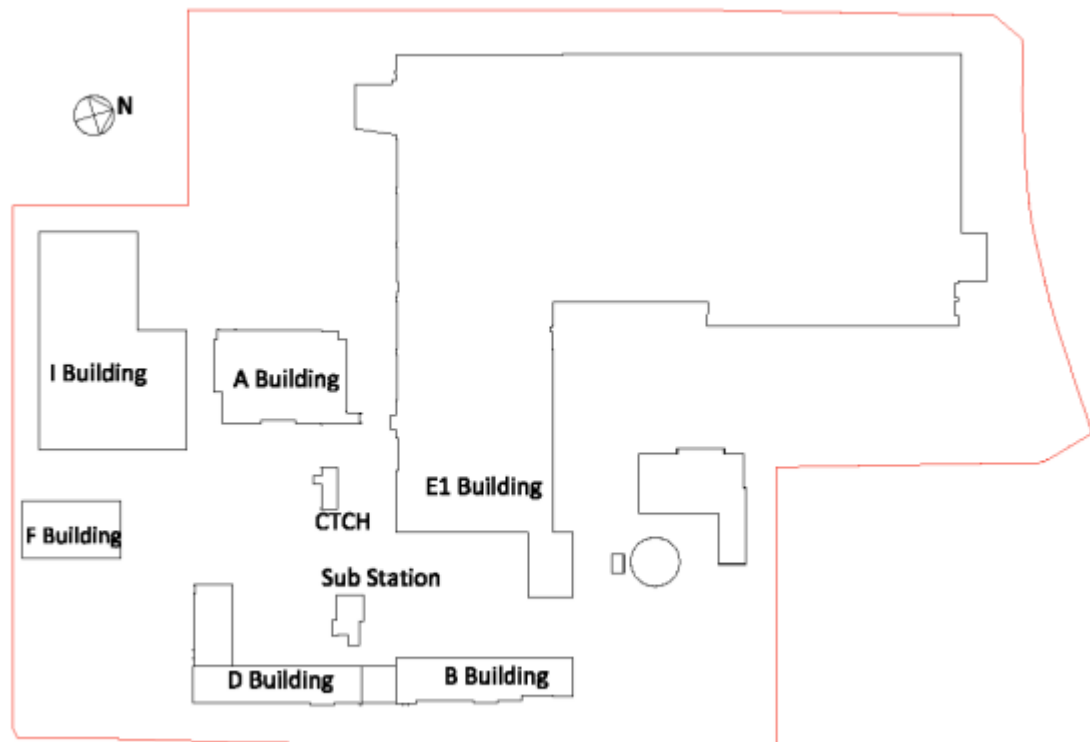
The site slopes gently from north down to the south with a total cross fall of approximately 5.0m. The area to the north of the site is the leveled site of a Building C demolished in 2014 and Part Building B in 2012. The current surface car parking areas to the rear of west of Block and to the south east corner of the site are to be redeveloped.

The trees and landscaping to the east of the site in front of D Block are to remain as well as to the west of the development site in front of A Block.

The north east corner of the site is bounded with 2.1m palisade and the south east corner the fencing comprise of 2.1m high steel post steel post fencing. The south and north boundaries are bounded with 2.1m high palisade fencing. Three security controlled vehicular gates are provided to the east boundary.

The site is not located within a Conservation Area.

Existing building analysis



SITE BLOCK PLAN

Existing Buildings on the Site are as follows:

- The existing 1950s B Building is to be refurbished to its front elevation.
- The 3 storey Building D is to have its south west wing demolished and the remaining section is to be completely refurbished with its vehicular through entrance expanded.
- The single storey electrical sub-station is to be demolished and relocated to allow for the new building to be constructed.
- External garden store to be demolished and relocated to allow for the new building to be constructed.

Issues with the existing accommodation

The retained D and B buildings are in need of refurbishment to bring up to modern standards for thermal insulation and services provision. D Building also have basement water penetration issue which need to be addressed as part of the refurbishment works.

3.0 New Building Design / Urban Design Statement

The proposed design

Development Objectives

To provide:-

- To provide work place accommodation and facilities for staff for research and development site of the P&G business.
- Suitable and sufficient accommodation
- A building that respects the original Gillette building facing Basingstoke road
- A modern, attractive, inviting new building, which is also flexible, efficient and sustainable.
- A prominent entrance and clear identity
- A well-designed, and well-constructed facility, providing a suitable environment to meet the challenges of the ever growing and changing commercial sector
- Research and Development in the twenty-first century
- A suitable environment to encourage high quality research that reflects both the needs and talents of scientists, and equipping them to thrive in an increasingly competitive world.
- A building that respects and enhances the site and street scene and compliments the existing buildings present on the existing site.

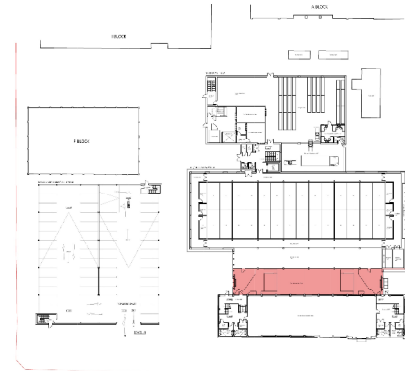
The proposal

The proposed scheme involves:

- Retention of the original Gillette building (D Block) – Removal of west wing
- Relocation of the existing sub-station, switch room and generator to allow construction of the new lab / shelter building.
- Construction of a new Multi Storey carpark to provide parking for
- Construction of a new laboratory and office building.
- Construction of a new ground level parking area to the north of the site.
- Ancillary plant and engineering works including switch room, generator and transformer buildings;
- Associated hard and soft landscaping works, including access and circulation; and landscaping;
- Formation of new northern vehicular access to the application Site^[AP3]

New Atrium

The atrium will provide a clean break between the original Gillette building and our new office and lab building with glass ends and a solid roof with roof light penetrations. The ends will be constructed with a structural glazing system with internal glass fins and stainless steel connections. The new entrance doors will be automated sliding security doors with a coloured surround and stainless steel canopy with glazed roof will help emphasise the entrance to the building. The atrium will connect the original building to the



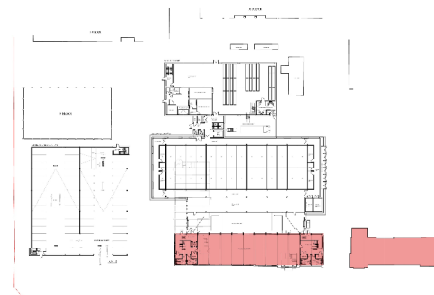
providing a clean transparent break between old and new. The atrium space will be a bright and open space with the new look laboratory building to one side and the existing original building to the other. The original building will have the windows replaced with new windows that will match the style and appearance of the original. This space will be used as a town hall meeting space that will allow large groups to gather.

Floating pods have been incorporated at high level that will suspend at high level with a series of interconnecting stairs and walkways. These will be used as collaboration spaces and will also have architectural interest and act as a feature.

North lights have been incorporated at roof level that will provide natural indirect light into the atrium and additional ventilation can be utilised with automated openable windows. Extract grills will be used for natural ventilation and smoke extraction when required. These will be finished in a black zinc panel to give a modern and industrial look to the roof. New columns will be introduced to align with the existing exposed columns of D Block and will provide support for the new atrium roof.

Existing D Block – Original Gillette Building (Basingstoke Road)

The original building that faces Basingstoke road was constructed in the 1950's and has been the Gillette icon for many years and also reflects a period in industrial architecture. The existing building is constructed from a concrete frame with brick infill panels with crittall windows. The building has been vacant for many years and now due further expansion of the business it will bring life back into the original building through an extensive refurbishment and renovation programme. The proposed layout will provide new office space, huddle rooms and meeting rooms and need to directly integrate and work with the new office and laboratory spaces.



New circulation spaces have been incorporated to the west and at ends of the plan that will house stairs, lift, service corps and staff amenities, these will form book ends to the quality flexible office space between. This will require the removal of the existing west wing constructed in the 1970's. The external facade will be re-instated and infilled with brick panels and new windows to match the style and appearance of the existing building. The building will undertake the following fabric improvements which will help to bring the building up to modern required standards.

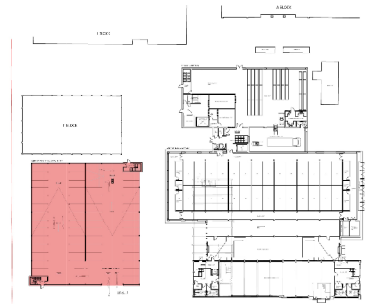
- Internally dry lined to improve thermal properties of existing external walls
- Replacement of windows with new polyester powder coated aluminium windows having the same style and appearance of the existing windows.
- New heating system
- New electrical and mechanical services
- Upgrading roof to improve its thermal properties
- A lift to provide access between all floors including the new laboratory building.

The existing security single storey security building located between the two wings will be demolished and the existing undercroft access will be opened up and new steel black gates will be provided to match the existing. This access will be used for collection and delivery of materials to the new shelter building.

New Multi Storey Car Park

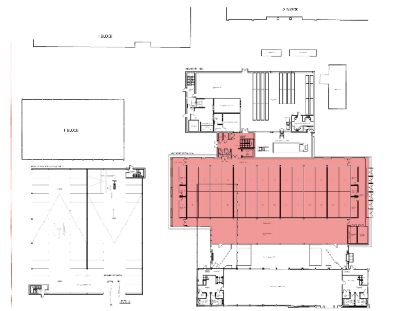
A new multi storey car park will be constructed to the west of the site where there is existing ground level parking allocated. This will provide additional parking spaces for staff and visitors to the site. The main structure will be constructed from a galvanised steel frame with polyester powder coated mesh infill panels. The horizontal mesh panels will reflect the lines of the original brickwork of the Gillette building and where panels are not present this depict the window elements.

The vertical frame behind will appear like concrete columns set between the windows. The overall height of the new car park structure will line through with the original building. Two brick towers constructed with an external facing brick to match the existing will form the enclosures to the stair cores at the east and west corners of the car park. The tower to the east will depict architectural elements that are present in the original Gillette building to help bond the two together.



Laboratory Building

A new laboratory building will be set over two floors and will contain as drawn fifty six individual laboratory units that will be flexible and adaptable to meet the ever changing market. To the south of the labs will be office space and to the north the new shelter building. There will be a new central service core containing staff amenities, stairs, service-cores and a goods lift to transport equipment between the labs and the shelter building. The building will be constructed from a steel /



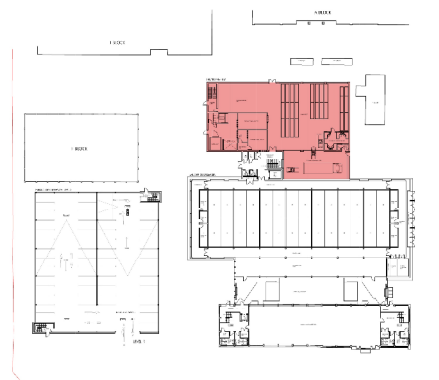
concrete frame and a traditional wall construction at ground floor with brickwork to tie in with the existing building. At first floor the façade will over hang the ground floor with an external cladding system that will consist of two colours, Grey Mist and Storm Grey along horizontal window lines. The cladding will give a natural soft look to the building but have a contemporary architectural twist. Where the structural glass adjoins the lab building the external cladded envelope will continue through to the atrium. New windows and doors will be polyester powder coated aluminium finished in dark grey with the cladding returning to the window frames. The cladding has been set out to carry through the horizontal elements of the original building and consideration has been given to by maximising standard panel sizes in order to avoid waste. The cladding will continue up past the roof level to provide an 1100mm high wall at roof level for safe roof access and maintenance.

All plant has been located at roof level and a 2.5m high perforated and profiled cladding to provide a vertical screen for roof plant and to help reduce noise from plant equipment. The plant has been set into the roof edge to help reduce the overall height at ground level of the building.

Shelter Building

The shelter building will contain general storage, waste management office facilities at ground floor and at first floor will have climate chambers for product development within controlled conditions.

The building will be constructed from a steel frame and clad in a profiled composite external wall panelling system that will be powder coated in blue to match the existing cladding to the rear of the Gillette building. This will be full height and clad up to roof level where it will change to a panel with perforated holes to provide ventilation for roof plant and add architectural interest.



The profiled cladding will be 2.5m high from roof level to provide a vertical screen for roof plant and to help reduce noise from plant equipment. An enclosed delivery bay has been incorporated to the north side of the building, this will be accessible via an external ramp located off the existing through road.

Building Location, position and massing

The new building has been located on the site following the options appraisals done at early design stage. The existing site has very little room for expansion and adaptations. Numerous schemes were looked at early feasibility stage to ascertain the most appropriate location for the new buildings. The design team have considered a number of options and numerous schemes were looked at and decisions were based around how it would affect the everyday running of the business and the continual movement within the site of existing service and how these would work together following the integration of the new lab and office building.



The new building is set over two floors with 4.7m between floors to allow for co-ordination of building services and to provide a column free structure to the lab building to allow maximum flexibility. Each element of the building has been designed to have its own identity through the use of different building materials for each element. This also provides a degree of separation between old and new and allows the original building to be segregated with its own identity.

The new building is of a high quality design, utilising robust high quality, durable materials. Each area of the new building is clearly defined with its own form and massing, creating a series of individually legible spaces, which break up elevations and provides visual interest.

The external envelope will predominantly be finished with a small palette of materials including:-

- Brickwork** in a colour to match the Gillette building (D Block)

- Structural glazing** (frameless) full height at the main entrances of the atrium

- Fibre cement cladding** panels in two colours to all elevations of laboratory building

- Powder coated aluminium framed glazing** and door-sets throughout

- Zinc panelling** – to north lights

The design choices, materially, where and how they are applied have all been informed by the Gillette building. Gestures have been made to the original concrete columns, cills, and heads of windows with strips of cladding / mesh creating a contemporary continuity in the Architectural dialogue between the old and new. Materials will tie the existing and proposed together; with elements of the new, on occasion, punctuating the heavy red brickwork work of the existing. Where old and new meet, clean lines, junctions and joints are proposed

The development has been designed as a modular steel structural frame, permitting flexibility and adaptability in the future.

Landscaping and External Areas

The development will include hard and soft landscaping improvements throughout the site, including the planting of 8 of semi-mature trees. Our landscaping strategy is to:-

- Create a visually pleasing, secure and suitably segregated site to facilitate all proposed activities
- Enhanced hard and soft landscape treatments at new main entrance to improve the visual amenity of this key area
- A good and effective relationship between external and internal spaces throughout the site to ensure effective circulation across the site

The main entrance will incorporate new concrete paving to designate the pedestrian area. Pedestrian areas are segregated from vehicular areas where possible by means of different surface finishes and edgings to road and pedestrian area to demark the different zones. Designated pedestrian crossing points across the site roads have been introduced to allow the safe movement of pedestrians around the site.

Bollards and Armco provide barrier protection to the new buildings and ramps to protect both staff and structures.

The existing staff amenity area in front of A Block is proposed to be extended across to the Shelter to provide additional staff amenity space. Steps and ramps are incorporated to ensure the area is fully accessible.

A number of general enhancements were recommended by the ecologist to provide a net gain in biodiversity in accordance with the National Planning Policy Framework and local planning policy. The detailed design of such enhancement measures will be advised by an ecologist once more detailed plans are in place. Some high level enhancements include:

- The provision of a range of habitats and planting structure, such as native trees, scrub and ephemeral habitats with high plant species diversity. This will provide habitat for invertebrates, nesting sites and shelter for birds, and foraging resource for bats.
- The provision of bat and bird boxes within the proposed building façades. Specific bird box designs will be selected to attract notable species recorded in the area such as swift, house sparrow and starling.

Parking Proposals

Summary of Proposed Scheme

The areas of the site the parking scheme relates consists of existing surface parking areas and areas of the site where buildings have been previously demolished creating vacant areas of hard standing. The areas where parking is to be provided are as follows:

- New Multi Storey Car Park to the South East Corner of the site providing 178 secure spaces and 12 visitor spaces
- Surface visitors parking to the South East Corner of the site providing 19 spaces including 1 wheelchair accessible space
- Surface staff parking to the west of D Block providing 57 secure spaces
- Surface staff parking to the North East corner of the site providing 102 secure spaces
- 44 additional covered cycle spaces are to be added to the existing cycle provision of 30 spaces
- 5 additional motorcycle spaces to be provided
- 12 DDA compliant disabled parking spaces

Design Proposals

All car parking and pedestrian access will be from the existing vehicular site access adjacent to Basingstoke Road plus a new vehicle access to the north east corner of the site^[AP4].

Surface Parking

The surface parking has been designed to maximize the amount of parking available on the vacant areas of the site. Due to the change in levels of the site, a ramp has been introduced to link the parking area to the west of D Block and the central access road that runs through the site to provide flexibility of movement around the site. A new northern vehicular access to the surface car park has been introduced to ease congestion on the access road as per the Arup transport study^[AP5].

Tarmac is proposed to be used as the surface for the proposed surface parking to match that of the existing surface parking areas. The surface parking will utilise low energy lighting to reduce the amount of electricity used for security lighting. Fittings will be selected to and positioned to reduce light pollution. An indicative lighting design is included.

An appropriate drainage design will ensure that the development has no impact in terms of flooding including the provision of a sustainable urban drainage system as detailed elsewhere.

Multi Storey Car Park

The Multi Storey Car Park proposal for this site is designed to be of an appropriate height and massing when viewed from Basingstoke Road. Its relation to the Southern site boundary, the existing F Block and the site access point next to D Block has determined its most appropriate position on the site.

The car park structure will take up a foot print of 32.5m x 36.5m. There is a 2 way entrance and exit to the north east corner of the east elevation. A staircase is provided to both the North West and south east corners.

The proposal will comprise of 4 stories over 8 split levels. The scale and massing is in keeping with D Block.

It is proposed that the building will use a material palette of a steel frame with pre-cast concrete floor planks and block work built stairwells wrapped in a steel enclosure to three sides and not to the rear elevation into the existing site. The material proposed have been chosen to provide a functional finish sympathetic to the industrial nature of the surrounding area. The new building has a horizontal and vertical emphasis to reflect the proportioning of the adjoining D Block.

In order to alleviate over spill of car head lights onto Basingstoke Road there are solid infill panels integrated into the car park balustrading.

4.0 Access Statement

Access on to the Site

Pedestrian and vehicular access onto the site will be via the existing entrances off of Basingstoke Road plus a new vehicle access to the north east corner of the site^[AP6]. All entrances will be secure control points via swipe card access as is the current arrangement.

All entrances to the site will be DDA compliant and have regard to the Building Regulations Part M. This will be achieved through providing the following:

- Convenient and legible entrances that relate to arrival points.
- Level or ramped circulation routes and egress points.
- DDA compliant disabled parking spaces.

The following design criteria will also be applied as part the detailed design development:

- Any external furniture, paving and landscape features placed in external circulation routes, such as bollards at the edge of the traffic / pedestrian zones, will not create barriers or hazards for disabled people with impaired vision.
- All pedestrian access routes will have clear directional signs, be evenly lit and barrier free. Night illumination will be suitably designed for pedestrian pathways especially the approach to the main entrances and specific entry points from accessible parking areas.
- All surfaces will have known slip resistance in either dry or wet conditions.
- Surfaces will be durable, even and slip resistant.
- Drainage will avoid ponding and areas where freezing may create hazardous surfaces.
- Changes in surface treatments will be logically arranged and should assist direction finding for partially sighted people.

Disabled Car Parking

The 6 current disabled parking spaces next to I Block to the centre of the site, with 6 additional disabled parking spaces located near to the entrance to the new lab / office building. These measure 4.8m x 2.4m, with an additional 1.2m wide transfer strip along one side of the bay. This transfer strip will allow the driver or passenger to transfer easily between car and wheelchair. These bays will be clearly marked on the ground and signposted using the BS wheelchair symbol; the transfer zone will be protected by hatched markings.

Between the parking area and routes to buildings, kerbs will be dropped as necessary, allowing access for wheelchair users and incorporate tactile paving at the change in levels for the benefit of the visually impaired. The car-parking surface will be firm, smooth, even and free from loose stones.

Pavements, Footways and Pedestrian Areas

All pedestrian footpaths within the site will be to a minimum of 1800mm wide to satisfy BS 8300. Pavement surfaces will be of a non-slip material will be even and will have clearly defined edges for the benefit of the visually impaired. Suitable lighting will be used to provide a direct and well-lit route. Gradients of pathways will not exceed 1:20.

Changing Levels

All approaches into the new buildings will have a level access.

Street Furniture

On site street furniture will not block pavements or footways and will be visible to the partially sighted by contrast and texture.

Car park bollards will be no more than 1m high and in contrast with the footpath to prevent blending into the background.

Lighting

All pedestrian routes that are likely to be used during hours of darkness will be lit during hours of use (photocell controlled) to International Commission on Illumination (CIE) *Guide on the limitation of the Effects of Obtrusive Light from Outdoor Lighting Installation*, Zone E2 Brightness and will be designed to prevent glare and shadows. Lighting columns will be located in such a way so as to prevent obstruction as indicated on the proposed external lighting plans.

The Building

Entrance doors

Main entrance doors will be electronically operated by sensory movement mechanisms linked to a card access system, which will be integrated to allow for varying heights of users and set with delay to allow users time to enter/exit.

The doors will also have contrasting markings (manifestation) so that the visually impaired are able to distinguish them.

Entrance Lobby

The secure entrance lobby has been designed to allow adequate provision for wheelchair users to manoeuvre without obstruction and move clear of one door before using the next one. There will also be sufficient space for someone assisting the wheelchair user.

Entrance doormats will be inset flush with a non-slip surface.

Interior wall finishes will have colour schemes that will improve contrast and visibility when moving from the bright outside to the darker inside. Up-lighting will be incorporated to help reduce glare within the entrance for partially sighted people.

There will be no columns/ducts or other full height obstructions located within the entrance lobby.

Reception Area

The main reception area is clearly identifiable when entering the building, also allowing the receptionist to assist visitors if help is required.

The reception counter will be 750mm high, allowing wheel chair users and children to see and be seen over the top of them.

Waiting seats will be provided and shall be of varying height, but not lower than 420mm.

Induction loops will be installed and clearly identifiable with a visible sign.

Interior Doors, Corridors and Circulation Space

Internal doors will all have minimum clear widths of 900mm.

Main corridors and circulation spaces will have minimum widths of 1800mm allowing building users to pass.

Contrasting signage with brail will be provided throughout the building for the visually impaired and positioned at varying heights.

Toilets

Wheelchair accessible toilets are to be located:-

- 1no. near main entrance reception to ground floor to south east corner of new building Office/Laboratory Building
- 1no. to ground floor of link building between Laboratory/Office building and Shelter
- 1no. to first floor next to atrium to south east corner of new building Office/Laboratory Building
- 1no. to first floor of link building between Laboratory/Office building and Shelter
- 1no. to second floor next to atrium to south east corner of new building Office/Laboratory Building

All wheelchair accessible toilets will be 2.2m x 1.5m and have fixtures and fittings to comply with BS8300 and Part M of the Building Regulations. A red pull cord emergency alarm system shall be provided to all such facilities.

Lifts

A double entry passenger lift is to be included in the refurbished D Block. It will provide level access to all new and existing accommodation with the exception of the ground floor to D Block. A separate hydraulic platform lift will be provided at this level to provide level accessible access

Fire and Means of Escape

The fire alarm system will include for both visual devices for those with hearing impairments and audible devices for the visually impaired. Escape routes and signage will be located so that they are clearly evident. Refuges and evacuation chairs will be provided for wheelchair users at appropriate locations throughout the new buildings.

5.0 Site Access and Security

Site Security

A site access and security strategy has been developed to ensure the safety, security and welfare of site users and visitors. In summary, the site is a secure site, with access only through the secure access controlled main entrance.

Access on to the site will remain as per the existing site access arrangements.

The following features have been incorporated within the design.

- Secure boundaries with 2.1m high fencing to eastern perimeter
- Visitor access control at vehicular gates, and existing reception
- Pupil areas separated from community use areas
- Security and amenity lighting of external spaces
- Monitored intruder and fire alarms
- A secure building envelope (windows, doors, roof etc)
- Reception panic alarm.

Lighting

All pedestrian routes that are likely to be used during hours of darkness (at the main entrance and the buildings perimeter only) will be lit during hours of use (photocell controlled) to International Commission on Illumination (CIE) Guide on the limitation of the Effects of Obtrusive Light from Outdoor Lighting Installation, Zone E2 Brightness and will be designed to prevent glare and shadows. Lighting columns will be located in such a way so as to prevent obstruction.

Refuse Storage

A secure refuse / recycling store has been provided to the internal ground floor of the Shelter approx. 98m². The enclosure will be secure and the waste will be stored and then sorted and then integrated into the existing Innovation Centre and Plant waste streams.

Emergency access

The emergency access for the site will remain the 3 existing vehicular access points to the eastern boundary. Existing access from the remainder of the site remains unaltered.

6.0 Sustainable Design and Construction Statement

The applicant is committed to sustainable design and construction. We set out below a summary of the sustainability measures. This should be read in conjunction with the Sustainability Statement and Energy Strategy which support this application.

Use of Existing Buildings

The existing D Block Building will be altered, adapted and re-used to provide new office accommodation.

Energy / materials / water conservation

In design

- The new development will aim to achieve a BREEAM rating of at least 'very good'. A BREEAM pre assessment estimator has been completed by Arup.
- The new buildings are designed to utilize / maximize the benefits of natural light and solar gain. The buildings have been positioned and orientated where possible so that natural light and ventilation are maximized, whilst unwanted solar gain is reduced by solar control to glazing at south facing windows.
- The building is designed to be inherently flexible and easily altered to suit future changes. The development has been designed as a simple modular steel structural frame that will permit flexibility and adaptability for changes in its use. The main structure is designed to be 100% recyclable.
- The building will be insulated to standards that meet current Building Regulations.

In construction

- Materials from sustainable source will be specified where possible.
- Products and materials will be specified with regard to the lifecycle costing and will generally be high performance to maximize durability.
- Contractors will be encouraged to source local materials where possible.
- Timber, where possible, will be sourced from sources acceptable to the Forest Stewardship Council.

- Redundant materials from existing buildings will be re-used, reclaimed or recycled where salvageable.
- We will actively encourage the use of local contractors / workforce and will ask contractors to demonstrate their commitment to the same at tender stage.
- We will actively encourage and promote energy efficient behaviour of site personnel.
- Site traffic movement will be strictly controlled to avoid addition to peak time congestion. In additional, deliveries will be restricted to ensure neighbours are not unduly disturbed.
- Noisy on site operations will be strictly controlled / minimised and limited to sociable hours
- Dusty activities will be controlled and suppressed where possible to prevent their impact on neighbouring receptors.
- Burning of waste on site will be strictly prohibited.
- The contractor will be required to protect the existing water discharged points on and surrounding the site to prevent pollution of water ways.
- As part of the tender process, contractors will be asked to demonstrate that they have suitable policies regarding sustainability. The quality of their responses will be used as part of the tender adjudication.
- A Site Waste Management Plan will be required to be completed, updated and maintained by the main contractor.

Travel Plan

The Transport Assessment submitted in support of this application includes a framework Travel Plan with the intention of promoting more sustainable travel.

Sustainable Waste Behaviour

During Construction

- Burning of waste on site will be strictly prohibited
- A Site Waste Management Plan will be required to be completed, updated and maintained by the main contractor

General Waste Disposal

P&G policy is to generate zero landfill. The waste generated by the new development will be integrated with the existing site waste generated by the existing Innovation Centre and Plant. Independent tracking for all new waste generated will be provided as required by internal and external regulations.

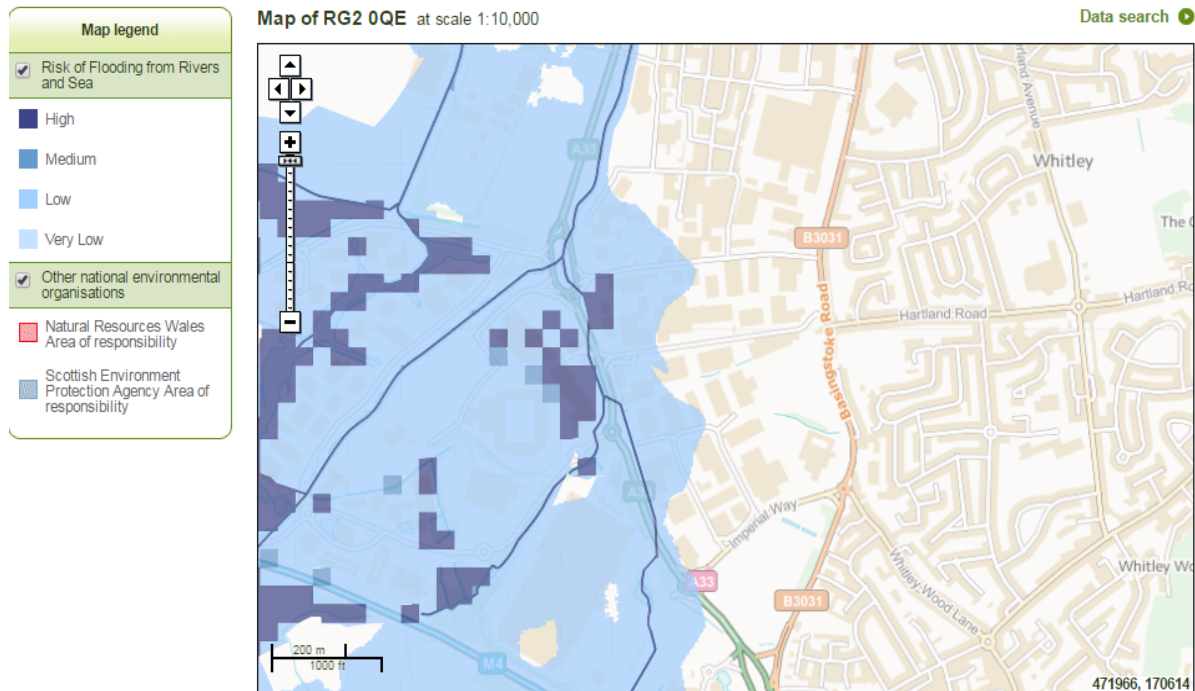
The following waste streams will be sent to the Waste Management Area in the new Shelter building. Here the site Operations Team utilizing P&G's existing Specialist Waste Management Service Provider will manage the segregation, classification, packing and booking of loads with applicable Disposal/Treatment sites.

- Recyclable waste (paper/cardboard/plastic etc) will be compacted and collected for recycling.
- WEEE Waste – Managed by Treatment, recycling or recovery
- Hazardous (Chemical/Finished Product) and confidential waste will be managed in accordance with the EU Waste Framework Directive with a focus on minimizing environmental impact through Recycling and recovery. Disposal as a last resort will be by Incineration without heat/energy recovery – none of this waste stream will be direct landfill.

Since April 2016 the Environment Agency's annual premises registration process ceased to be operational – no registration process is required at the new facility.

Flood Risk Assessment and Drainage Infrastructure

Flooding issues are largely contained in areas outside of existing residential development within South Reading. The floodplain extends around the A33 Relief Road and any future development of sites within these zones must carefully consider the likelihood of flooding and the potential impact any development may have on flood storage capacity within these areas [see EA Flood Risk Map below]. The application site is not located within these areas of flood risk.



Foul Water

Trade Waste

The site currently has a Consent to the Discharge of Trade Effluent dated 1 July 2011 with Thames Water (Appendix B). Any additional suspected Trade Effluent will be discharged into a tank for a monitoring period to be agreed with Thames Water. The effluent will be tested to confirm if it complies with the existing Consent. During this interim period, any Trade Effluent will be removed from site by tanker for specialist disposal. Once consent is obtained from Thames Water, trade effluent will be discharged into the public sewer in accordance with the Consent.

Surface water

Surface water will be disposed of in the following drainage hierarchy: -

- Surface and rainwater drainage to the existing buildings will remain unaltered
- Where ground conditions and required surfaces are suitable (eg paving to pathways and car parks) new hard surfaces proposed will comprise non-porous surfaces such as concrete pavers and tarmacadam with surface water drainage channels and yard gullies.
- Rain and surface water drainage from the new building and new parking areas will be attenuated (via below car park ground tanks) and then discharge into the existing public sewers at a controlled rate.

Sustainable Drainage System Proposals (SUDS)

Our proposal for SUDS attenuation aims to satisfy the requirements for Sustainable Urban Drainage Systems as set out in the:

- National Planning Policy Framework
- Reading BC Core Strategy (2008, revised in 2015)
- Reading BC Sites and Detailed Policies Document (2012, amended in 2015)
- Reading BC Revised Sustainable Design and Construction Supplementary Planning Document (2011)

NPPF paragraph 103 states that when determining planning applications, local planning authorities should ensure that the proposed development does not increase flood risk elsewhere. Planning Practice Guidance on Flood Risk and Coastal Change suggests that the aim should be to discharge surface run off as high up the following hierarchy of drainage options as reasonable practicable (Paragraph 80):

1. into the ground (infiltration);
2. to a surface water body;
3. to a surface water sewer, highway drain, or another drainage system;
4. to a combined sewer

The Reading BC Core Strategy (2008) also states in Policy CS1 regarding Sustainable Construction and Design that all developments should incorporate sustainable urban drainage facilities and techniques.

The Revised Sustainable Design and Construction SPD (2011) supports Policy CS1 that requires that *“developments incorporate sustainable urban drainage facilities and techniques as part of the layout of a development as appropriate and as advised by the Environment Agency, including minimising the size of impermeable areas so that peak run-off and annual water run-off is reduced where possible and in any case is no greater than the original conditions of the site”*.

The Sites and Detailed Policies Document (2012) sets out in Policy DM1: Adaption to Climate Change that all developments will demonstrate how they have been designed to incorporate measures to adapt to climate change. DM1 states that all development shall minimise the impact of surface water runoff from the development in the design of the drainage system.

Accordingly, surface water will be disposed of in the following drainage hierarchy: -

- Surface and rainwater drainage to the existing remaining buildings will remain unaltered
- Where ground conditions and required surfaces are suitable (e.g. paving to pathways) proposed new hard surfaces will comprise non-porous materials such as concrete pavers and tarmacadam with surface water drainage channels and yard gullies
- Rain and surface water drainage from the new building and new parking areas will be attenuated (via below ground tanks) and then discharge into the existing public sewers at a controlled rate.

The development will utilise sustainable urban drainage design in accordance with the drainage hierarchy as follows:

1. **Store rainwater for later use** – discounted as unpractical owing to insufficient project funds to cover the high initial capital cost of installation, high on-going maintenance costs. Rainwater storage and reuse would be of limited use and zero cost benefit.
2. **Infiltration techniques** – Will be implemented where possible, however, the soil is London Clay (as per the ground investigation report undertaken by ESG reference 3894819/PTE dated 21 April 2010 in Appendix C) and so there is limited scope for utilisation of infiltration techniques.
3. **Attenuation of rainwater in ponds or open water features** – discounted as a solution as it is impractical to implement due a lack of on-site space to accommodate this.
4. **Attenuate rainwater by storing in tanks for gradual release** – Adopted for 56% of the site/ 100% of the undeveloped / redeveloped site (8,514m² of roof) of which 8,250m² is currently hardstanding with no water attenuation. Hence, a reduction of existing unattenuated discharge direct to the existing surface water sewers of 54% of the affected site.
5. **Discharge rainwater direct into watercourse** – Discounted as not achievable.
6. **Discharge rainwater into surface water sewer** – Adopted for the existing retained buildings and their immediate hard standing (circa 44% of the total site – a reduction on existing discharge as detailed above).
7. **Discharge rainwater into a combined sewer** – This solution is not applicable to this development site.

Design calculations: BRE Digest 365 –

Calculation to determine amount of rainfall and attenuation:

Affected Site Area – 15,160m²

Area of current development to be left unaltered 1,060m²

Area to be developed / redeveloped 8,514m²

Area not to be developed 5,586m²

Rainfall on developed / redeveloped site as BRE 365

Design rainfall (r) for M10 – 60 mins

Rainfall ratio (r) = 0.4

Z1 factor – 1.00

M5 – 60 mins = 20mm x Z1 = 20mm

M10 – 60 mins = M5 – 60 mins x Z2

= 20 x 1.24 = 24.8mm

Total site run off = 8,514 x 0.0248

M10- 60 mins for whole area to be developed / redeveloped = 211m³

So 50% = minimum 106m³ attenuation to achieve the essential standard.

In determining the above attenuation, it should be noted that of the affected (15,160m²) site area 14,912m² is currently made up of buildings/hardstanding with total direct, un-attenuated run-off to the authorities' surface water sewer system.

In light of Sustainable Design and Construction SPD (2011) Policy DM1, this application recognises the need for a sustainable and manageable drainage solution to minimise surface water runoff. It has therefore taken into account the full roof area of new buildings and the total footprint area of car parking spaces (equating to 8514m²), which results in a net reduction in surface area (circa. 6400m²) that produces run-off directly discharging into the surface water sewer.

ENERGY STATEMENT

General

Further details on building energy can be read in the submitted Energy Strategy.

The key building regulations for sustainable and energy efficient developments are as follows:

- Part F (ventilation) – regulates control and effectiveness of ventilation schemes.
- Part L (conservation of fuel and power) – regulates the energy performance and carbon emissions of new and existing buildings.

In accordance with planning requirements a 20% carbon saving in comparison to the notional building. This will be achieved by a combination of improved building fabrics combined with the introduction of renewable energy systems to provide an overall 20% reduction of energy.

For the calculation of required renewable energy requirements, a baseline target emission rate must be derived using a notional building emission rate and a relevant improvement factor and low and zero carbon factor. Calculations are carried out using the simplified building energy model (SBEM) programme licensed by Hevacomp.

Services Strategy

Mechanical

From a building services strategy, the proposed development is separated into 3no distinct types of building. A traditional office building, a laboratory building and a warehouse/shelter building.

Office and Atrium:

The primary source of heating and cooling to the office areas will be a via a packaged VRF system utilising heat recovery. The roof mounted external condensers will be linked to internal units via a network of refrigerant pipework and individual offices and zones will be controlled independently of one another.

Fresh air will be provided from packaged air handling units located on the roof. The air handling plant will be carefully selected in order to ensure a high performance of heat recovery via thermal wheel and a low specific fan power. All new air handling units will be provided with heating and cooling coils served from central plant detailed in a later section. The air handling units will be fully controlled via the new BMS.

Circulation areas, stairwells and WC's will not be provided with cooling and will be heated via wall mounted radiators linked to the main LTHW heating distribution network.

WC areas have been located in cores that rise throughout the floors. As a result we are able to provide roof mounted extract fans ducted down through the building via a riser. The units will be twin fan version in order to provide a backup facility and will be carefully selected in order to ensure a low specific fan power. Each WC will be provided with a PIR and the fan speed will be modulated up and down via air pressure sensors within the ductwork.

Where possible, free cooling will be utilised via external grilles on the front façade of the building and the high level smoke vents in the atrium. It is anticipated that this would be used to cool the thermal mass of the building over the summer months and reduce the demand on the installed HVAC plant.

Laboratories:

Due to the nature of the laboratory usage it is not possible to utilise packaged heat recovery air handling plant due to the risk of cross flow contamination.

Extract fans are to be provided to exhaust stale air and remove hazardous fumes. Where possible, fans are to be provided with inverter driven speed control and rooms are to be grouped according to their usage in order to reduce the amount of plant. Filtration will be provided in order to ensure that pollutants aren't discharged into the atmosphere and the location of terminations will be co-ordinated in order to satisfy local regulations.

Fresh air will be delivered to the labs via roof mounted air handling units complete with variable speed inverters and controlled via the central BMS. The air handling units will be provided with heating and cooling coils from a central plant and will utilise a run-around coil in order to capture the waste heat from the extract system.

All fans and air handling plant will be carefully selected in order to ensure a satisfactory specific fan power and will be modulated dependant on internal demand.

General heating and cooling to the labs will be a via a packaged VRF system utilising heat recovery. The roof mounted external condensers will be linked to internal units via a network of refrigerant pipework and individual labs will be controlled independently of one another.

Warehouse/Shelter:

The warehouse element of the building is to be heated via wall mounted gas unit heaters with integral fans.

Heating and cooling to the small offices and supplementary areas surrounding the warehouse will be via a packaged VRF system utilising heat recovery. The external condensers will be linked to internal units via a network of refrigerant pipework and individual rooms will be controlled independently of one another.

General:

A new cold water main will enter the building where it will be pumped up to a roof mounted plant enclosure via a packaged booster set located at ground floor.

A central boiler arrangement will be provided in order to generate LTHW heating to serve frost coils and heating coils within all air handling plant, a primary coil within hot water cylinder(s) and any areas requiring heating via radiators. The boilers will be selected in order to ensure a minimum seasonal efficiency of 91% and will be capable of modulating in order to match the actual heating demand.

A central air cooled chiller plant will be installed in order to provide chilled water to coils within the new air handling units. The plant will be carefully selected in order to ensure a suitable seasonal efficiency.

All pumps to be variable speed inverter driven type in order to match the supply and demand.

Hot water to the site will be derived from new cylinders located within the roof mounted plant room. The cylinders will be heated via a primary coil served from the boilers and will be insulated in accordance with current building regulations.

The plantroom to be complete with intelligent building management controls system ensuring all plant is used as necessary. Controls package to be linked to internal and external temperature sensors and to provide compensated heating and optimisation facility as well as occupancy timings potentially night setback.

All heating and hot water distribution pipework within the plantroom and around the building to be insulated with appropriate material in order to minimise heat loss.

Incoming gas and water mains to be provided with pulse meters linked back to main controls package for usage monitoring purposes.

Electrical

The electrical installation shall meet the requirements of Part L (2013) of the Building Regulations.

A lighting system using energy efficient ultra-long life Light Emitting Diode (LED) sources will be used for all of areas with minimum high frequency fluorescent luminaires incorporated where an LED source is not available or feasible.

All office areas will be provided with intelligent daylight saving /PIR absence/presence detection plus on/off local control.

Dimming and daylight dimming facility to offer additional energy saving measures will be provided in areas across the building where savings can be realised and where practical.

External lighting shall also be controlled by a combination of presence detectors and daylight sensors to switch on presence detection from dusk and automatically switch off lighting at dawn.

Sub metering of final distribution boards for Lighting, Small Power and Mechanical Loads plant of high input rating will be installed.

Utilities Statement

Gas:

Although there are currently gas services on site, there is insufficient capacity to meet the demands of the proposed development. Following load assessments at design stage, an application will be submitted for a new metered supply to be installed at the front of the building.

An existing underground gas main will have to be re-routed in order to accommodate the new development. This may involve providing temporary services to 2no buildings.

Water:

Although there are currently 5no metered water supplies on site, there is insufficient capacity to meet the demands of the proposed development. Following load assessments at design stage, an application will be submitted for a new metered supply to be installed at the front of the building.

Electric:

The site is served via an SEC high voltage ring main feed serving 9no transformers strategically placed around the campus. Subject to final detailed design, it is assumed that there is sufficient electrical capacity within the existing high voltage networks to accommodate the proposed development.

Substations will however require relocation prior to the commencement of any constructions works.

Feasibility of renewable technologies

See Arup Energy Strategy report^[NF7].

7.0 Relationship with Adjacent Properties

The site

The site is located within an industrial area to the South of Reading City Centre, bounded industrial buildings to the South, Basingstoke Road/B3031 (to the East), Manor Farm Road (to the North) and Commercial Way/Longships Way (to the West). Immediately to the west of the site there is a residential development and there are two semi-detached dwellings on the corner of Gillette Way and Manor Farm Road. The Ordnance grid reference for the site is SU 71546 70488

The site slopes gently from north down to the south with a total cross fall of approximately 5.0m. The area to the north of the site is the leveled site of a Building C demolished in 2014 and Part Building B in 2012. The current surface car parking areas to the rear of west of Block and to the south east corner of the site are to be redeveloped.

The trees and landscaping to the east of the site in front of D Block are to remain as well as to the west of the development site in front of A Block.

The north east corner of the site is bounded with 2.1m palisade and the south east corner the fencing comprise of 2.1m high steel post steel post fencing. The south and north boundaries are bounded with 2.1m high palisade fencing. Three security controlled vehicular gates are provided to the east boundary.

The site is not located within a Conservation Area.

The proposed development

The proposed scheme will be of a high standard of design, compatible with the scale and character of the existing development, its neighbours and setting. The proposed development has been designed to be well related to the existing buildings on the site, enhance the current site, whilst providing the necessary accommodation required and relate to the surrounding area.

The new building is set behind the existing D Block which partially obscures its view from outside the site. Each area of the new building is clearly defined with its own form and massing, creating a series of individually legible spaces, which break up elevations and provides visual interest. The materials proposed for the elevations all relate to the original D Block and therefore maintain architectural continuity with its surroundings.

The multi storey car park also reflects the lines and massing of D Block and the stair cores depict architectural elements of D Block maintaining the architectural continuity of the site.

Noise etc from plant and equipment

It is Procter and Gamble's intention that none of the new plant associated with the development will exceed the levels determined in previous noise reports to the surrounding residential areas. Refer to section 7 Noise Impact Assessment.

Control of noise and disturbance during construction:

- The contractor will be required to minimize and monitor noise levels at boundaries and keep these within the limits / recommendations of BS5228.
- The contractor will be required to keep dust and disturbance to a minimum, and will be required to monitor dust levels / provide risk assessments for operations.
- The project will be planned and executed in full accordance with all relevant health and safety legislation, and in particular the Construction Design and Management Regulations. The safety of staff and the general public is always of paramount importance to all involved.
- Any Main Contractor considered for the project will have been stringently assessed with regards proven competency on similar construction projects.
- Any main contractor considered for the project will be required to be a member of the CIOB Considerate Constructors Scheme and comply with the Considerate Constructors Code which commits contractors to be considerate and good neighbours, as well as clean, respectful, safe, environmentally conscious, responsible and accountable.
- The construction site will be fully secured and segregated from staff and the public.
- The contractor will be required to actively manage all site / off site construction traffic movements.
- The Applicant will keep local residents regularly informed of progress and will also provide a telephone hotline during the construction period to enable residents to report problems and discuss concerns.

8.0 Construction Phasing

Phasing of Construction Works:

The development will be phased to ensure that the remaining occupied areas of the site can function on a day to day basis. It is anticipated that the temporary contractors site compound will be constructed to the rear of B Block. The north east surface car park will then be constructed, with the south east multi-storey car park following on. Block D will be refurbished along with the new office/lab block and shelter being constructed. Once this is complete the contractors compound will be taken down and the surface car park constructed to the rear of B Block.

Proposed phasing drawings are included in Appendix D.

Continued operation of the site during construction:

Safety, security and wellbeing of staff, visitors and neighbours to the site is absolutely paramount and will not be compromised by the works. The site will remain in operation for the duration of the works.

During construction, the phased construction sites will be completely segregated from the operational areas of the site via 2.0m high continuous solid hoarding. The construction site entrance and vehicle movements onto the site will be strictly controlled to ensure that security is maintained and safety never compromised.

Noise and dust will be independently monitored and strictly controlled.

The Contractor undertaking the works will be contractually bound by a strict set of rules and requirements which will ensure that the works are undertaken safely and with absolute minimum disruption.

The main contractor considered for the project will be required to be a member of the CIOB Considerate Constructors Scheme and comply with the Considerate Constructors Code which commits contractors to be considerate and good neighbours, as well as clean, respectful, safe, environmentally conscious, responsible and accountable.

9.0 Noise Impact Assessment

The manufacturing plant on the site operates a variety of plant that is used during the manufacturing process, the majority being housed within the main production building. However, there are a number of flue extracts, process chillers and air handling units which contribute to the local noise environment. In addition, there are a significant number of vehicle movements to and from the site.

Procter and Gamble is acutely aware of their environmental commitment and where practicable, they will implement environmental best practice to minimize their impact on the environment. This commitment includes management and engineering noise control measures to ensure that their operations are undertaken in a manner which will not disturb nearby noise-sensitive dwellings. Immediately to the west of the site there is a residential development and there are two semi-detached dwellings on the corner of Gillette Way and Manor Farm Road.

Site Operations

The site operates on a near 24 hours a day, seven days a week basis and the majority of the noise is produced by HGV movements from the dispatch end of the main building travelling along the site boundary with the new residential development. These movements will occur throughout the day and night. In addition, there are a significant number of fixed noise sources present along this elevation of the facility. For reference, these are presented below in no particular order:

- Comfort chiller units (x2no) and air handling units (3no) mounted on the roof of the main process building facing to the west, i.e. towards Longships Way (units cycle on and off and produce constant noise levels);
- Process chiller units situated within the centre of the site;
- Transformers operating within the main building on the western façade at ground level. Ventilation provided by acoustic louvres (units cycle on and off and produce constant low frequency noise levels);
- Flue extracts situated in the centre of the complex at roof height and a number of extracts throughout the site e.g. kitchen extract;
- Boiler room situated in the centre of the complex;
- Standby generators operate as and when required; and
- Noise breakout from the buildings (minimal).

Procter and Gamble commissioned RPS to prepare environmental noise impact assessments in 2008, 2011 and 2014. The latest report is attached in Appendix E. It is Procter and Gamble's intention that none of the new plant associated with the development will exceed the levels determined in the report to the surrounding residential areas. All new externally mounted plant will be contained within acoustically treated enclosures.

APPENDIX A
PHOTOGRAPHS



Existing aerial site photograph



Front elevation viewed from the north east



Front elevation viewed from the south east



South east end of D Block front elevation



Front elevation vehicular access through D Block



Current surface car park to south east corner of the site

Appendix B

**Consent to the Discharge of Trade Effluent
dated 1 July 2011 with Thames Water**



THAMES WATER UTILITIES LTD.
Water Industry Act 1991
Water Act 2003
Environmental Protection Act 1990
Environment Act 1995
Pollution Prevention and Control Act 1999
CONSENT TO THE DISCHARGE OF TRADE EFFLUENT

WHEREAS

1. Gillette UK Ltd Trading as Procter and Gamble
The Heights
Brooklands
Weybridge
Surrey
KT13 0XP

is/are the occupier(s)/owner(s) (hereinafter called THE APPLICANT) of the trade premises known as
Procter and Gamble Reading Plant and situate at
452 Basingstoke Road
Reading
Berkshire
RG2 0QE

(hereinafter called THE PREMISES) and by notice dated First day of July, Two Thousand and Eleven has/have made application to Thames Water Utilities Ltd. (hereinafter called THE COMPANY) to Consent to the discharge of Trade Effluent by him/her/them from THE PREMISES into the Company's public foul water and/or combined sewers.

2. NOW THEREFORE in exercise of the powers conferred upon it in that behalf as a sewerage undertaker by the Water Industry Act 1991, the Company

HEREBY CONSENTS to the discharge of Trade Effluent from the Premises into the sewer(s)
(as hereinafter defined) subject to the following conditions:

- | | |
|-----------------------------------|---|
| Nature and composition | 1. Multiple Discharge Points - See Appendix 2 for details. |
| Sewer(s) affected | 2. Multiple Discharge Points - See Appendix 2 for details.
And more particularly shown in line(s) on the annexed plan and there on coloured Red.
The point(s) at or through which the trade effluent is to be discharged is(are) shown on the said plan and there on marked blue. |
| Maximum quantity to be discharged | 3. Multiple Discharge Points - See Appendix 2 for details. |

Maximum rate of discharge	4. Multiple Discharge Points - See Appendix 2 for details.
Matter to be eliminated prior to discharge to the sewer(s)	5. (a) There shall be eliminated from the Trade Effluent before it is discharged into the sewer(s) any matter, which, either alone or in combination with any matter with which it is likely to come into contact while passing through any sewers, would injure or obstruct any such sewers or cause injury to and/or damage to the health of any person lawfully present in such sewers, pumping stations or sewage treatment works or would makespecially difficult or expensive the treatment or disposal of their contents and in particular but without prejudice to the generality of the foregoing words the following matters:- (i) Petroleum spirit (ii) Calcium carbide (iii) Thiourea and thiourea derivatives (iv) Non biodegradable detergents (b) The Trade Effluent shall not contain substances listed in Schedule 1 of the Trade Effluents (Prescribed Processes and Substances) Regulations 1989, as amended, at a concentration greater than background concentration as defined in such regulations. (c) The Trade Effluent shall not contain any of the substances listed in APPENDIX 1 at a concentration expressed in milligrams per litre greater than that stated. SEE APPENDIX 1
Temperature	6. No Trade Effluent shall be discharged which has a temperature higher than 43.3 degrees Celsius (110 degrees Fahrenheit).
Acidity or alkalinity	7. No Trade Effluent shall be discharged the pH value of which is less than 6.0 or greater than 11.0.
Condensing water	8. No condensing water shall be discharged.
Changes in occupier or process	9. The Applicant of the Premises shall forthwith give to the Company notice in writing of any changes or proposed changes in the company name, address, occupier, or processes of manufacture or the nature of the raw materials used or of any other circumstances which may alter the nature and composition or the volume of the Trade Effluent or may result in the permanent cessation of the discharge.
Commencement of Discharge	10. The commencement date of this Consent will be the date on which the Consent is signed by the Company's Senior Consultant for Wastewater Quality (or any other officer or employee duly authorised by the Company for these purposes). The Applicant must not discharge the Trade Effluent before the commencement date.

Payment	11. The Applicant of the Premises shall pay to the Company for the Trade Effluent discharged into the sewer (a) A sum calculated in accordance with the provisions contained in the Company's Charges Scheme together with (b) The amount of any additional expenses which the Company may from time to time incur with respect to the monitoring, analysis, reception, treatment and disposal of the Trade Effluent. All sums payable to the Company under this condition shall become due and payable on demand.
Entry and samples	12. The Applicant of the Premises shall permit duly authorised representatives of the Company to inspect, examine and test at all reasonable times any works and apparatus installed in connection with the Trade Effluent and to take samples of the Trade Effluent.
Inspection	13. An inspection chamber or manhole shall be provided and maintained by the Applicant of the Premises in a suitable position defined in connection with each pipe through which the Trade Effluent being discharged and such inspection chamber or manhole shall be so constructed and maintained by the Applicant as to enable duly authorised representatives of the Company to take samples at any time of the matter passing into the sewer(s) from the Premises.
Measurement and determination of discharge	14. (a) A notch gauge and continuous recorder or some other apparatus suitable and adequate for measuring and automatically recording the volume, nature, composition and rate of discharge of the Trade Effluent being discharged into the sewer(s) shall, if required by the Company be provided and maintained by the Applicant of the Premises to the satisfaction of the Company in connection with every pipe through which the Trade Effluent is being discharged. (b) It is a requirement of this Consent that if a trade effluent meter(s) is/are installed it/they will be calibrated at least annually or more frequently if specified by the company and certificated by a suitably qualified person and/or company approved by the company.
Records	15. (a) Records in such a form as the Company may require shall be kept of the volume, rate of discharge, nature and composition of the Trade Effluent discharged into the sewer(s) and shall be available at all reasonable times for inspection by duly authorised representatives of the Company and copies of such records shall be sent to the Company on demand.

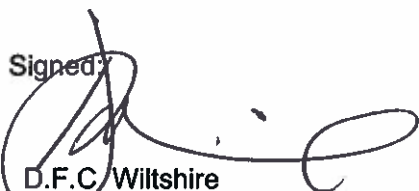
(b) If the notch gauge and continuous recorder or other apparatus aforesaid ceases to register or measure correctly then, unless otherwise agreed, the quantity of the Trade Effluent discharged into the sewer(s) during the period from the date on which the records of the volume of the Trade Effluent discharged into the sewer(s) were last accepted by the Company as being correct up to the date when the notch gauge and continuous recorder or other apparatus aforesaid again registers correctly shall, for the purpose of any payment to be made to the Company, be based on the average daily volume of the Trade Effluent discharged during the period of one month preceding the date on which the said records were last accepted as aforesaid or during the month immediately after the notch gauge and continuous recorder or other apparatus aforesaid has been corrected, whichever is the higher.

(c) The foregoing provisions of this condition shall be of no effect so long as there is available to the satisfaction of the Company some other method approved by the Company of sampling the Trade Effluent or of determining, measuring and recording the volume and rate of discharge and the nature and composition of the Trade Effluent discharged.

Vacation of Site

16. The Applicant(s) must notify the Company in writing at least 21 days in advance of the following events:
- (a) Vacation of the Premises by the Applicant for any reason, whether permanent or temporary;
 - (b) Change of ownership or occupation of the Premises;
 - (c) The Applicants entry into liquidation whether voluntarily or compulsorily or bankruptcy, if an individual;
 - (d) The presentation of a petition for the appointment of an administrator or a receiver or manager in respect of the Applicants undertakings;
 - (e) Cessation of discharge of Trade Effluent from the Premises.

Signed:



D.F.C. Wiltshire

Senior Consultant - Wastewater Quality

Duly authorised to sign on behalf of the company

Dated

26th day of July 2011

NOTES:

- a) All communications should be sent to the following address:
Senior Consultant - Wastewater Quality
Thames Water Utilities Ltd
Crossness Sewage Treatment Works
Belvedere Road
Abbey Wood
London
SE2 9AQ
- b) Your attention is drawn to the right of appeal to the Director General of Water Services conferred by Section 122 of the Water Industry Act 1991 if you are aggrieved by any condition attached to this Consent.
- c) A fixed charge for all sewerage services plus a domestic sewerage charge is payable in addition to charges for Trade Effluent flows.
- d) A copy of Thames Water Utilities Ltd Charges Scheme is obtainable from the Thames Water Customer Centre.
- e) If you discharge Trade Effluent in contravention of a condition of this Consent you will be guilty of a criminal offence and may be subject to prosecution.

APPENDIX 1 - SUBSTANCES

The Trade Effluent shall not contain any of the substances listed below at a concentration expressed in milligrams per litre greater than that stated:

Determinand Name	Consented Limit
Chemical Oxygen Demand	5000.0
Sulphate	1800.0
Chloride	1500.0
Settleable Solids	1000.0
Anionic Synthetic Detergent	200.0
Rapidly Settleable Solids	100.0
Available Chlorine	50.0
Total Phosphorus	15.0

THERE ARE NO FURTHER LIMITS IN THIS APPENDIX

APPENDIX 2 - DISCHARGE POINTS

Multiple Discharge Point Details:

Discharge Point ref.	TE Nature	Sewer	Consented Volume (m ³ /day)	Consented Rate (m ³ /hour)	Consented Flow (l/s)
1	shave gel & foam mixing process washouts, filling line washouts and waste water from test tank (softened water).	225 mm in Basingstoke Road	150.000	25.000	7.000
2	reverse osmosis plant & softened water processes.	225 mm Commercial Road	150.000	20.000	5.600

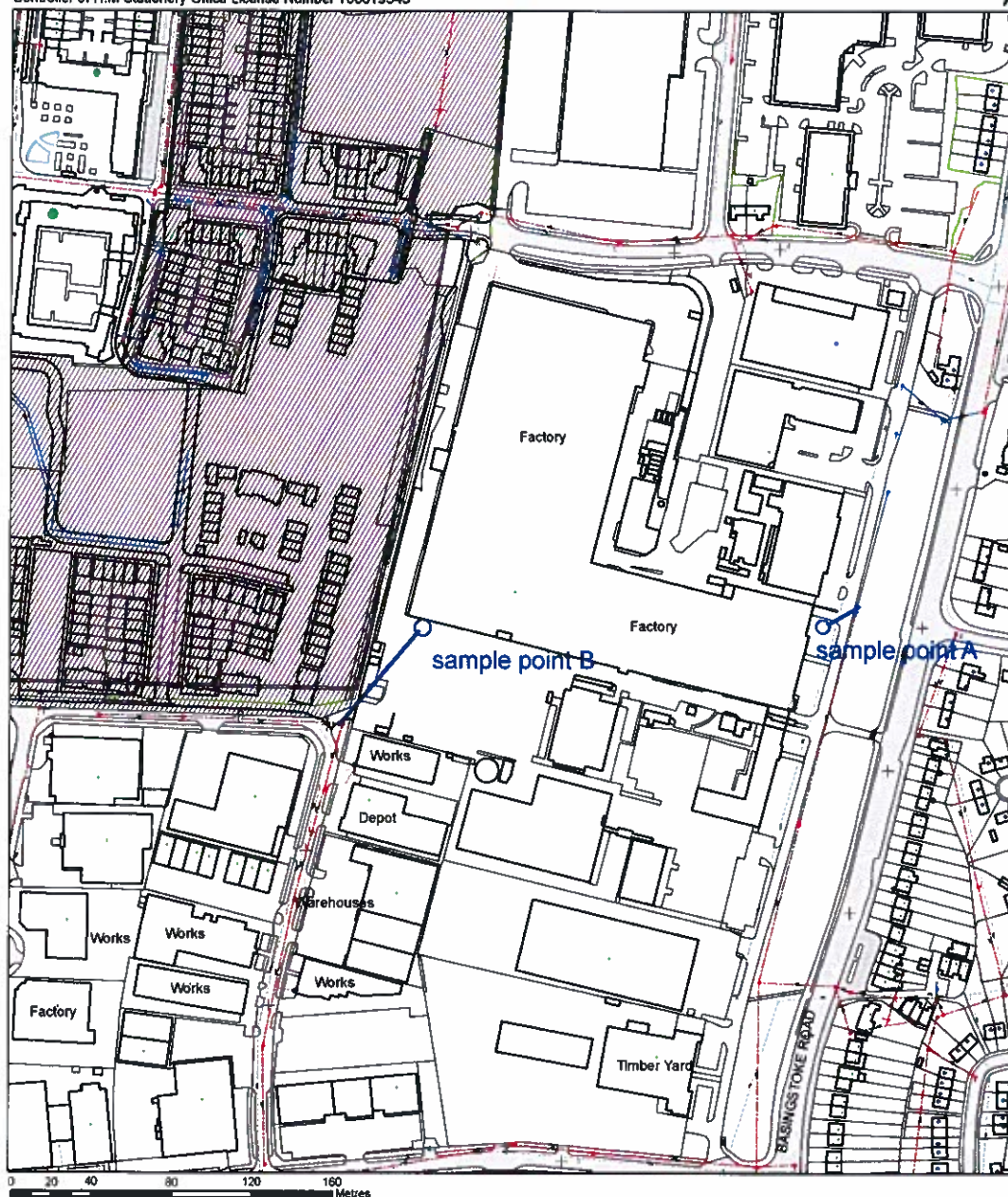
THERE ARE NO MORE DISCHARGE POINTS

APPENDIX 3 - SEWER PLAN

gis plan of Gillette

Based on the Ordnance Survey Map with the Sanction of the
Controller of H.M Stationery Office License Number 100019345

Thames Water



The position of the apparatus shown on this plan is given without obligation and warranty, and the accuracy cannot be guaranteed. Service pipes are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by Thames Water for any error or omission. The actual position of mains and services must be verified on site before any works are undertaken. Crown copyright Reserved.

Printed At (A4) : 1:2500
Printed By : SSCOTT
Print Date : 02/03/2011 14:13
Map Centered On : 471546,170488
Grid Reference : SU7170SE

APPENDIX 4 - ADDITIONAL CLAUSES

NO ADDITIONAL CLAUSES AVAILABLE

Appendix C

**Ground investigation report by
ESG reference 3894819/PTE dated 21 April 2010**

The Oasts
Newnham Court
Bearsted Road
Maidstone
Kent
ME14 5LH

Tel: + 44 (0) 1622 632100
Fax: + 44 (0) 1622 739620
sales@esg.co.uk

Galglass Limited
321 Hough Lane
Wombwell
BARNSLEY
South Yorkshire
S73 0LR

For the attention of Paul Tattershall

Geotechnical Department

Our ref: 3894819/PTE

21st April 2010

Dear Sirs

RE: GILLETTE UK (READING)

Further to our attendance at the above site on 26th March 2010 to carry out a single 20m deep cable percussion borehole, please find attached the engineer's log and laboratory results associated with the testing carried out on the recovered samples.

The subject site is located within the Gillette UK complex in Reading at approximate National Grid Reference SU 715704, as shown on Figure 1.

It is understood that the development comprises the construction of a storage tank with dimensions 8.14m high and 12.5m in diameter and will be constructed on a proposed raft foundation that is 13.5m in diameter.

A ground investigation was requested by Galglass Limited to provide details of the ground conditions on the site as well as geotechnical parameters associated with the assessment of shear strength of the bearing stratum and settlement of the foundations associated with the proposed development.

Reference to publications of the British Geological survey indicates that the site is underlain by London Clay however further inspection of these documents indicates that there has been mineral extraction workings in this area.

Details of the ground conditions encountered on the site are presented on the exploratory hole log included as Figures A1 within this letter report. This log indicates the nature and depth of the strata encountered together with the type and frequency of the samples recovered, the results of any in-situ testing and any groundwater observations. Reference should be made to this log for detailed descriptions and a summary only is presented below. The engineer's log has been prepared in accordance with BS5930: "Code of practice for site investigations".

Brick Fill, as described by the cable percussion operator, was encountered at ground level to 0.4m below ground level. Below this stratum, orange brown sandy, gravelly CLAY was encountered and proved to 1.8m below ground level. The gravel observed within this stratum typically comprised flint. At 1.8m, an orange brown, clayey, gravelly SAND was encountered to 2.2m below ground level. The gravel within this stratum was also noted to comprise flint. Both these strata appear to be Made Ground.

Beneath the Made Ground, slightly flint gravelly CLAY was encountered. This stratum has been tentatively described as Disturbed London Clay and was proved to 3.8m below ground level.

The London Clay was observed below this disturbed horizon as dark grey CLAY and was proved to 9.7m below ground level.

Below the London Clay, slightly clayey fine and medium SAND was encountered to 11.5m below ground level. This stratum has been described as part of the Lambeth Group.

Beneath this sandy horizon, grey CLAY was encountered to 18m below ground level whereupon the material encountered becomes brown CLAY to the base of the borehole at 20m below ground level. Both clayey strata have been described as part of the Lambeth Group.

Groundwater was encountered in the cable percussion borehole at 7.5m and 10.2m below ground level with rises to 6m and 7.5m respectively after 20 minutes. It should be noted that groundwater levels may vary both seasonally and in the long term.

Made Ground was encountered in the cable percussion borehole to 2.2m below ground level. Foundations bearing within Made Ground are not recommended due to the unpredictable strength and settlement characteristics of this stratum and the risk of collapse settlement.

As discussed above publications of the British Geological Survey suggest that there are a number of mineral extraction workings in the area around the Gillette complex, which may be the reason for the depth of Made Ground as well as the possible disturbance to the top of the London Clay as described on the engineer's log from 2.2m to 3.8m below ground level.

It is understood from Glaglass that the foundations associated with the proposed tank will impose a load of 100kN/m².

Based on the ground conditions encountered in the cable percussion borehole, consideration may be given to the construction of a raft foundation bearing within the disturbed horizon London Clay. However, the disturbed nature of this stratum has impacted the shear strength such that it is lower than would be normally expected, which in turn affects the bearing capacity. Traditional assessment of bearing capacity incorporates a safety factor of 3 into the analytical process however taking this option would result in a presumed nett bearing value of 70kN/m². In order to achieve the required design bearing value of 100kN/m² the safety factor would have to be reduced to about 2.2.

In the event that the safety factor of 2.2 is validated, the raft foundation for the proposed tank should bear at least 0.3m below any Made Ground or at least 0.3m into the disturbed London Clay. Consideration could be given to excavating the Made Ground and replacing it with an engineered fill however this latter material must be compacted in such a way as to ensure that the load from the raft foundation is transferred directly to the underlying disturbed London Clay.



As requested, a settlement analysis has been undertaken based upon an imposed load of 100kN/m². Taking values of m_v values from 0.2 to 0.35, the settlement associated with the imposed load would range from 50mm to 90mm.

Sulphate and pH testing was carried out on three soil samples recovered from the cable percussion borehole to assess buried concrete requirements on the site.

The ground investigation established that the underlying groundwater condition would be classified as 'mobile'.

In accordance with BRE Special Digest 1:2005 Third Editions "Concrete in Aggressive Ground", Table C1 "Aggressive Chemical Environment for Concrete (ACEC) classification for brownfield locations", the Design Sulphate Class and ACEC Class have been established based upon the available laboratory results. The results of the water sulphate and pH determinations indicate that the concrete could be designed to Class DS-1, ACEC Class AC-1. However, due to the frequent presence of selenite within the London Clay considered should be given to adopting Class DS-3 conditions and ACEC Class AC-3.

Attention is drawn to the fact that, whilst every effort has been made to ensure the accuracy of the data supplied and any analysis derived from it, the possibility exists of variations in ground and groundwater conditions around the exploratory hole position. No liability can be accepted for any such variations in these conditions. Furthermore, any recommendations are specific to the development as detailed in this report, and no liability will be accepted should they be used for the design of alternative schemes without prior consultation with Environmental Sciences Group Limited.

Please do not hesitate to contact us should you have any queries regarding the above.

Yours faithfully

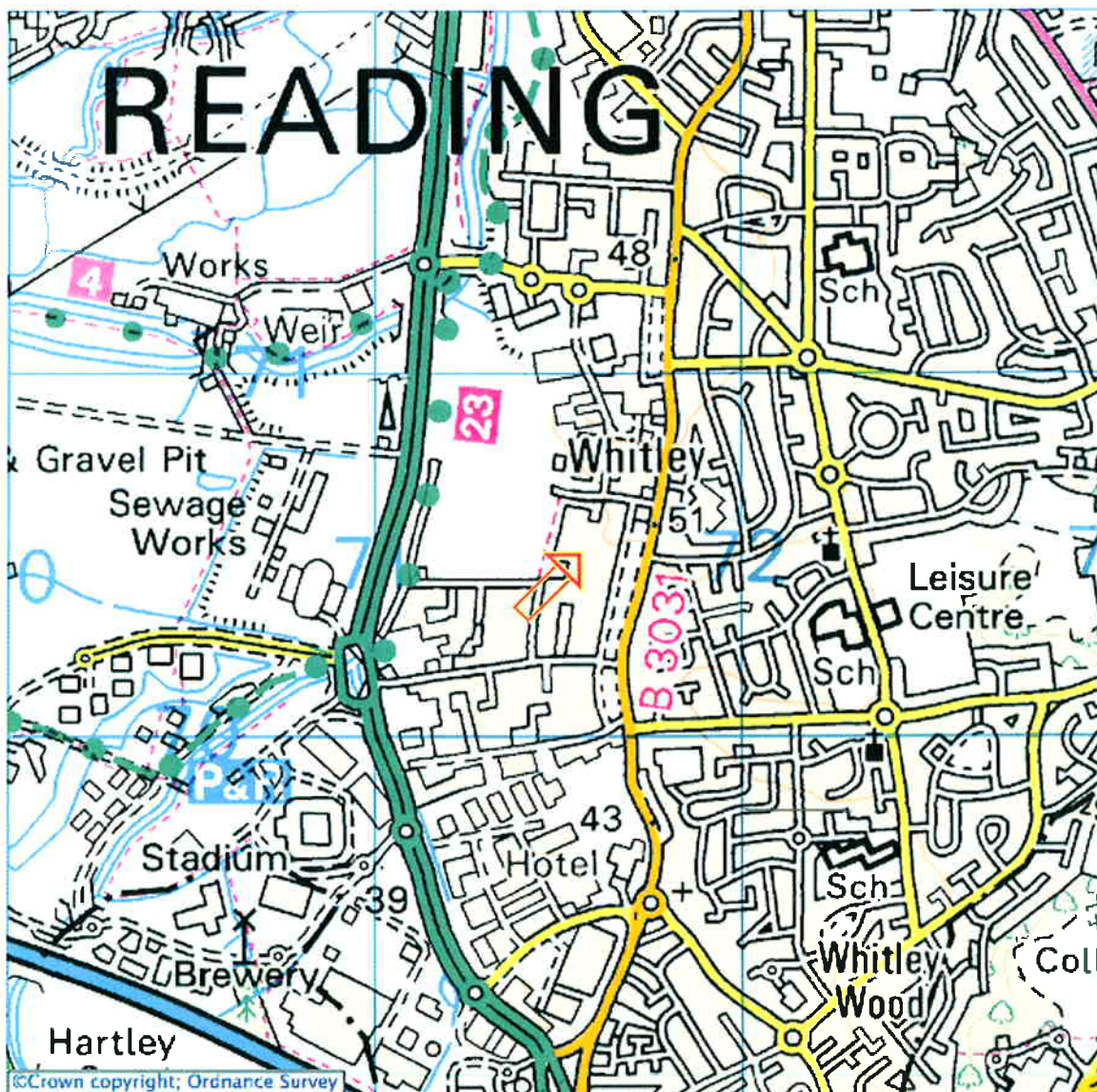
A handwritten signature in black ink that reads 'Paul T. Ettinger'. The signature is written in a cursive style with a long horizontal line extending from the end of the name.

PAUL T. ETTINGER

Principal Engineer

For and on behalf of Environmental Services Group Limited

Enc. Site location plan, engineer's log, laboratory test results



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Site Location Plan

Scale: NTS

FIGURE 1

Client: Galglass Limited						Hole Diameter (mm): 150 to 20.00m		BOREHOLE NUMBER BH01 Sheet 1 of 2		
Method: Cable Percussion						Casing Dia. (mm): 150 to 12.00m				
Date Started: 26/03/10		Co-ordinates $\begin{matrix} E \\ N \end{matrix}$		Ground Level (m AOD)		Ref. No: 3894819				
Backfill/Well	Water	Samples		In Situ Tests		Reduced	Depth & (Thickness)	Description of Strata	Legend	
Depth (m)	Legend	Depth (m)	Depth (m)	Type	Type	Results	Level (mAOD)			
			0.50	D				(0.40)	Made Ground - Brick Fill (Drillers description)	
			1.00	D				0.40	Firm, orange brown, slightly sandy, slightly gravelly CLAY. Sand is fine to coarse. Gravel is angular to sub-rounded, fine and medium flint. (Made Ground)	
			1.20		S	N = 8		(1.40)		
			2.00	D				1.80		
			2.00 - 2.45	U		U = 30		(0.40)	Orange brown, slightly clayey, slightly gravelly SAND. Sand is fine to coarse. Gravel is angular to sub-rounded, fine and medium flint. (Made Ground)	
			2.50	D				2.20		
			3.00	D	S	N = 10		(1.60)	Stiff, high strength, dark brown, slightly gravelly CLAY. Gravel is angular to sub-rounded, fine to coarse flint. Becoming grey at base of stratum. (Disturbed London Clay)	
			4.00	D				3.80		
			4.00 - 4.45	U		U = 30			Stiff, medium strength, dark grey, CLAY. Slightly fine sandy at top and base of stratum. (London Clay)	
			4.50	D						
			5.00	D	S	N = 19				
			6.00	D						
			6.50 - 6.95	U		U = 80		(5.90)		
			7.00	D						
			8.00	D	S	N = 46				
			9.00	D						
			9.50 - 9.95	U		U = 100				
			9.70	D				9.70		
Continued on next sheet										
General Remarks: 1. Service avoidance pit excavated prior to drilling. 2. Groundwater encountered at 7.5m; rose to 6.0m after 20 minutes and at 10.2m; rise to 7.5m after 20 minutes. 3. Chiselling techniques used to advance borehole from 9.7m to 9.8m for 1 hour and from 9.8m to 10.2m for 1 hour.										
Driller:	JM	BOREHOLE RECORD Scale 1:50 For explanation of symbols and abbreviations see Key Sheet								
Logged:	BN									
Checked:		Gillette UK (Reading)								
Appr'd:										
		FIG A1								

Client: Galglass Limited						Hole Diameter (mm): 150 to 20.00m		BOREHOLE NUMBER BH01 Sheet 2 of 2	
Method: Cable Percussion						Casing Dia. (mm): 150 to 12.00m			
Date Started: 26/03/10		Co-ordinates E_N		Ground Level (m AOD)		Ref. No: 3894819			

Backfill/Well		Water	Samples		In Situ Tests		Reduced	Depth & (Thickness)	Description of Strata	Legend
Depth (m)	Legend	Depth (m)	Depth (m)	Type	Type	Results	Level (mAOD)	(m)		
		10.20							Greenish grey, slightly clayey SAND. Sand is fine and medium. Detail 9.70m - 11.50m : (Lambeth Group)	
			11.00	D	S	N = 50/225mm		(1.80)		
			11.50		S	N = 37		11.50	Very stiff, high strength, grey CLAY. Becoming light grey mottled reddish grey with depth. (Lambeth Group)	
			12.00	D						
			12.50 - 12.95	U		U = 100				
			13.00	D						
			14.00	D	S	N = 50/225mm		(6.50)		
			15.00	D						
			15.50		S	N = 50				
			16.00	D						
			17.00	D	S	N = 50/225mm				
			18.00	D				18.00	Firm, brown CLAY. (Lambeth Group)	
			18.50		S	N = 50/275mm				
			19.00	D				(2.00)		

General Remarks:		End of Borehole at 20.00 m	
Driller:	JM	BOREHOLE RECORD Scale 1:50 For explanation of symbols and abbreviations see Key Sheet	
Logged:	BN		
Checked:		Gillette UK (Reading)	
Appr'd:			

FIG A1

Environmental Services Group Ltd
2 Newton Close
Drayton Fields Industrial Estate
Daventry
Northants NN11 8RR
Telephone: +44 (0) 1327 703828
Facsimile: +44 (0) 1327 300154

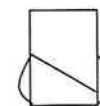


TEST REPORT

Determination of Undrained Shear Strength in Triaxial Compression

Client:	ESG Limited	Report No:	3894819/10/1	
	The Oasts, Newnham Court	Our Ref:	DAM0027239	
	Bearsted Road	Date Sampled:	26.03.10	
	Maidstone	Date Received:	07.04.10	
	ME14 5LH	Sampled By:	Client	
Contact:	Louise Rowe	Sampling Certificate:	Not Received	
Site:	Gillette UK	Sample Type:	U100	
Sample Details:	Laboratory Reference:	45111877	45111878	45111880
	Location:	BH1	BH1	BH1
	Depth (m):	2.00-2.45	4.00-4.45	12.50-12.95
	Initial Height (mm)	207	207	207
	Initial Diameter (mm)	103	101	102
	Bulk Density (Mg/m³)	2.01	1.84	2.16
	Moisture Content (%)	25	26	22
	Dry Density (Mg/m³)	1.60	1.47	1.76
	Test Conditions:	Cell Pressure (kPa)	50	80
Rate of Strain (mm/min.)		2.5	2.5	2.5
Failure Conditions:	Max Deviator Stress (kPa)	57	108	459
	Strain (%)	6.5	7.3	8.4
	Shear Strength (kPa)	28	54	230

Failure Diagram:



Mode of Failure:	Barrel	Barrel/Shear	Barrel/Shear
Depth of test specimen from base within original sample (mm):	40	28	N/A

Sample Description:

45111877	Orange brown slightly sandy CLAY with occasional gravel
45111878	Dark brown CLAY
45111880	Red grey CLAY

Comments:	Sample Preparation:	Undisturbed
	Orientation:	Maintaining sample direction.
	Membrane:	Latex rubber 0.40mm thick.

Certified that the test was carried out in accordance with BS 1377-7 :1990, Method 8

Certified that the Moisture Content was determined in accordance with BS 1377-2:1990, Method 3.2

Page 1 of 1
Date: 15.04.10

Signed:

[] M. Carr - Section Manager
[✓] D. Berrill - Laboratory Manager

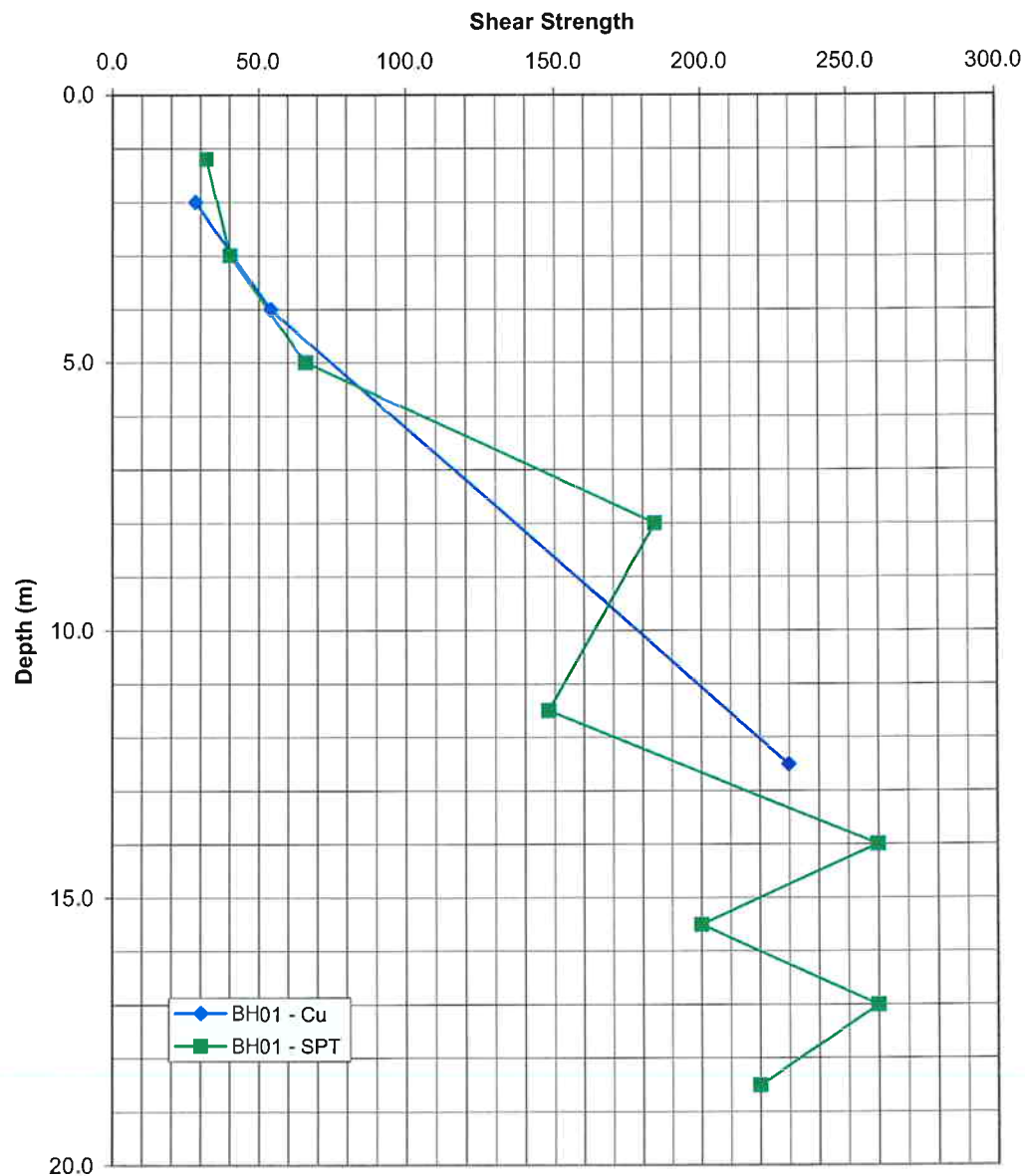
For and on behalf of Environmental Services Group Limited

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Job. No.: 3894819	Scale: N.T.S	Date	Drawn by	Checked	Approved
Site: Gillette UK - Reading		19/04/10	LKR		



SHEAR STRENGTH PROFILE

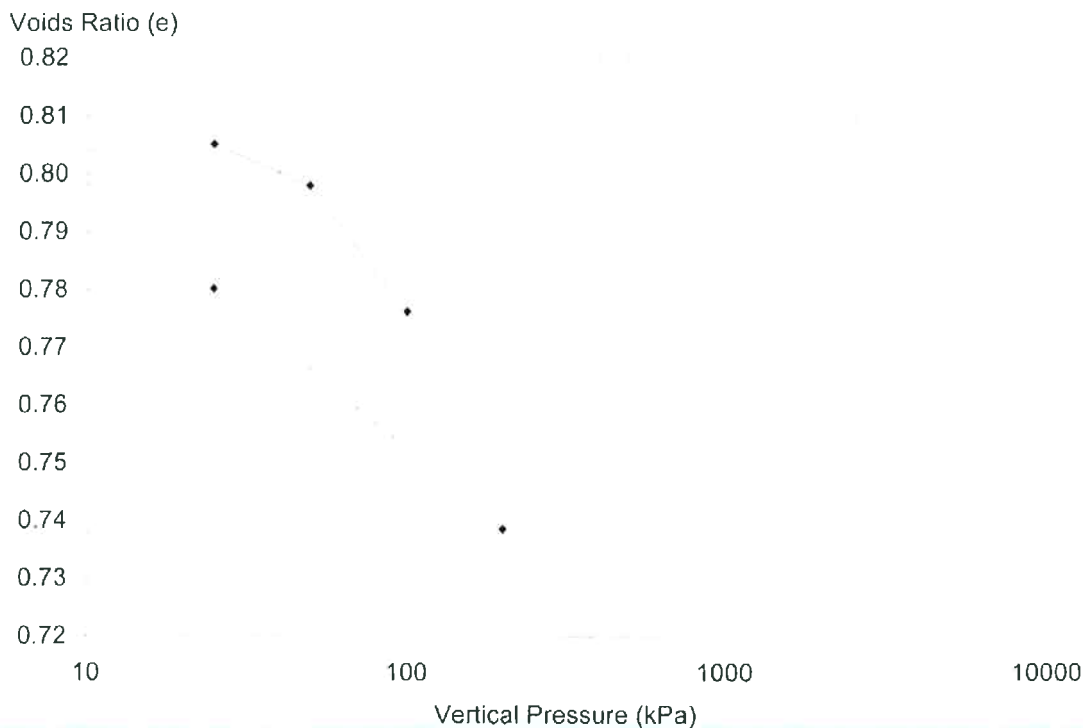
CONSOLIDATION TEST REPORT

B.S. 1377-5:1990

Client: ESG Limited
Address: The Oasts, Newnham Court, Bearsted Road, Maidstone ME14 5LH
Site: Gillette UK
Location: BH1
Visual Description: Orange brown slightly sandy CLAY with occasional gravel
Initial Moisture Content 29 %
Initial Bulk Density 1.97 Mg/m³
Initial Dry Density 1.53 Mg/m³
Assumed Particle Density 2.76 Mg/m³
Orientation of specimen: Test specimen taken in same direction as sampling.

Report No. 3894819/10/2
Lab. Ref. 45111877
Reported: 19.04.10
Received: 07.04.10
Depth (m): 2.00-2.45

Lab. temperature 18.5-20.0 °C
Initial Voids Ratio 0.809
Degree of Saturation 100.0 %
Final Moisture Content 29.7 %



Increment No.	1	2	3	4	5
Pressure (kPa)	25	50	100	200	25
Settlement (mm)	0.036	0.110	0.335	0.725	0.294
Voids Ratio	0.805	0.798	0.776	0.739	0.780
Mv (m ² /MN)		0.16	0.24	0.21	
Cv (m ² /year)		9.63	1.64	1.21	
t90		4.00	23.04	30.25	

The test was carried out in accordance with BS 1377- 5:1990, Clause 3
t90 value determined by root time curve-fitting method.

Signed M. Carr M. Carr - Section Manager
For and on behalf of Environmental Services Group Limited

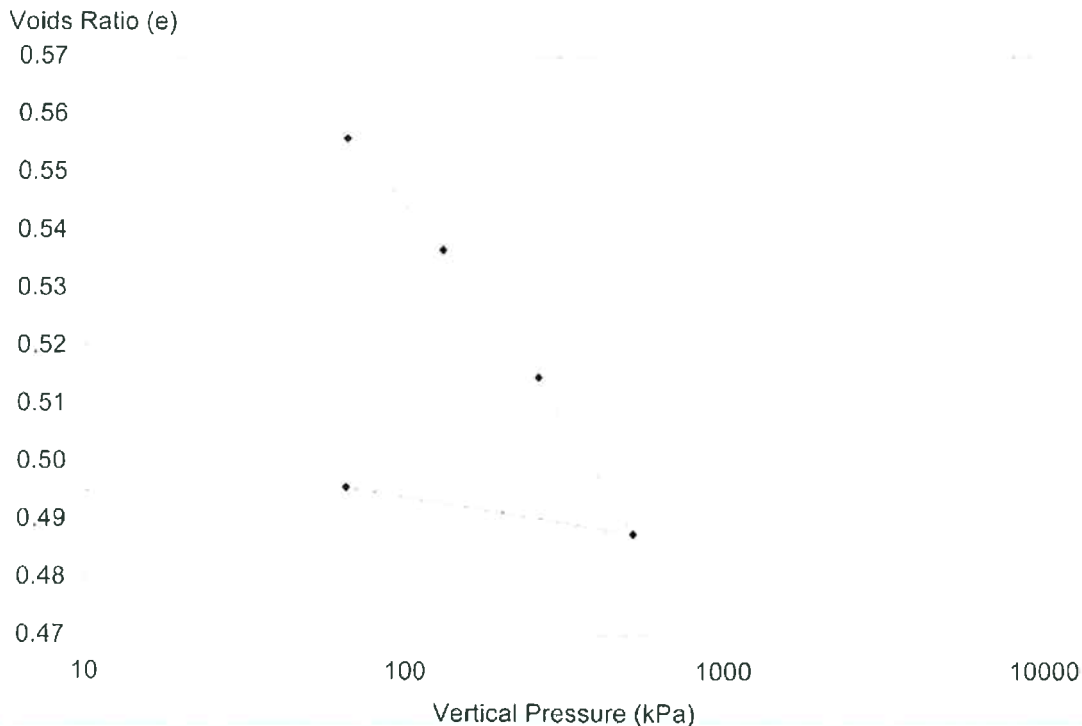
CONSOLIDATION TEST REPORT

B.S. 1377-5:1990

Client: ESG Limited
Address: The Oasts, Newnham Court, Bearsted Road, Maidstone ME14 5LH
Site: Gillette UK
Location: BH1
Visual Description: Grey slightly sandy CLAY
Initial Moisture Content 22 %
Initial Bulk Density 2.10 Mg/m³
Initial Dry Density 1.72 Mg/m³
Assumed Particle Density 2.75 Mg/m³
Orientation of specimen: Test specimen taken in same direction as sampling.

Report No. 3894819/10/3
Lab. Ref. 45111879
Reported: 21.04.10
Received: 07.04.10
Depth (m): 6.50-6.90

Lab. temperature 18.5-20.0 °C
Initial Voids Ratio 0.597
Degree of Saturation 100.0 %
Final Moisture Content 21.2 %



Increment No.	1	2	3	4	5
Pressure (kPa)	65	130	260	520	65
Settlement (mm)	0.480	0.706	0.966	1.285	1.190
Voids Ratio	0.556	0.537	0.515	0.488	0.496
Mv (m ² /MN)	0.39	0.19	0.11	0.07	
Cv (m ² /year)	47.31	14.41	14.02	13.58	
t90	0.81	2.56	2.56	2.56	

The test was carried out in accordance with BS 1377- 5:1990, Clause 3
t90 value determined by root time curve-fitting method.

Signed M. Carr M. Carr - Section Manager
For and on behalf of Environmental Services Group Limited

CONSOLIDATION TEST REPORT

B.S. 1377-5:1990

Client: ESG Limited
Address: The Oasts, Newnham Court, Bearsted Road, Maidstone ME14 5LH
Site: Gillette UK
Location: BH1
Visual Description: Grey brown CLAY
Initial Moisture Content 16 %
Initial Bulk Density 2.27 Mg/m³
Initial Dry Density 1.96 Mg/m³
Assumed Particle Density 2.84 Mg/m³
Orientation of specimen: Test specimen taken in same direction as sampling.

Report No. 3894819/10/4
Lab. Ref. 45111880
Reported: 21.04.10
Received: 07.04.10
Depth (m): 12.50-12.95

Lab. temperature 18.5-20.0 °C

Initial Voids Ratio 0.448

Degree of Saturation 100.0 %

Final Moisture Content 16.6 %

Voids Ratio (e)

0.44

0.43

0.42

0.41

0.40

0.39

0.38

0.37

0.36

0.35

0.34

10

100

1000

10000

Vertical Pressure (kPa)

Increment No.	1	2	3	4	5
Pressure (kPa)	125	250	500	1000	125
Settlement (mm)	0.412	0.577	0.834	1.203	0.862
Voids Ratio	0.417	0.405	0.386	0.358	0.383
Mv (m ² /MN)	0.17	0.07	0.06	0.04	
Cv (m ² /year)	250.29	19.82	11.72	10.16	
t90	0.16	1.96	3.24	3.61	

The test was carried out in accordance with BS 1377- 5:1990, Clause 3
t90 value determined by root time curve-fitting method.

Signed M. Carr M. Carr - Section Manager
For and on behalf of Environmental Services Group Limited

Environmental Scientifics Group Limited
Queenslie Court
139 Summerlee Street
Glasgow
G33 4DB
Telephone: +44(0) 141 774 6271
Facsimile: +44(0) 141 774 9280



TEST REPORT

Analytical Chemistry Test Report

<u>Client:</u>	GALGLASS LIMITED	<u>Report No:</u>	GLA0000981/1
<u>Address:</u>	The Oasts Newnham Court Bearsted Road Maidstone Kent ME14 5LH	<u>Our Contract Ref:</u>	3894819
		<u>Order Number:</u>	3894819
		<u>Report Date:</u>	19 April 2010
<u>Client Contact:</u>	Louise Rowe		
<u>Site:</u>	Gillette UK		
<u>Sample Details:</u>	3 samples submitted for analysis.		
	Sampled by:	Client	
	Date Sampled:	26 March 2010	
	Samples Submitted by:	Maidstone Office	
	Date Received:	09 April 2010	
	Date Tested:	16 April 2010	
<u>Results:</u>	See attached sheet		
<u>Comments:</u>	None		

Approved By: John Watt
Title: Laboratory Manager
Date: 19 April 2010

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Version 1.01
ID.N0101A 2:12

Report No: GLA0000981/1
Client: GALGLASS LIMITED
Site: Gillette UK
Date: 19 April 2010
Report Group: BS

Sample Number	3584	3585	3583
Internal Reference	-	-	-
Client Reference	BH1	BH1	BH1
Location	-	-	-
Depth	3.00-3.00m	6.00-6.00m	1.20-1.20m
Description	-	-	-
Type	Solid	Solid	Solid
Det Name	Units	UKAS	Method
Acid Soluble SO4	%	Yes	BS1377 part 3:1990 test 5
Water Soluble Sulfate	g/l	Yes	BS 1377:Part 3:1990, cl 5
Grading 2mm	%	Yes	BS 1377:Part 3:1990, cl 5

End Of Page

Report No: GLA0000981/1
 Client: GALGLASS LIMITED
 Site: Gillette UK
 Date: 19 April 2010
 Report Group: Inorganics

Sample Number		3583	3584	3585
Internal Reference		-	-	-
Client Reference		BH1	BH1	BH1
Location		-	-	-
Depth		1.20-1.20m	3.00-3.00m	6.00-6.00m
Description		-	-	-
Type		Solid	Solid	Solid
Det Name				
	Units	UKAS	Method	
pH	-	Yes	GLA/CHEM/02	7.4
Total Sulfur	%	Yes	GLA/CHEM/06	1.0

End Of Page

Appendix D

Proposed Phasing Drawing

NOTES

Do not scale dimensions from this drawing except for Local Authority planning purposes.

The contractor is responsible for checking dimensions, tolerances and references. Any discrepancies to be verified with the Project Manager before proceeding with the works.

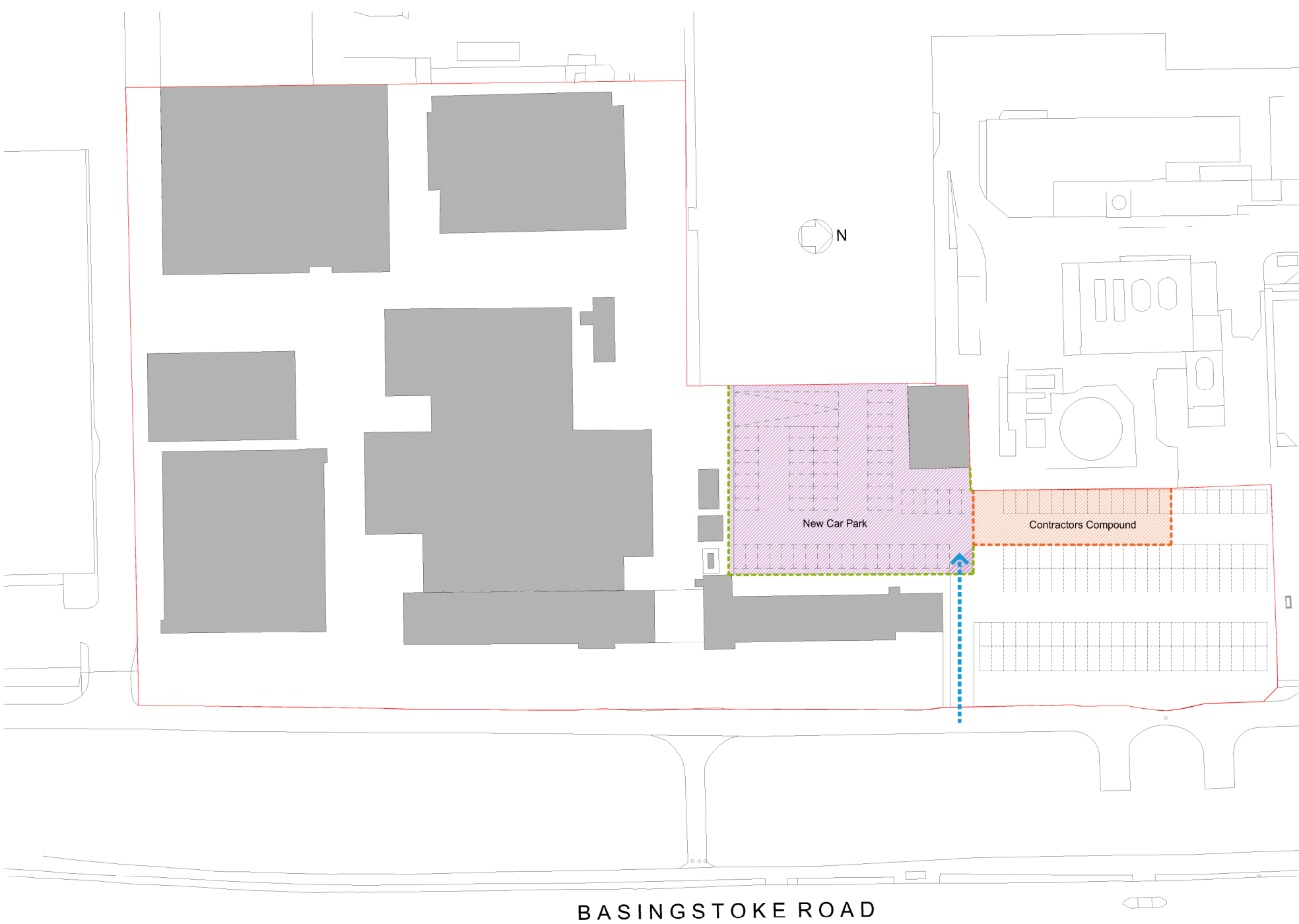
This drawing is copyright to DHP and may not be reproduced in any form without prior written consent.

All current drawings and specifications for the project must be read in conjunction with the designers hazard and environment assessment record.

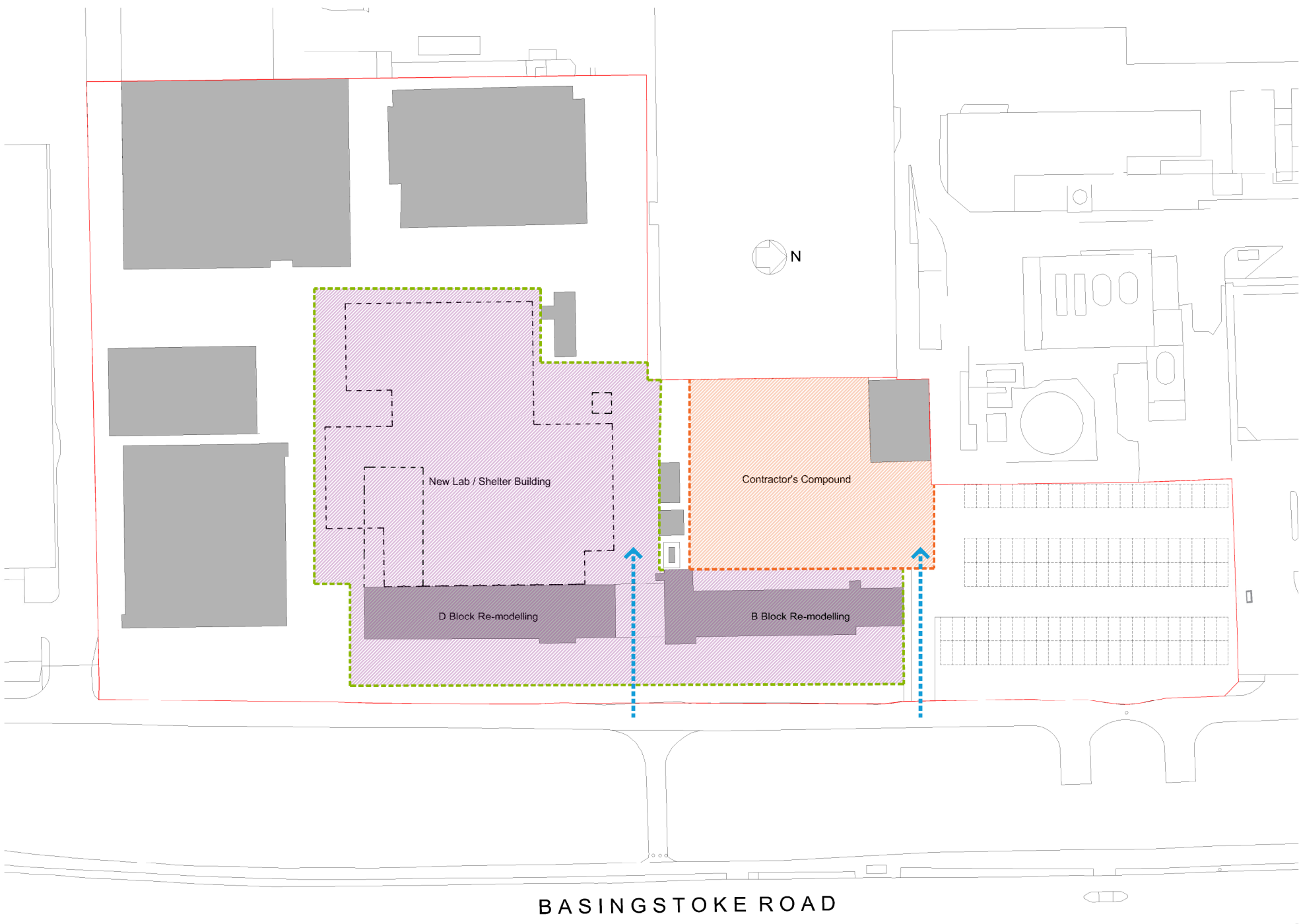
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KEY

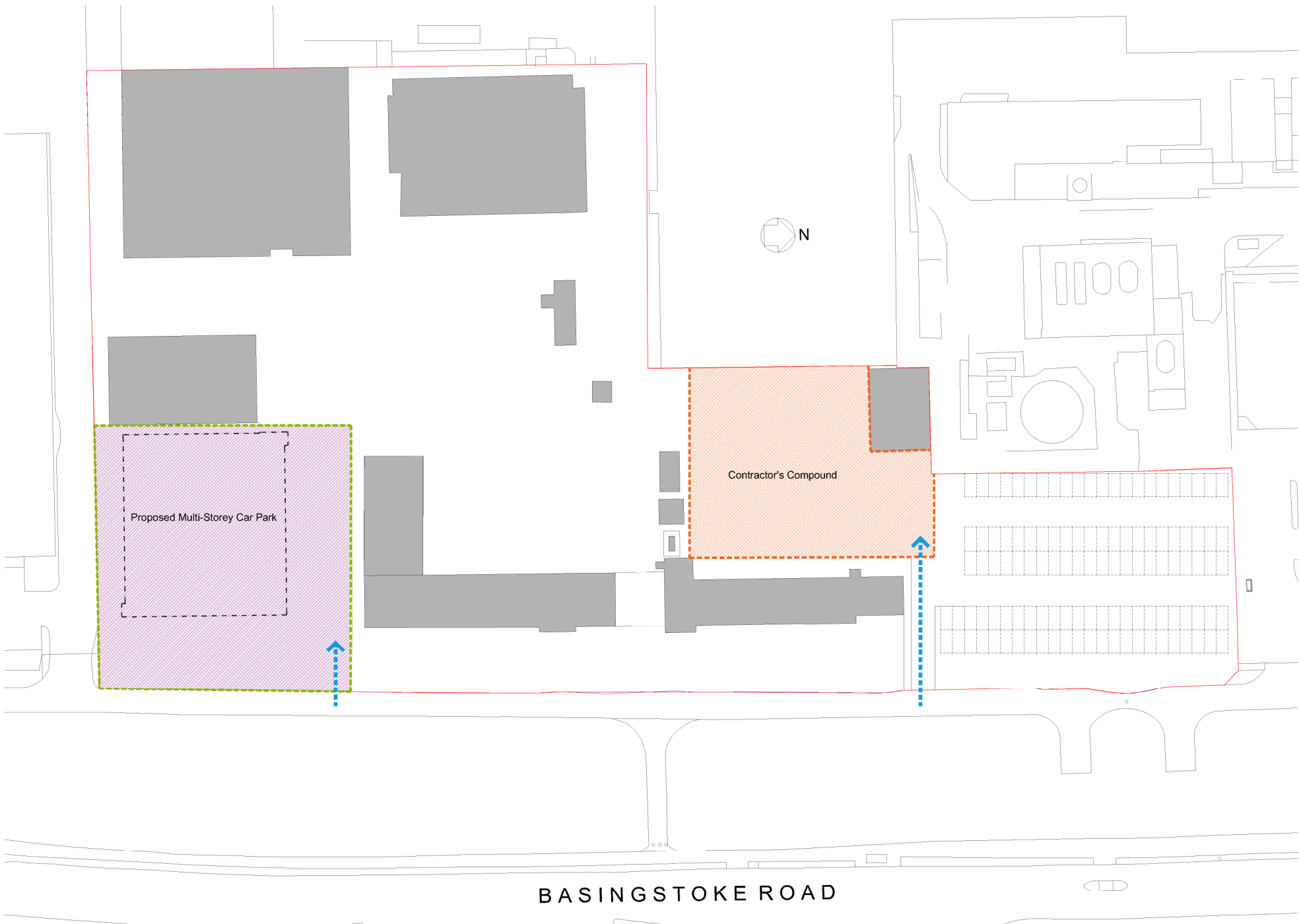
- Construction Zone
- Contractors Compound
- 2.1m High Heras Fencing
- 2.1m High Boarding
- Site Boundary
- Site Access



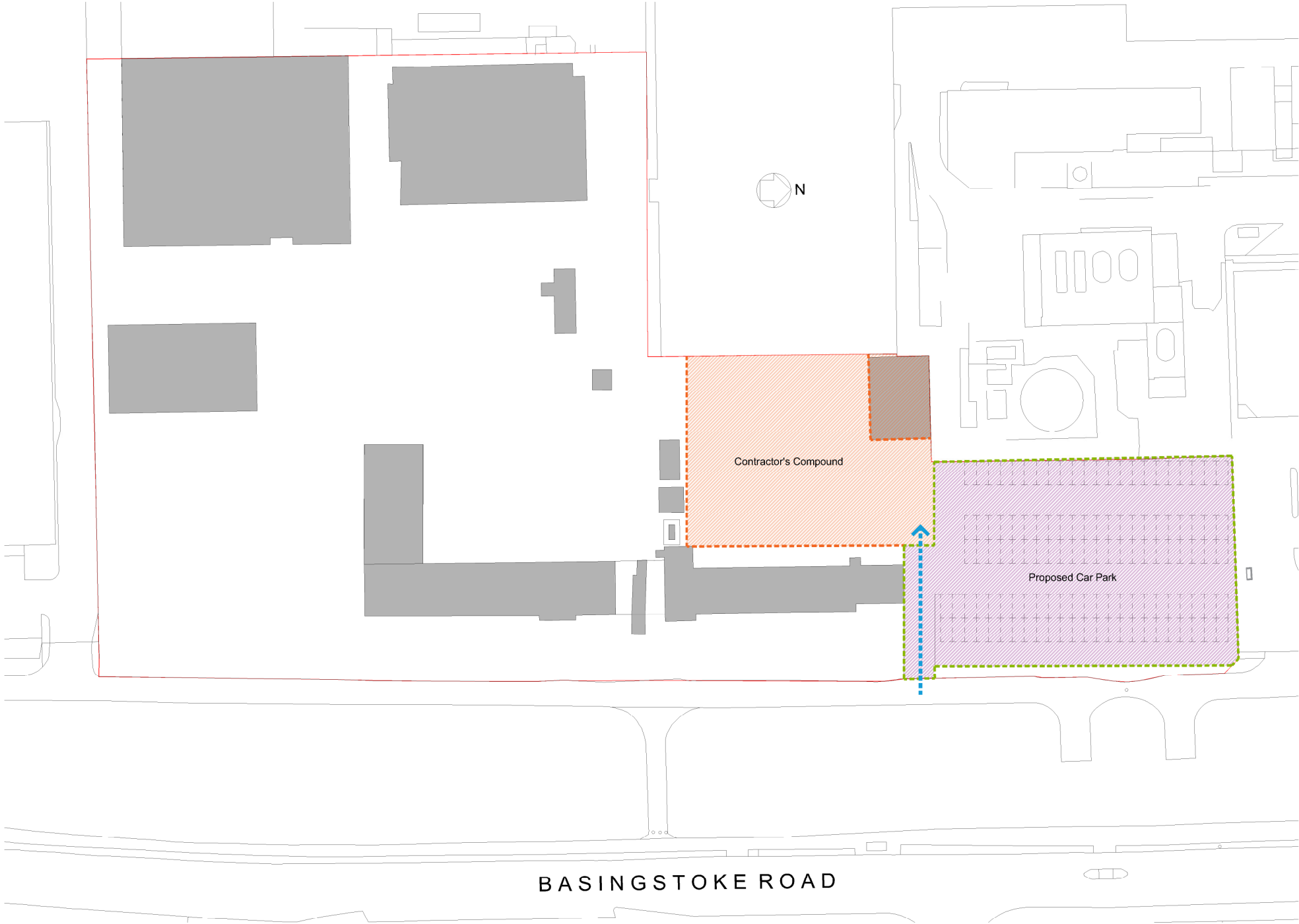
Phase 4



Phase 3



Phase 2



Phase 1

PLANNING

P0	10.16	Issued For Planning	AP
Rev	Date	Description	Chk

243 Brooklands Road
Weybridge
Surrey KT13 0RH

T 01932 850100
W www.dhpuk.co.uk

dhp

Project
P&G Reading
452 Basingstoke Road
Reading
RG2 0QE

Drawing
Phasing And Contractors
Compound/Site Access Plans

Drawn By	GC	Date	10.16
Project Manager	SP	Scale	1:1000
Project No.	Drawing No.	Stage/Rev	
5504	2080	P / 0	

Appendix E

Environmental Noise Permit



**GILLETTE MANUFACTURING
FACILITY, READING**

**ENVIRONMENTAL NOISE
ASSESSMENT**

Date: 30th June 2014
Our Ref: B7449/ENV/P1
Client: Procter & Gamble Co.
RPS
8 Exchange Quay
Manchester
M5 3EJ

Tel: 0161 786 8550
Fax: 0161 786 8551
Email: acoustics-bir@rpsgroup.com

QUALITY MANAGEMENT

Prepared by:	Michael Pimlott
Authorised by:	Robert Turner
Date:	30th June 2014
RPS Project Number Document Reference:	B7449/ENV/P1

DISCLAIMER

The opinions and interpretations presented in this report represent our best technical interpretation of the data made available to us. However, due to the uncertainty inherent in the estimation of all parameters, we cannot, and do not guarantee the accuracy or correctness of any interpretation and we shall not, except in the case of gross or wilful negligence on our part, be liable or responsible for any loss, cost damages or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees.

Except for the provision of professional services on a fee basis, RPS does not have a commercial arrangement with any other person or company involved in the interests that are the subject of this report.

RPS cannot accept any liability for the correctness, applicability or validity for the information they have provided, or indeed for any consequential costs or losses in this regard. Our efforts have been made on a "best endeavours" basis and no responsibility or liability is warranted or accepted by RPS.

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1 INTRODUCTION

1.1 RPS (Acoustics) has been commissioned by Procter and Gamble Co. (P&G) to establish the potential for noise disturbance at the nearest sensitive receptor (NSR) locations to the Gillette Manufacturing Facility, Reading.

1.2 Gillette UK Ltd manufactures hygiene and beauty products at its Basingstoke Road site in Reading. The site operates a variety of plant that is used during the manufacturing process, the majority being housed within the main production building. Gillette UK Ltd is regulated under The Pollution Prevention and Control (England and Wales) Regulations 2000. The relevant section of the permit states that:

3.5 Noise and vibration

3.5.1 Emissions from the activities^[1] shall be free from noise and vibration at levels likely to cause annoyance outside the site, as perceived by an authorised officer of the Agency, unless the operator has used appropriate measures to prevent or where that is not practicable to minimise the noise and vibration.

1.3 Gillette UK Ltd is acutely aware of their environmental commitment and where practicable, they will implement environmental best practice to minimise their impact on the environment. This commitment includes management and engineering noise control measures to ensure that their operations are undertaken in a manner which will not disturb nearby noise-sensitive dwellings.

1.4 The report includes the following sections:

- Noise Units and Guidance - a summary of relevant information regarding noise units and acoustic terms and applicable standards and guidance documents.
- Assessment Methodology and Significance Criteria – a description of the methodology used to predict and assess the noise and vibration effects and the criteria used to determine their significance.
- Baseline Conditions – a description of the results of monitoring of daytime and night-time noise levels; the monitoring was undertaken in order to determine the existing noise climate in the local area and in the vicinity of the newly built development. A description of the significant noise sources that affect the area in the vicinity of the site is also provided.
- Predicted Effects – a quantitative or qualitative assessment of noise and vibration levels at the nearest noise-sensitive receptors (NSRs) during the operation of the facility and the determination of the significance of any resulting effect.
- Summary and Conclusions – a summary of the noise assessment and conclusions with regards to Best Practicable Means (BPM) and Best Available Technology (BAT).

¹ These activities solely relate to operations associated with the soap-making process. Specifically gel and foam mixing processes, storage of fatty acids in the warehouse and the ozonation plant.

a) Prevision Reports

- 1.5 In 2008 Gillette UK Ltd commissioned RPS to prepare an environmental noise impact report (ref DLE1416 dated 9th October 2008), which considered the impact of noise from the Gillette site to offsite noise sensitive dwellings. The work was undertaken as part of Gillette's commitment to environmental best practice. The work also involved the assessment of noise to the west of the site with regard to a consented residential development which was partially constructed.
- 1.6 In 2011 RPS were commissioned to update the 2008 report with a new noise impact assessment (ref DMA6683 dated 23rd September 2011). It was noted during the assessment that the residential development to the west of the site had been completed and was occupied. Townhouses located along Longships Way are considered to be the closest new dwellings to the Gillette Manufacturing Facility.
- 1.7 This report updates the 2008 and 2011 assessments with respect to baseline surveys and noise source measurements and again considers the potential for disturbance to neighbouring residential areas.

2 LEGISLATION/STANDARDS

a) Noise Units

- 2.1 Noise is defined as unwanted sound. The range of audible sound is from 0dB to 140dB. The frequency response of the ear is usually taken to be about 18Hz (number of oscillations per second) to 18,000Hz. The ear does not respond equally to different frequencies at the same level. It is more sensitive in the mid-frequency range than the lower and higher frequencies and because of this, the low and high frequency components of a sound are reduced in importance by applying a weighting (filtering) circuit to the noise-measuring instrument. The weighting which is most widely used and which correlates best with subjective response to noise is the dB(A) weighting. This is an internationally accepted standard for noise measurements.
- 2.2 Excessive noise can interfere with speech communication, it can interrupt a wide range of different types of work, particularly activities requiring sustained concentration and it can disturb rest and relaxation and disrupt normal patterns of sleep. High sound levels continued for extended periods of time can contribute to noise induced hearing loss, whilst at the generally lower sound levels typically found outside houses, residents often report varying degrees of annoyance. The World Health Organisation defines noise annoyance as 'a feeling of displeasure evoked by a noise'.
- 2.3 Reported annoyance is known to be affected by:
- Sound level - including whether the sound is constant, fluctuating, impulsive (startle), has low frequency components (e.g. rumble/boom) or is high pitched (e.g. whine/whoosh); and
 - Occurrence of exposure - reported annoyance varies depending on the frequency of events and whether they are anticipated or randomly occur.
- 2.4 The effects of noise are also dependent upon the time of day at which it occurs. This is due to acoustic factors, such as the relative level of background noise, and non-acoustic factors, such as the activities being disturbed and people's expectations of noise levels at different times of the day.
- 2.5 It is commonly accepted that a change in noise level of 3dB(A) is just perceptible. The "loudness" of a noise is a purely subjective parameter but it is generally accepted that an increase/decrease of 10dB(A) corresponds to a doubling/halving in perceived loudness.
- 2.6 External noise levels are rarely steady but rise and fall according to activities within an area. In an attempt to produce a figure that relates this variable noise level to subjective response, a number of noise indices have been developed. These include:
- The L_{Amax} noise level - This is the maximum noise level recorded over the measurement period;
 - The L_{Aeq} noise level - This is the "equivalent continuous A-weighted sound pressure level, in decibels" and is defined in British Standard BS 7445 as the "value of the A-weighted sound pressure level of a continuous, steady sound that, within a specified time interval, T, has the same mean square sound pressure as a sound under consideration whose level varies with time". It is a unit commonly used to describe construction noise and noise from industrial

premises and is the most suitable unit for the description of other forms of environmental noise. In more straightforward terms, it is a measure of energy within the varying noise; and

- The L_{A90} noise level - This is the noise level that is exceeded for 90% of the measurement period and gives an indication of the noise level during quieter periods. It is often referred to as the background noise level and is used in the assessment of disturbance from industrial noise.

2.7 In addition, the term 'ambient noise' is often referred to. Ambient noise is defined in BS 4142 as the 'Totally encompassing sound in a given situation at a given time usually composed of sound from many sources near and far'. It is commonly measured in terms of $L_{Aeq,T}$.

2.8 The following scale of noise levels has been adapted from the companion guide to PPS 22. It shows a range of commonly experienced noise sources:

Table 2.1 : Scale of Noise Levels for Commonly Experienced Sources

Source/Activity	Indicative Noise Level dB(A)
Threshold of Pain	140
Jet aircraft at 250 m	105
Pneumatic drill at 7 m	95
Truck at 30 mph at 100 m	65
Busy general office	60
Car at 40 mph at 100 m	55
Dawn chorus	50-65
Inside Woodland - rustling trees	40-50
Rural day-time (natural sounds)	35-45
Rural night-time (natural sounds)	20-40
Quiet bedroom	20
Threshold of hearing	0

b) BS 4142:1997

2.9 BS 4142:1997 provides a method for rating industrial noise affecting mixed residential and industrial areas. It was first published in 1967 and has been extensively used by local authorities and consultants to rate noise from fixed installations, such as building services plant. The Standard was considerably revised in 1990, clarified in 1997, and advocates the use of $L_{Aeq,T}$, which is directly measurable and termed the Specific Noise Level (SNL), when corrected for the duration of the noise. The SNL is then corrected for character (if appropriate), and termed the Rating Level (RL). When used to assess industrial noise, the RL is determined and the $L_{A90,T}$ background level is subtracted from it. A difference of around 10dB or higher indicates that complaints are likely. A difference of around 5dB is of marginal significance. A difference of -10dB or more is a positive indication that complaints are unlikely.

2.10 BS 4142:1997 requires a +5dB correction to be applied to the SNL if the noise contains a distinguishable, discrete, continuous note (whine, hiss, screech, hum etc), or if there are distinct impulses in the noise (bangs, clicks, clatters, or thumps), or if the noise is irregular enough in character to attract attention. The SNL then becomes the RL.

2.11 BS 4142:1997 states that the assessment location should be free-field (away from any reflecting façades) and at a preferred height of between 1.2 and 1.5 metres above ground level.

c) NPPF

- 2.12 The NPPF is the over-arching planning policy document that applies to all new developments in England. The guidance and assessment criteria given (or referred to) in this document can therefore be applied to all other standards in terms of assessing the suitability of granting Planning permission with respect to noise impact.
- 2.13 The NPPF states that Planning policies and decisions should aim to:
- Avoid noise from giving rise to significant adverse impacts on health and quality of life as a result of new development;
 - Mitigate and reduce to a minimum other adverse impacts on health and quality of life arising from noise from new development, including through the use of conditions;
 - Recognise that development will often create some noise and existing businesses wanting to develop in continuance of their business should not have unreasonable restrictions put on them because of changes in nearby land uses since they were established; and
 - Identify and protect areas of tranquillity which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason.
- 2.14 With specific reference to noise impact, the NPPF document refers to the Noise Policy Statement for England (NPSE)². The NPSE provides guidance which enables decisions to be made regarding the acceptable noise burden to place on society, using three key phrases – the No Observed Effect Level (NOEL), the Lowest Observed Adverse Effect Level (LOAEL) and the Significant Observed Adverse Effect Level (SOAEL).
- 2.15 In order to provide a consistent frame of reference (and to allow a view to be taken on the suitability of the application with reference to the relevant Planning guidance), the levels or criteria given in other relevant documents used in assessment will be re-framed in terms of the following:
- No Observed Effect Level (NOEL)*
- 2.16 The NOEL is the level of noise impact below which no effect can be detected, and there would be no discernible negative effect on health or quality of life.
- Lowest Observed Adverse Effect Level (LOAEL)*
- 2.17 The LOAEL is the lowest level of noise impact above which adverse effects on health or quality of life can be detected.
- 2.18 Designing noise impacts to be equal-to-or-less-than the LOAEL should see that any adverse effects on health or quality of life are negligible.
- Significant Observed Adverse Effect Level (SOAEL)*
- 2.19 The SOAEL is the level above which significant adverse effects on health and quality of life occur.

² Ref. Section 123, page 29

2.20 Designs should always seek to avoid a noise impact which would be categorised as a SOAEL.

d) British Standard 8233 : 2014

2.21 Table 2.2 shows recommended internal noise levels, as prescribed in BS 8233:2014:

Table 2.2 : BS 8233:2014 Internal Noise Levels for Dwellings

Area	Day Level (07:00 – 23:00) dB(A)	Night Level (23:00 – 07:00) dB(A)
Living Rooms	35	N/A
Dining Rooms	40	N/A
Bedrooms	35	30

2.22 It is therefore recommended that (in order to provide a comfortable environment within habitable rooms, specifically bedrooms), the external building fabric for new dwellings should be generally designed to achieve the lower internal night-time noise level of 30 dB(A) and daytime level of 35 dB(A).

2.23 The figures given above would be considered the LOAEL, and levels below the figures above would be considered the NOEL. Levels significantly greater than the figures given above would be considered the SOAEL, and should be avoided.

e) WHO Guidance

2.24 The World Health Organisation (WHO) gives guidance on desirable levels of environmental noise. The levels presented in the WHO Community Guidelines are those at which adverse effects become measurable. The 1980 WHO document suggested that "general daytime outdoor noise levels of less than 55dB(A) $L_{eq,16hr}$ are desirable to prevent any significant community annoyance". This level is an external free-field noise level. The 1980 document also stated "that night-time noise levels of 35dB(A) $L_{eq,8hr}$ or less will not interfere with the restorative process of sleep". This refers to an internal level.

2.25 A report was submitted to the WHO in 1995 for consideration as a revision to the 1980 document and revised Community Guidelines were issued in 2000. In the 2000 guidelines, it is considered that the sleep disturbance criteria should be taken as an internal noise level of 30dB $L_{Aeq,8hr}$ or an external level of 45dB $L_{Aeq,8hr}$. The document also recommends that internal L_{Amax} levels of 45dB and external L_{Amax} levels of 60dB should be adhered to where possible.

2.26 The 2000 WHO document also states that "to protect the majority of people from being seriously annoyed during the daytime, the sound pressure level on balconies, terraces and outdoor living areas should not exceed 55dB $L_{Aeq,16hr}$ for a steady continuous noise." i.e. the daytime levels effectively remain unchanged.

3 SITE DESCRIPTION

a) Site Operations

i. HGV and shunter movements

3.1 Gillette's site operates on a near 24 hours a day, seven days a week basis and the majority of the noise is produced by HGV movements from the dispatch end of the main building travelling along the site boundary with Longships Way. These movements occur throughout the day and night and include:

- Goods In – lorries arriving and reversing/pulling away from loading bays
- Goods Out – shunter driver activity in the yard (reversing onto bay, lifting up full trailers to tow away, turning circle)
- Goods Out – loading of lorries with pallets
- West Road – movement of lorries along west Road to and from DHL Gillette Way
- C gate – Tanker arrival and departure

ii. Fixed building services plant

3.2 In addition, there are a significant number of fixed noise sources present across the site. For reference, these are presented below in no particular order:

- Comfort chiller units (2No.) and air handling units (3No.) mounted on the roof of the main process building facing to the west, i.e. towards Longships Way (units cycle on and off and produce constant noise levels);
- Newly installed process chiller units situated within the centre of the site;
- Transformers operating within the main building on the western façade at ground level. Ventilation provided by acoustic louvres (units cycle on and off and produce constant low frequency noise levels);
- Flue extracts situated in the centre of the complex at roof height and a number of extracts throughout the site e.g. kitchen extract;
- Boiler room situated in the centre of the site;
- Standby generators operate as and when required; and
- Noise breakout from the buildings (minimal).

3.3 With the exception of the 'process chiller units', it is understood that all items of fixed building services plant are those which were measured during the 2011 assessment.

3.4 The current 'process chiller units' are understood to be new units which replaced previous units in the same location.

b) Noise Sensitive Receptors

- 3.5 The closest residential dwellings (NSR) to the Gillette site are two semi-detached dwellings on the corner of Gillette Way and Manor Farm Road, which are 23m from the site boundary fence. These properties typically experience noise due to HGV movements to and from the site and in particular movements to the Gillette Distribution Centre and tanker deliveries.
- 3.6 Other dwellings, including houses along Longships Way, are situated opposite the main facility, to the rear of the facility and in the vicinity of the Basingstoke Road area.
- 3.7 When the new residential development to the rear of the site received planning permission, noise was a material consideration with respect to the design of the development. The permission had a planning condition which it is understood was discharged. This condition stated:
- “Before development of Blocks O and E commence and pursuant to condition 10 (Noise Attenuation Measures) of permission 04/01215/VARIAT, details of measures to be taken to ensure that noise levels within Units O1 - O6 and E1 - E6 will not exceed 30-40 dB L_{Aeq} , 16h for living rooms during the day and 30-35 dB L_{Aeq} , 8h and 45 dB L_{Amax} for bedrooms at night; and measures to be taken to ensure that noise levels within the private garden areas of those units shall not exceed 50-55 dB L_{Aeq} , 16h (such levels being specified in the approved development brief for Manor Farm which was approved pursuant to condition 3 of permission 00/01215/OUT and as required by condition 10 of 04/01215/VARIAT) shall be submitted to and approved in writing by the Local Planning Authority. Such measures as may be approved shall be implemented before the units specified above are occupied.”*
- 3.8 The condition as worded is based upon the guidance contained within BS8233:1999 and that of the WHO. The condition requires the internal noise environment to be assessed based upon steady state external noise and also the maximum (peak) noise generated by discrete events such as vehicle pass-bys during the night time hours (2300-0700). There is no maximum noise level limit for the daytime.
- 3.9 The use of the 16 hour day and 8 hour night averaging periods could mean that noise associated with short loud noise events may be above the decibel limits but when averaged over the complete day and night periods the noise limits may be met. This raises the issue that the dwellings, as designed and constructed, may achieve the requirements of the noise limits of the planning condition however this may not stop residents from complaining with respect to short noisy activity. In similar situations it is generally the case that residential accommodation is designed such that the noise limits are achieved when considering a worst case noise level over a much shorter averaging period, for example 15 minutes.
- 3.10 Nevertheless should any future noise complaints arise then it would be the responsibility of the developer to demonstrate compliance with the planning condition.

4 NOISE SURVEY

a) Unattended Logging Noise Surveys

- 4.1 Unattended logging noise surveys were undertaken over the course of a week, in and around the Gillette site, to establish the average noise emissions of the site and to establish the noise emissions of particular noise sources.
- 4.2 A total of four logging measurements position were used to calibrate and validate the Gillette noise model as follows:
- Position Log-1: Located by 'Gate C' along northern site boundary
- Position Log-2: Located by 'Gate A' at south-west corner of site
- Position Log-3: Located along western site boundary
- Position Log-4: Located by 'Gate B' at north- west corner of site
- 4.3 An aerial photo showing the approximate location of each logging position is provided in Appendix 1.
- 4.4 Four noise descriptors were used in measurements, as follows:
- $L_{Aeq,T}$, the average A-weighted noise level over each measurement period
 - $L_{A90,T}$, the A-weighted noise level exceeded for 90% of the measurement period
- 4.5 The time period, T, was set for 5 minutes.
- 4.6 Unattended noise measurements were made using Rion NL-31 sound level meters. Attended measurements were made using a Svantek SVAN 949, generally in accordance with BS EN 60651:1994 and BS 7445:1993. The meters were calibrated before and after use with a Rion NC-74 calibrator (serial number 34683836). No significant drift was witnessed. Calibration certificates for all equipment are available upon request.
- 4.7 Table 4.1 below details the lowest measured L_{A90} value at each of the logging positions. Values have been rounded to the nearest integer value, as fractions of a decibel are imperceptible.

Table 4.1 : Summary of Logged Noise Measurements

Location	Lowest $L_{A90,5min}$	
	Daytime (07:00–23:00)	Night-time (07:00–23:00)
Log-1	41	38
Log-2	44	42
Log-3	41	35
Log-4	46	42

4.8 Charts 1 to 4 in Appendix 2 of this report presents a graphical representation of logged L_{Aeq} , L_{AFmax} , L_{10} and L_{A90} levels measured at Positions 1 to 4 respectively. Full single figure results are available at request.

b) Attended Measurement Results

4.9 In addition to unattended logged measurements, attended measurements were also undertaken at a number of locations outside of the Gillette Manufacturing Facility. Timing of measurements were chosen to be representative of the quietest time of the daytime period ('late evening' 21:00-23:00hrs and 'early afternoon' 10:00-12:00hrs) and the night time period (01:00-04:00hrs).

4.10 An aerial photo showing the approximate location of each attended position is provided in Appendix 1.

4.11 A summary of the attended daytime and night time ambient noise levels recorded by the logging meters is detailed within Table 4.2 below. The values are the average L_{Aeq} and the lowest L_{A90} dB values measured during each daytime or night-time period. Values have been rounded to the nearest integer value as fractions of a decibel are imperceptible.

Table 4.2 : Summary of Attended Noise Measurements

Location	Description	Daytime (07:00–23:00)		Night-time (07:00–23:00)	
		L_{Aeq}	L_{A90}	L_{Aeq}	L_{A90}
Att-1A	At location of townhouses situated along Longships Way (position closest to Chiller and AHU Plant)			57	47
Att-1B	At location of townhouses situated along Longships Way (position furthest away from to Chiller and AHU Plant)	47	45	43	38
Att-2A	At location of semi-detached dwelling at corner of Gillette way and Manor Farm Road	65	42	50	39
Att-2B	Along Gillette Way, screened from plant noise associated with Gillette Site	64	45	54	38
Att-3	Towards centre of new residential development (fully screened from noise associated with Gillette Manufacturing Facility)	48	39	39	36

4.12 Full single figure results are detailed in Appendix 3 of this report.

c) SoundPLAN 7.3 Computer Noise Model

4.13 In order to establish the level of noise impact at nearby residential dwellings due to activities associated with the Gillette Manufacturing Site, a 3D computer noise model of the site has been created using 'SoundPLAN 7.3' noise modelling software. The SoundPLAN software was set to implement the acoustic algorithms of ISO9613-2: Acoustics – Attenuation of sound during propagation outdoors: Part 2: General method of calculation.

4.14 The noise model was constructed using the previously obtained OS ground height data and site layout plans provided by Gillette UK Ltd. As no plans of the new residential development are

currently available electronically, the resulting SoundPLAN models have assessed the potential impact on the residential dwellings by means of single point receptor locations at appropriate assessment locations representative of the facades of the closest dwellings and by the estimation of building locations and elevations.

- 4.15 The boundary noise fence was included as a reflective wooden acoustic fence of height 3m. The fence only provides protection from noise sources at ground level ie HGV movements along the rear boundary.
- 4.16 Fixed noise sources were assessed as single point sources, whereas HGV movements were assessed as line sources.
- 4.17 At the time of the 2014 site visit, it is understood that HGV and shunter movements across the site were lower than would typically be expected during other times of the year. In order to provide a basis for a 'worst case' type assessment, the frequency of HGV and shunter movements was modelled on data included within the previous 2011 model. It is understood that data for the 2011 model was obtained by reviewing CCTV footage for a month.

5 BS 4142 ASSESSMENT

- 5.1 Calculations have been made at ground (1.5m) and corresponding 2nd floors to represent a two/three storey town house. The data is expressed as a typical L_{Aeq} , 1hr i.e. an average level assuming that all plant is operating normally and a representative number of HGV vehicles pass the calculation position in a one-hour assessment period. This is the normal approach when assessing daytime operations from industrial facilities. The results are shown graphically in Appendix 4.
- 5.2 Based on measured noise levels, it can be seen from the SoundPLAN model that HGV movements dominate noise levels. Noise sources are also seen on the plans as a result of process noise. By omitting the contribution of HGV movements, the following table provides an indication of the day time and night time operations. However, it is noted that HGV movements do occur at night and therefore the assessment shows the extremes of the measured and calculated noise levels. The background data is based upon the data in Table 4.2.
- 5.3 The assessment has included a BS 4142 +5dB acoustic feature correction to account for the nature of the noise emissions from the site.

Table 5.1 : BS 4142 Assessment – Daytime and Night time

	Time Period	Specific Noise Level	Rating Level (specific noise level + 5dB acoustic feature correction)	Lowest Measured Background	Difference (Rating level minus lowest measured background)
		L_{Aeq}	L_{Aeq}	L_{A90}	L_{A90}
Gillette Way Residential	Day	44	49	42	+7
	Night	41	46	38	+8
Longship Way Residential	Day	49	54	45	+9
	Night	40	45	39	+6

- 5.4 The data shows that at residential dwellings the noise would be less than of marginal significance during the day and at night. The data also includes the existing residential dwellings on Gillette Way.
- 5.5 Whilst levels approaching +10dB are reported, the impact is considered low as this is an established residential location and at night the primary concern is the prevention of sleep disturbance. Noise levels at night are at the threshold of the WHO guidance level, with and without site activity and therefore in the context of the local area the significance of the impact is low.
- 5.6 In summary, noise levels are therefore considered to be sufficiently low that annoyance and disturbance would not occur and that enforcement action would not be justifiable with respect to statutory nuisance.

a) Complaints

- 5.7 It is understood that since the 2011 survey, there is no record of any official complaints to the Local Authority relating to the operation of the facility.

6 CONCLUSIONS

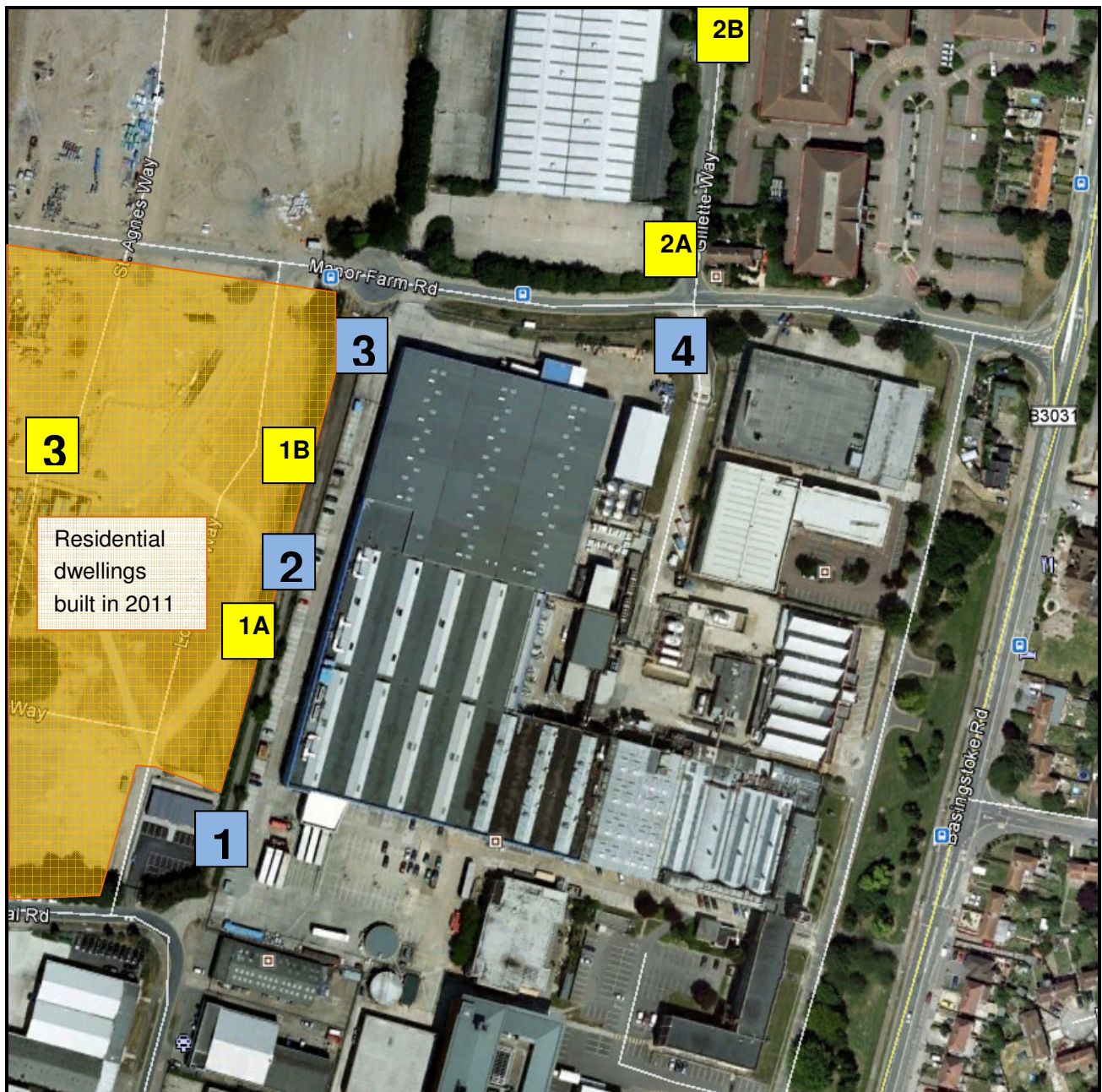
- 6.1 The noise effects arising from the operations at the Gillette facility in 2014 have been assessed in accordance with relevant guidance and standards on environmental noise.
- 6.2 Previous noise source surveys and noise baseline surveys as carried out in 2008 and 2011 have been repeated and the Gillette noise model has been updated to reflect slight changes in source noise levels and new items of building services plant. The results of the noise assessment indicate that complaints would be of marginal significance at the nearest residential areas to the site.
- 6.3 It is understood that in order to discharge the relevant noise conditions, residential dwellings to the west of the site have been designed to protect noise impact in indoor living and sleeping areas. As a result, there have been no recorded complaints to the Local Authority regarding noise impacts associated with the Gillette Manufacturing Facility.
- 6.4 Provided that Gillette UK site noise levels do not materially change in the future, it is considered that there should be no requirement to consider any remedial mitigation measures.

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30th June 2014

APPENDIX 1 – INDICATIVE MEASUREMENT POSITIONS



Key:

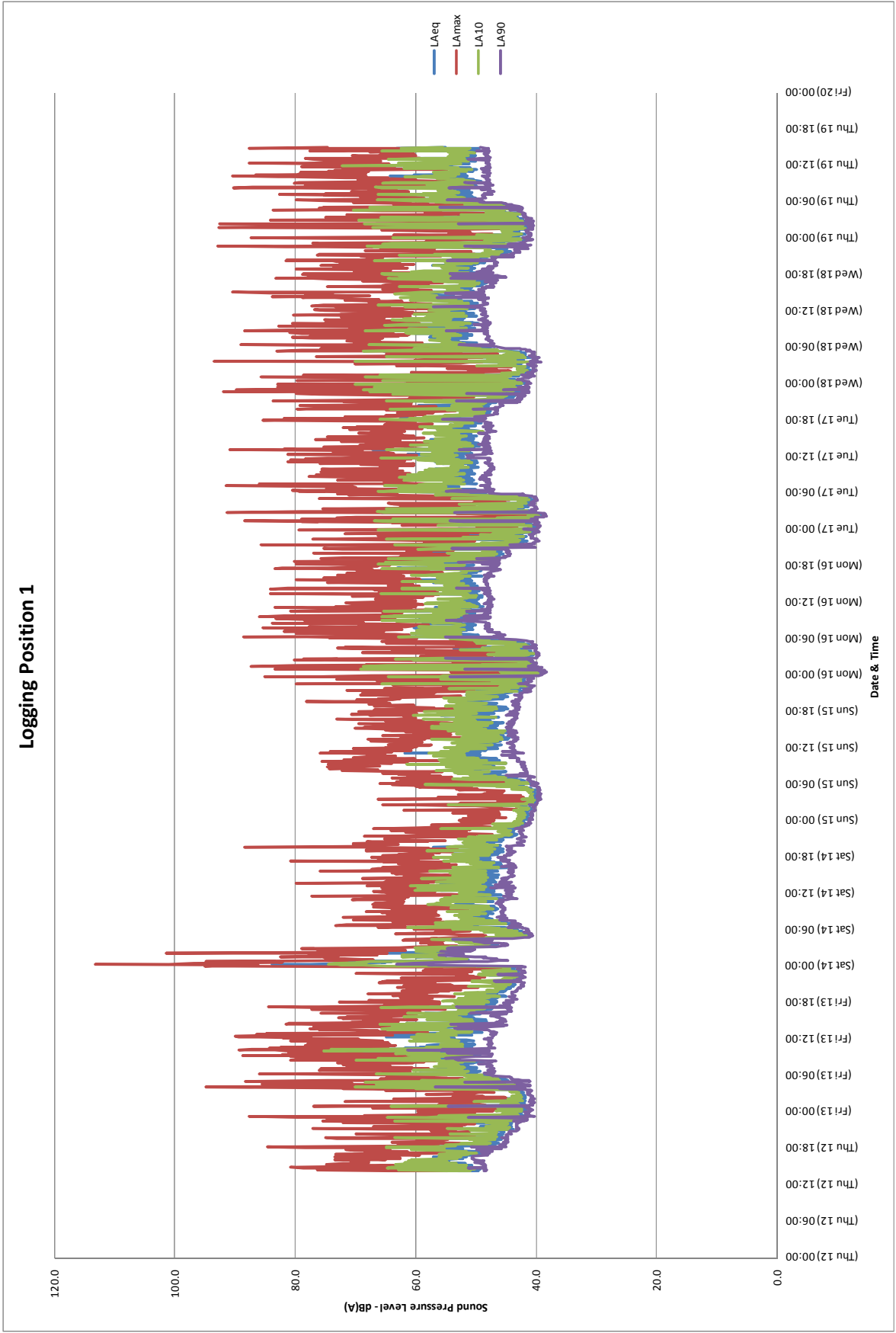


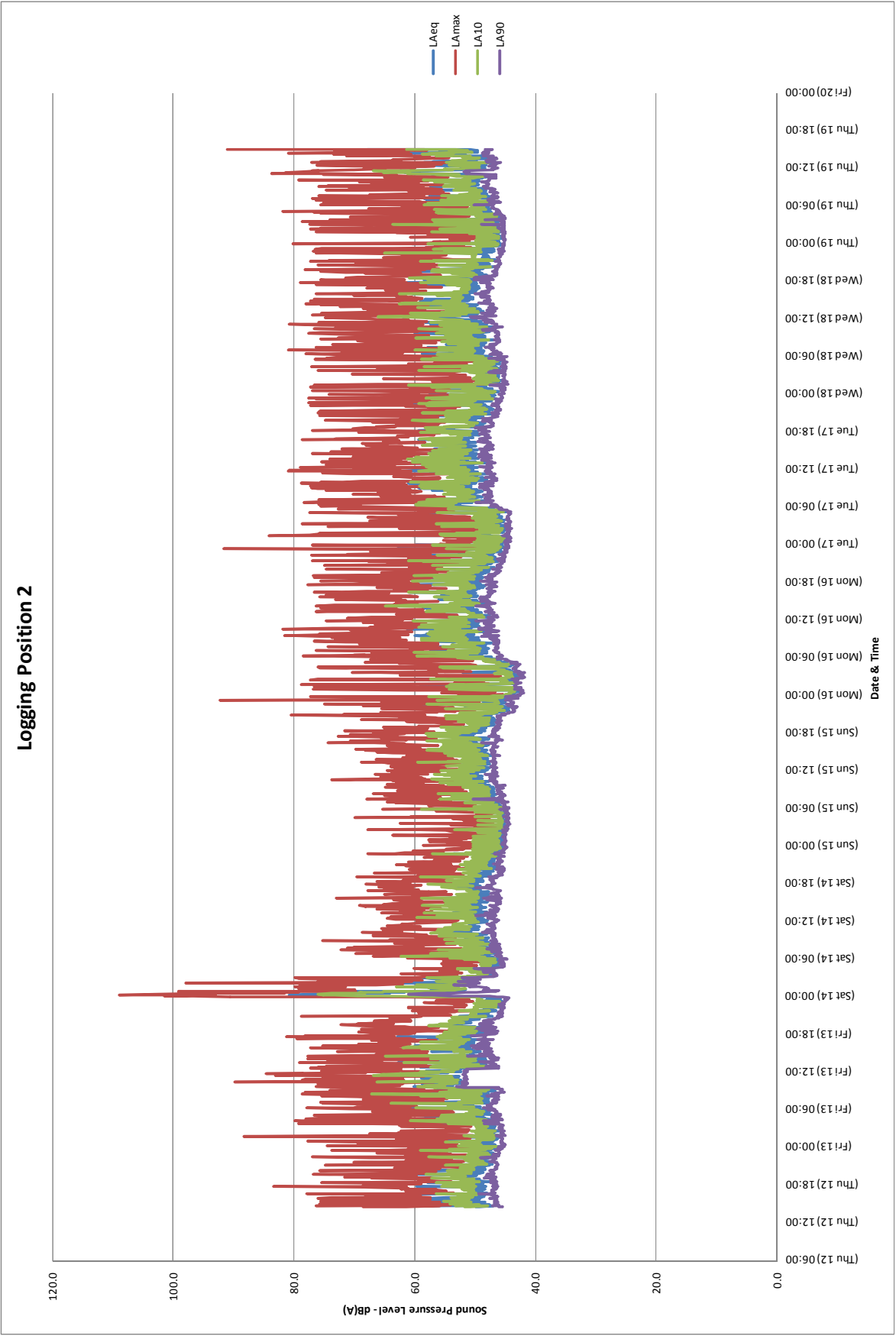
Approximate measurement positions – *long-term logging*

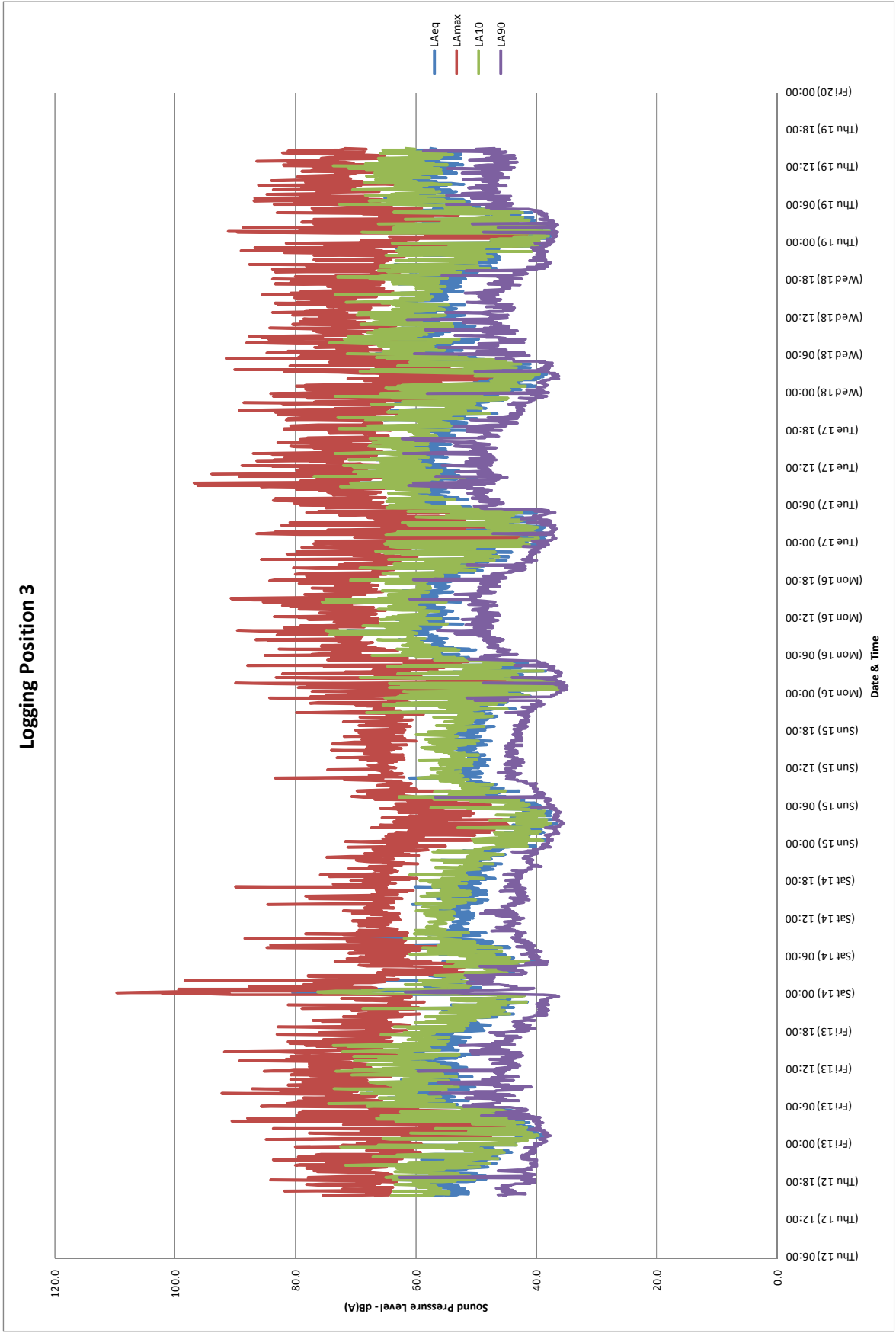


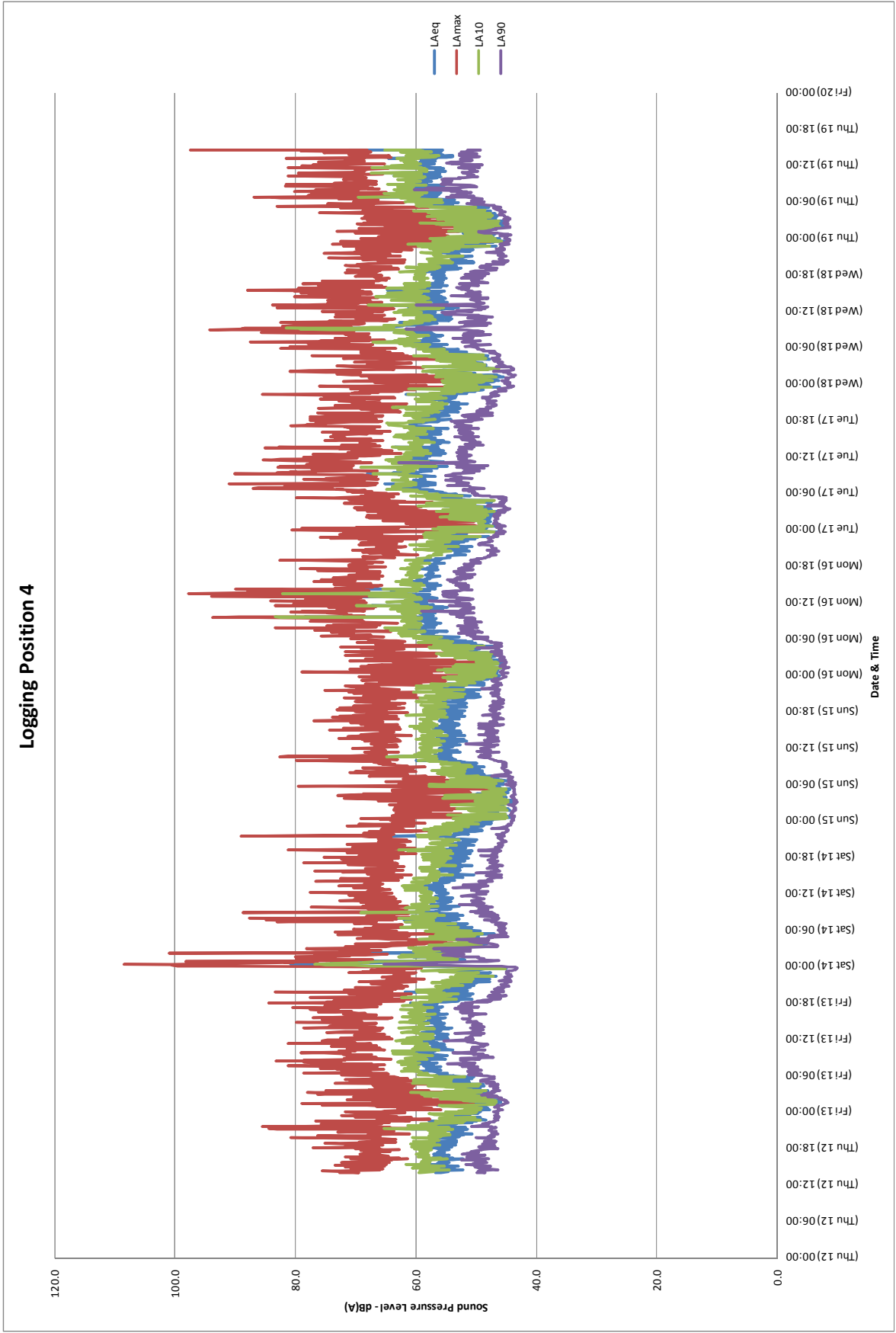
Approximate measurement positions – *attended monitoring*

APPENDIX 2 – LOGGING MEASUREMENT DATA









APPENDIX 3 – SINGLE FIGURE ATTENDED DATA

a) Daytime Noise Measurements

Period T set to 5 minutes

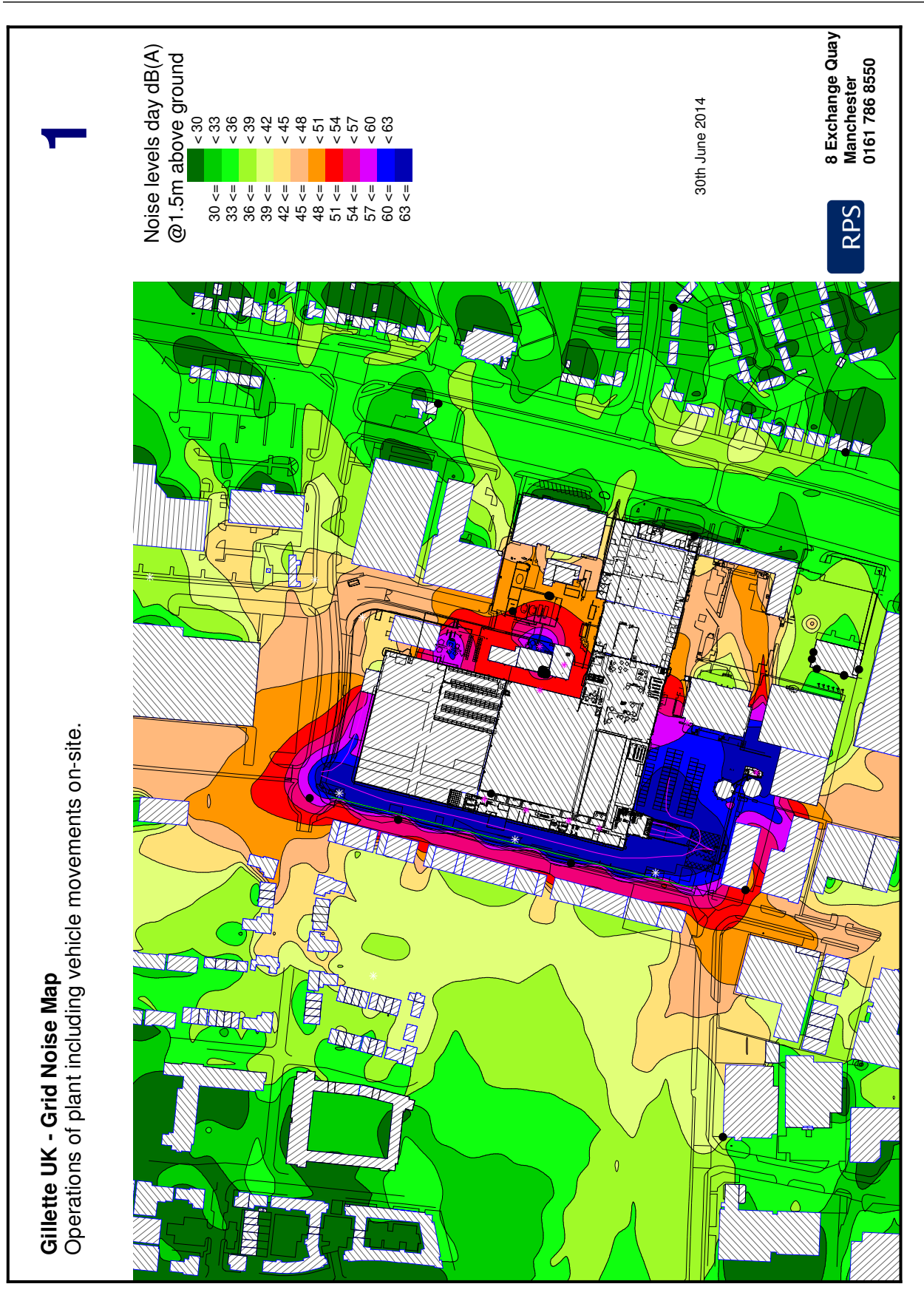
Position	Date	Time	L _{Aeq}	L _{AF,max}	L _{A10}	L _{A90}
1A	12/06/2014	21:13	46.0	56.4	46.3	44.9
		21:18	48.5	58.8	50.3	45.0
		21:23	47.5	61.1	47.7	45.1
		21:28	48.1	58.1	49.9	45.4
		21:33	46.5	50.5	47.6	45.3
		21:38	47.0	62.1	46.6	45.0
		21:43	47.3	53.1	48.8	45.1
		21:48	48.0	62.1	48.9	45.5
		21:53	46.1	51.2	46.8	45.2
		21:58	46.0	55.9	46.3	45.0
		22:03	46.1	53.8	47.6	44.7
		22:08	47.5	56.9	48.6	45.2
		22:13	45.8	45.8	45.7	45.7
2A	12/06/2014	22:18	60.6	76.7	61.9	43.7
		22:23	53.4	71.5	50.0	43.5
		22:28	67.0	83.0	69.5	43.4
		22:33	55.1	74.0	49.6	42.8
		22:38	72.3	94.0	55.4	42.6
		22:43	57.4	72.3	59.7	42.1
		22:48	58.4	77.4	56.3	42.2
		22:53	52.0	74.2	45.8	41.8
		22:58	58.6	71.5	62.2	42.9
2A	13/06/2014	10:01	65.1	80.6	69.4	47.8
		10:06	64.8	79.9	68.3	47.6
		10:12	62.9	77.6	67.6	44.6
		10:17	66.3	84.9	68.8	45.3
		10:22	62.7	78.0	66.8	47.1
2B	13/06/2014	10:26	62.8	78.0	66.8	47.2
		10:31	64.2	81.2	67.7	44.8
		10:36	64.7	82.6	68.4	46.9
		10:41	65.1	82.8	68.9	47.5
		10:46	62.6	78.0	66.9	45.5
		10:51	63.8	81.2	67.2	47.8
3	13/06/2014	10:59	42.6	59.2	43.8	40.1
		11:04	50.2	65.0	53.5	40.9
		11:09	42.4	52.4	45.2	38.7
		11:14	48.4	62.7	51.0	40.3
		11:19	47.5	60.0	49.9	40.5
		11:24	48.8	56.9	52.7	44.4

b) Night-time Noise Measurements on 13/06/2014

Period T set to 5 minutes

Position	Time	L _{Aeq}	L _{AF,max}	L _{A10}	L _{A90}
1A	00:02	47.8	49.9	48.3	47.3
	00:07	48.0	50.6	48.5	47.5
	00:12	48.0	49.8	48.5	47.4
	00:17	48.3	57.6	49.0	47.5
	00:23	48.0	52.0	48.6	47.4
	00:28	48.1	54.6	48.6	47.4
	00:33	48.3	50.3	48.9	47.7
	00:38	48.1	50.3	48.6	47.6
	00:43	48.1	50.1	48.6	47.6
	00:48	66.5	50.1	48.6	47.6
1B	00:53	40.2	47.4	41.4	39.1
	00:58	40.4	48.1	42.4	38.5
	01:03	49.0	67.1	51.5	39.9
	01:08	42.3	61.1	42.0	38.7
	01:13	39.1	44.5	39.8	38.5
	01:18	39.6	52.5	40.9	38.3
	01:24	39.3	50.9	39.8	38.2
2A	01:30	41.7	65.0	42.5	39.0
	01:35	55.9	75.2	46.6	39.1
	01:41	48.8	69.5	41.9	39.2
	01:46	40.5	47.6	41.6	38.8
	01:51	44.8	51.5	48.3	39.6
2B	01:58	41.6	50.9	44.6	38.4
	02:03	38.8	50.5	40.0	37.6
	02:08	54.5	77.8	45.1	38.5
	02:13	53.2	77.0	42.8	38.2
	02:19	54.8	77.3	48.2	38.6
	02:24	48.5	66.1	51.8	38.4
	02:29	55.3	76.8	50.3	38.6
	02:34	58.1	76.8	61.2	43.0
	02:39	54.6	66.5	58.4	44.9
3	02:43	38.4	58.6	39.6	36.4
	02:48	37.8	44.8	39.6	35.8
	02:54	41.0	61.9	39.4	35.7

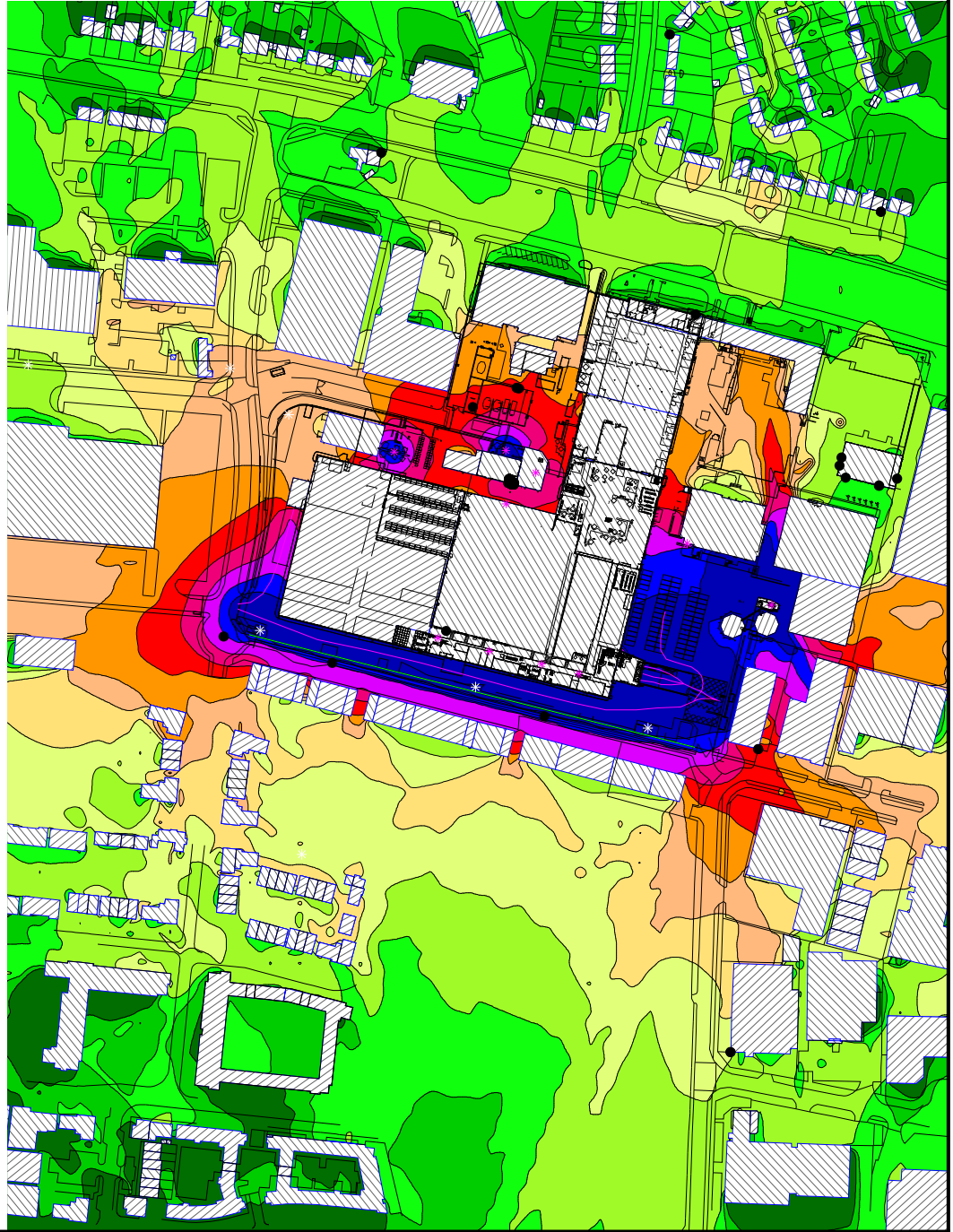
APPENDIX 4 – SOUNDPLAN GRID NOISE MAPS



Gillette UK - Grid Noise Map

Daytime operations of plant including vehicle movements on-site.

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