



DIGITAL REALTY

Crawley Data Centre – Environmental Risk Assessment

Digital Realty (UK) Limited (EPR/UP3604MT/A001)



ecoact

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Introduction

The Digital Realty Crawley Data Centre site (Unit 1 and 2) has back up emergency generators installed with an aggregated thermal rated input of >50MWth and therefore is subject to regulation under the environmental permitting regulations. Part of the permit application process includes conducting a risk assessment to identify and assess potential risks associated with the installation. This document describes the potential risks, the possible pathways for pollutant migration and the receptors which may ultimately be affected by the identified risks. The assessment also includes details of possible mitigation and control measures for the identified risks.

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Hazard	Receptors	Pathway	Probability of exposure	Consequence/potential impact	Risk management techniques	Overall Risk
Emissions to air from on-site generators – nitrogen oxides, sulphur dioxides, carbon monoxide, particulates, and fumes.	Site employees, residents from nearby housing and surrounding commercial and industrial workers	Airborne	Likely – typically where atmospheric conditions such as low wind speed caused by high pressure allows concentrations of pollutants to increase.	Exhaust emissions contribute to atmospheric pollution and a reduction in air quality, which can exacerbate respiratory conditions in humans and impact local wildlife receptors.	<p>Generators are inspected weekly and only operated when being tested every month or in the event of an emergency.</p> <p>Generators are serviced as per the service plan which includes a review of fuel and oil quality. Any fuel/oil found to be sub-standard will either be polished or otherwise treated as necessary.</p> <p>Fuel is sampled annually, if test results show elevated sulphur levels, contamination, or low combustibility, remedial action will be taken.</p>	Low/Medium - management control measures in place.

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					All generator engines are off when not in use.	
Emissions to land and water - leaks from the storage of hydrocarbon fuels stored on-site in fuel tanks and drums.	Site employees, local residents and commercial residents, underlying soils, groundwater, nearby water bodies and local sewerage system.	Through the drainage network, surface run off, vertical leaching through the soils and dermal contact.	Unlikely	Potential contamination of underlying soils, local sewerage system, groundwater, nearby water bodies and local fauna and flora. Damage to human health through ingestion.	<p>The site is covered in good quality hardstanding, therefore reducing the likelihood of any potential leaks contaminating the underlying soils.</p> <p>Diesel is stored in above ground tanks which are internally bunded. Tanks are checked as part of plant rounds and fuel levels are reported monthly.</p> <p>Leak detection alarms and fill point alarms have been installed within the diesel tanks. The alarms are linked to the BMS system.</p> <p>The interceptors are cleaned on an annual basis.</p> <p>Each set of generators are housed in acoustic containers, so any</p>	Low – management control measures in place.

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					<p>potential leaking is contained.</p> <p>Spill prevention kits are available in the plant areas. Staff have been fully trained in spill response and the use of personal protective equipment (PPE).</p>	
<p>Emissions to land and water - spills or leaks of hydrocarbon fuels from fuel delivery.</p>	<p>Site employees, local residential and commercial residents, underlying soils, groundwater, nearby water bodies and local sewerage system.</p>	<p>Through the drainage network, surface run off, vertical leaching through the soils and dermal contact.</p>	<p>Unlikely</p>	<p>Potential contamination of underlying soils, local sewerage system, groundwater, nearby water bodies and local fauna and flora.</p> <p>Damage to human health through ingestion.</p>	<p>Fuel delivery vendors are aware of Digital's standard operating procedures (SOP) and follow the agreed process.</p> <p>Emergency Response Plan and Pollution Prevention Response Plan have been communicated to all staff.</p> <p>Oil interceptors are located in the drainage system.</p> <p>Spill kits have been provided at the diesel fill point.</p>	<p>Low – management control measures are in place.</p>
<p>Emissions to land and water – chemical storage</p>	<p>Site employees, local residential and commercial residents, underlying soils,</p>	<p>Through the drainage network, surface run off, vertical</p>	<p>Unlikely</p>	<p>Potential contamination of underlying soils, local sewerage system, groundwater, nearby water</p>	<p>All chemicals used on site require a full COSHH assessment and COSHH sheets are held on site.</p>	<p>Low – management control measures are in place.</p>



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(small volumes).	groundwater, nearby water bodies and local sewerage system.	leaching through the soils and dermal contact.		bodies and local fauna and flora. Damage to human health through ingestion or dermal contact.	Chemicals are stored in a bunded and locked cabinets. Toolbox talks given to engineering staff covering all elements of the Safety Data Sheet. Spill training provided for all engineering staff and spill kits are located across the site.	
Emissions to water - surface water runoff in the car park areas into the local sewer.	On the southwest corner of the site there is a secondary superficial aquifer of medium vulnerability. The southeast corner of the site has a high vulnerability bedrock aquifer. The rest of the site is classified as an unproductive aquifer.	Drainage network on-site.	Unlikely	Potential contamination of the local sewerage system.	Surface drains flow through an oil interceptor, which will capture any accidental oil spills from the vehicles in the car park. Interceptor is inspected on an annual basis.	Low – management control measures are in place.
Emissions to water - process water:	On the southwest corner of the site there is a secondary	Drainage network on-site.	Unlikely	Potential contamination of the local sewerage system.	Although there is a risk of sewerage contamination in the secondary and	Low – management control

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<p>condensate from chillers into the local drainage system.</p>	<p>superficial aquifer of medium vulnerability. The southeast corner of the site has a high vulnerability bedrock aquifer. The rest of the site is classified as an unproductive aquifer.</p>				<p>bedrock aquifer below in the Tumbridge well sands and weald clay formations the surface drains flow through oil interceptors, which will capture any accidental oil spills from the vehicles in the car park. Interceptors are inspected on an annual basis.</p>	<p>measures are in place.</p>
<p>Emissions to land and water – leaking of generator service fluids from maintenance.</p>	<p>Site employees, local residential and commercial residents, underlying soils, groundwater, nearby water bodies and local sewerage system.</p>	<p>Through the drainage network, surface run off, vertical leaching through the soils and dermal contact.</p>	<p>Likely</p>	<p>Potential contamination of underlying soils, local sewerage system, groundwater, nearby water bodies and local fauna and flora.</p> <p>Damage to human health through ingestion or dermal contact.</p>	<p>A detailed method of procedure (MOP)/ risk assessment and method statements (RAMs) are generated for all major works on the generators. The RAMs include risk assessments relating to the management of engine fluids while on site.</p> <p>Large volumes of hazardous fluids will be delivered at the generator compound. Oil interceptors in the car park will contain any potential spills</p>	<p>Low – management control measures are in place.</p>

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					<p>from delivery vehicles.</p> <p>Sub-contractors will only be permitted to work following review of the approved MOP/RAM/s.</p> <p>The work area will be inspected by Digital engineering and security teams, to ensure adherence to the agreed MOP/RAM including chemical management measures.</p> <p>Major fluid and filter change outs are not a regular requirement as the generators do not run outside of monthly checks and emergency requirements.</p> <p>Spill kits are provided for sub-contractor during works involving fluid change.</p>	
Emissions to air – F-gas storage - F-	Site employees and surrounding atmosphere due	Airborne – through the	Likely	Increase in the level of greenhouse gas emissions.	F-Gas register on site.	Low – management control

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gas is held within the DX units & Chillers used to cool the data halls.	to high global warming potential	leaking of gases. Dermal contact and inhalation.		Damage to human health through ingestion or dermal contact.	Service program implemented to ensure chillers are maintained to manufacturer's recommendations. TM44 inspection done as part of site compliance. The DX units/chillers are inspected as part of the daily plant rounds to ensure they are operating normally. The DX & Chiller units are maintained and repairs by appropriate contractors.	measures are in place.
Noise from plant equipment on-site e.g., chillers, fans, transformers, and generators.	Local residential and commercial residents	Sound	Likely	Nuisance and disturbance to local residential and commercial residents by white noise.	No noise restrictions have been imposed on the site. Generators are housed in acoustic.	Low – management control measures are in place.
Odour from fuel storage on site.	Site employees and nearby residential and commercial residents	Airborne	Unlikely	Nuisance to on site staff and local nearby residents.	Bulk fuel is stored in internally banded sealed above ground storage tanks and waste oil materials	Low – management control measures are in place.

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					are stored in sealed drums. Neither allows emission of fugitive odours.	
Emissions to land – incorrect handling and disposal of hazardous waste – WEEE, UV lights, redundant plant, used spill materials and used oil/filters	Surrounding nature areas Local neighbourhood.	Site management	Likely	Hazardous material could be sent to inappropriate/unsuitable waste treatment facility or landfill which could cause contamination of waste streams Local visual pollution	Hazardous waste stream identified for all potentially hazardous waste produced on site. Appropriate waste bins have been placed on site to store; batteries, WEEE, Lights, used spill materials. Staff have been trained in their use. Licensed carriers have been identified for each waste stream all associated licenses and permits have been filed. Processing facilities for each waste stream/type has been identified and all associated licenses and permits have been filed.	Low – management control measures are in place.

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					Consignment notes for each disposal are filed and held on site.	
Generation of litter – incorrect handling and disposal of non-hazardous waste (handling, storage, and disposal) – plastic, paper, cardboard, and food.	Local nature areas. Local neighbourhood.	Site management	Likely	Litter can cause local visual pollution and an increase in vermin and odour	Staff have been educated in identifying different waste streams. Sub-contractors are made aware of our Environmental policy during the site induction. Confidential documents are shredded and disposed of in the general waste bins. Only licenced contractors are used to remove waste from site, receipts obtained for all removals. Transfer notes for all disposals are filed and held on site.	Low – management control measures are in place.
Emissions to air and water under emergency conditions – fire on site.	Site employees, local residential and commercial residents, local nature areas, underlying soils,	Airborne, surface run off and via the drainage system.	Likely	Potential for release of hazardous gases to atmosphere during fire. Water used to extinguish equipment may mix with	Substantial measures have been implemented to prevent a major fire. Detection: A fire detection has	Low – management control measures are in place.



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	groundwater, nearby water bodies and local sewerage system.			hazardous chemicals and discharge to soil, local sewerage system and underlying groundwater.	<p>been installed in the data halls and plant/switch rooms. This gives an early warning of potential fire or heat within critical space.</p> <p>Suppressions System: Fire suppression systems are in operation on-site.</p> <p>Fuel Safety: Comprehensive maintenance schedule in place for all fire prevention equipment; fire extinguisher, fire detection & fire suppressions system.</p> <p>Training on the use of fire equipment completed and fire detection/suppression systems with site team. Fire drills also undertaken on site.</p> <p>In addition, an Emergency Response Plan has been</p>	
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					communicated to all staff	
Emissions to air (global warming)- use of electricity to power all plant.	Surrounding environment through emissions of greenhouse gases.	Consumption of electricity.	Likely	Increase in greenhouse gases to the atmosphere contributing to global warming.	<p>Energy efficiency measures are undertaken a site to reduce the electricity consumption on site.</p> <p>Site and the rest of the Digital Realty portfolio have a certified ISO 50001 energy management system which drives energy efficiency at the site.</p> <p>The site holds a Climate Change Agreement and a Greenhouse Gas Permit, therefore monitors emissions, and aims to reduce them.</p>	Low – management control measures are in place.
Emissions to land – potential contamination from historical land use	Site employees, underlying soils, and groundwater.	Leaching through the soils and dermal contact.	Unlikely	The site was agricultural land until a factory and sports ground were built in the 1960’s. Following this, research laboratories were built, including tanks. In the 2010s the site was	Residual contamination would have been removed from the site during redevelopment.	Low



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				redeveloped to its current layout.		
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About EcoAct

Together with our clients, we act to put climate and nature centre stage to drive sustainable corporate transformation within planetary boundaries.

EcoAct is an international sustainability consultancy and project developer with 18+ years of industry experience and 360+ climate experts globally. Founded in France in 2005, the company now spans three continents with offices in Paris, London, Barcelona, New York, Montreal, Munich, Milan and Kenya.

EcoAct's core purpose is to lead the way in developing sustainable business solutions that deliver true value for both climate and client. Data is the cornerstone of our consulting practice, supported by our dedicated Climate Data Analytics and Research & Innovation teams.

At EcoAct we are driven by a shared purpose to make a difference. To help businesses implement positive change in response to climate and environmental sustainability challenges, whilst also driving commercial performance.

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