

Submission

Submitter:	Patricia Doonan
Organisation Name:	Health Service Executive
Submission Title:	Submission from Health Service Executive
Submission Reference No.:	S010899
Submission Received:	24 January 2023

Application

Applicant:	Microsoft Ireland Operations Limited
Reg. No.:	P1190-01

See below for Submission details.

Attachments are displayed on the following page(s).



Environmental Health Officers Service,
4th Floor Chamber House Chamber Square,
Tallaght,
Dublin 24
E-Mail:patricia.doonan@hse.ie

23/01/2023

Environmental Protection Agency,
PO Box 3000 Johnstown Castle Estate,
Co. Wexford

ID Number: 2911

Re: P1190-01

Proposed Development:Microsoft Dublin Data Center Campus, Unit 74-76 GRANGE CASTLE
BUSINESS PARK, NANGOR ROAD, Clondalkin, Dublin, D22

Dear Sir/Madam,

Please find enclosed the HSE consultation report in relation to the above proposal.

If you have any queries regarding any of these reports, the initial contact is Patricia Doonan Principal
Environmental Health Officer who will refer your query to the appropriate person.

The following HSE departments were made aware of the consultation request for the proposed development
on 15-12-2022

- HSE Emergency Planning
- HSE Estates
- HSE Health Protection
- Ms Mary O'Kelly

Environmental Health Report

The EH service response to the proposal is in the attached consultation report.

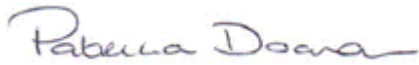
- The assessment is based (solely) on an assessment of documentation submitted to this office on 15/12/2022 by Microsoft Ireland Operations Limited, Microsoft Dublin Data Center Campus, Unit 74-76 GRANGE CASTLE BUSINESS PARK, NANGOR ROAD, Clondalkin, Dublin, D22
- Environmental Health were/were not included at the Screening / Scoping stage of this application
- All commitments to future actions including mitigation and further testing have been taken as read and all data results have been accepted as accurate.
- No additional investigations / measurements were undertaken.
- This report refers only to those sections of the documents which are relevant to the HSE.

We have made observations and submissions under the following specific areas :

- Noise
- Soil
- Water
- Air
- Climatic Factors
- Material Assets
- Interaction of the above

All correspondence or any queries with regard to this report including acknowledgement of this report should be forwarded to Patricia Doonan

Yours Sincerely,

A handwritten signature in blue ink that reads "Patricia Doonan". The signature is written in a cursive, flowing style.

Patricia Doonan

Principal Environmental Health Officer

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Environmental Health Officers Service,
4th Floor Chamber House Chamber Square,
Tallaght,
Dublin 24
E-Mail:patricia.doonan@hse.ie

HSE EIS SUBMISSION REPORT
Environmental Health Service Consultation Report
(as a Statutory Consultee (Planning and Development Acts 2000,
& Regs made thereunder)).

Date: 23/1/2023

Our Reference: ID2911

Report To: Environmental Licensing Programme
Office of Environmental Sustainability
Environmental Protection Agency
Johnstown Castle Estate
Co. Wexford

EPA Reference: P1190-01

Type of Consultation: Industrial Emissions

Applicant: Microsoft dublin data center campus, unit 74-76 grange castle business park,
dublin data center campus, unit 74-76 Grange castle business park, Nangor road, Clondalkin,
Dublin

Nature of Activity: Microsoft Operations Ireland Limited ('the operator') is applying to the Environmental Protection Agency ('the Agency') for an Industrial Emissions (IE) Licence for an existing Data Storage installation located in Grange Castle South Business Park, Dublin 22. The Data Storage installation will provide secure data storage services, and distribution of information to individuals, businesses and organisations. The facility consists of three datacentres, DB 3, 4 and 5. The 3 no. data storage buildings (DB 3, 4 and 5) have a total combined building footprint of 57,421 m2 on an overall site of approximately 10 hectare site with associated support buildings.

Introduction

The following HSE departments were notified of the consultation request for this development on the 15th of December 2022.

- **Emergency Planning – Brendan Lawlor**
- **Estates – Helen Maher/Stephen Murphy**
- **Director of National Health Protection – Eamonn O’ Moore**
- **CHO – Ann O’Shea**

This report only comments on Environmental Health impacts of the license review application. All commitments to future actions, including mitigation and further testing have been taken as read, and all data has been accepted as accurate. No additional investigations/measurements were undertaken in the review of the application.

In respect of this application, the areas reviewed were those of concern to Environmental Health and which are:

- Any potential contamination of surface water and ground water
- Emissions to air including noise and process emissions

Development:

The site comprises lands directly east of the R120 within the Grange Castle International Business Park, Clondalkin, Co Dublin and lies to the northwest of a second Microsoft Ireland data centre campus. The site is C. 10 ha and is bound to the west by private land and the R120, to the east by the Griffeen River and an internal access road for Grange Castle International Business Park, to the south by Aryzta Food Solutions Ireland, and to the north by an Edgeconnex data centre and Takeda Ireland Limited Grange Castle Pharmaceutical facility. Prior to the construction of the facility the site was an unmanaged greenfield.

Activities to be licensed

The installation will include a total of 41 no. generators comprising:

- 38 no. 5.46 MWth emergency backup generators to be used in the event of a loss of power supply to the data storage buildings;
- 3 no. 1.7 MWth emergency backup generators to be used in the event of a loss of power supply to ancillary services; and

In addition there are 2 no. 0.5 MWth fire pumps

The capacity of the back up generators is above the requirement for an Industrial Emissions (IE) Licence as outlined within the First Schedule of the EPA Act 1992. Activity ‘Class 2.1 Combustion of fuels in installations with a total rated thermal input of 50 MW or more’ specifically relates to this facility. The applicant is therefore, applying to the Environmental Protection Agency (EPA) for an IE Licence to operate the facility.

Noise:

The primary source of noise arises from the building service plant which are required to service the Data Centre (i.e. the AHU air intake and the AHU air exhaust), routine testing of the back-up generators, and in the event of a power failure there is noise produced by the generators. An assessment of the noise emission impacts in line with the EPA Guidance Note for Noise: Licence Applications, Surveys and Assessments in Relation to Scheduled Activities (NG4) has been conducted by and the results are summarised in Attachment 7-1-3-2 (Noise Impact Assessment).

The nearest residential noise sensitive locations to the existing and proposed sites are a number of detached dwellings located off the R120 that runs approximately beyond the western boundary of the site. Other commercial facility buildings are located beyond the south western boundary of the site with the Grange Castle golf course located on the opposite side of the business park road to the south east.

A detailed noise survey has been completed at six noise sensitive locations surrounding the site to establish the existing noise environment. This work has demonstrated that the existing noise environment is dictated by road traffic noise and noise associated with existing industry plant noise. In accordance with the relevant NG4 Guidance, appropriate operational noise criteria have been derived for the site which are based on consideration of the existing licence noise conditions and the existing noise environment at the nearest NSLs. A noise impact assessment has been completed using information obtained from the design team. A detailed computer-based noise model has been prepared using proprietary noise modelling software in accordance with the calculation method outlined in ISO 9613-2:1996. The predicted noise levels at all NSLs are below the day, evening and night-time noise criteria that are applicable to the site operations.

It is recommended given there may be potential access constraints at some noise sensitive locations and the presence of extraneous noise sources in the vicinity, it may be necessary to undertake compliance noise monitoring at the site boundary or at a suitable proxy location and assess to the nearest NSLs. Any such assessment should be undertaken in accordance with the guidance outlined in the EPA NG4 document and supported by a sufficiently detailed noise report outlining the calculation methods used to determine the noise emission levels at the NSLs.

Air

Air quality monitoring programmes have been undertaken in recent years by the EPA and Local Authorities . The most recent annual report on air quality “Air Quality in Ireland 2021” , details the range and scope of monitoring undertaken throughout Ireland. As part of the implementation of the Framework Directive on Air Quality (1996/62/EC), four air quality zones have been defined in Ireland for air quality management and assessment purposes(17) . Dublin is defined as Zone A and Cork as Zone B. Zone C is composed of 23 towns with a population of greater than 15,000. The remainder of the country, which represents rural Ireland but also includes all towns with a population of less than 15,000 is defined as Zone D. In terms of air monitoring, Grangecastle is categorised as Zone A.

The modelling of air emissions from the site was carried out to assess concentrations of nitrogen dioxide (NO₂) at a variety of locations beyond the site boundary. The modelling was undertaken to assess the impact to ambient air quality from the maintenance and testing of the

standby diesel generators and the infrequent emergency operation of the standby diesel generators. The modelling assessment also included the cumulative impact of the DB 3/4/5 standby diesel generators, as well as the existing IED licenced sites, neighbouring operational data storage facilities in the applicant's ownership, and other neighbouring proposed and operational energy and data storage facilities in the vicinity of the site.

The results indicate that ambient ground level concentrations are in compliance with the relevant air quality standards for NO₂ for all scenarios modelled within Attachment-7-1-3-2.

Water

The facility has both domestic water and cooling water demand. The potable water supply is supplied through a 100mm diameter main which is connected to the existing Irish Water watermain.

Stormwater drainage

The surface water measures have been designed in relation to Sustainable Urban Drainage Systems in accordance with the guidelines of the Greater Dublin Strategic Drainage Strategy. All stormwater passes through by-pass interceptors with carbon monitors and lockdown valves linked to the facilities BMS, prior to discharge to the existing 900mm stormwater sewer which runs west to east across the site south of DB3/DB4 and north of DB5. There are attenuation tanks in place at the site upstream of the interceptors. The existing stormwater sewer discharges into the River Griffeen east of the site. The control measures in place ensure only clean uncontaminated surface water will enter the existing stormwater sewer and be subsequently discharged to the River Griffeen. The outfall from DB3/DB4 and DB5 into the existing stormwater sewer is via a hydrobrake flow control device that limits discharge to 45 l/s. A series of lockdown valves are provided across the site to isolate the stormwater network, this allows for the attenuation systems to intercept runoff in the event of a fire or major spill event at the site.

Sewer

The sanitary effluent from the washroom facilities and break room areas from the data centre buildings is collected and connects via a 100mm Ø, 150mm Ø and 450mmØ gravity foul sewers and discharge at two outfalls (SE1 and SE-2) into the existing 450mm Ø sewer located to the east of the site. Average wastewater flow from the permitted development is circa 0.081l/s.

The foul drainage includes domestic effluent from the three data halls DB 3, 4 and 5. Average domestic wastewater flow from the installation is circa 2.5 m³ per day up to a maximum of c.7m³ per day.

Waste

The installation will not give rise to a large volume of wastes from operational activities. Attachment 8-1 outlines the waste types by LoW Code. Wastes are typically generated from ancillary activities and from the staff present onsite. There is an Operational Waste Management Plan (OWMP) in place for the facility. This plan ensures the proper management and recycling of wastes generated at the installation. The OWMP enables the facility to contribute to the targets and policies outlined in the Eastern-Midlands Region

Waste Management Plan 2015-2021. Wastes arising from the DB3,4,and 5 installation is, in the first instance, collected locally at DB3 building.

Climate

The operation of the installation will involve the consumption of electricity, fuel and mains water. The estimated quantities to be used when the installation is operational are specified in Attachment 4.6.1 The applicant will employ a variety of technologies to maximise the efficient use of energy within the installation. The installation is operated in accordance with an Energy Efficient Management System (EEMS), which is compliant and certified with the requirements of ISO50001, as well as the requirements of BAT.

Conclusion:

The facility has demonstrated compliance with their licensing conditions and the Environmental Health Service considers compliance with these licensing conditions provides adequate protection of Public Health.



Eve Smith
Environmental Health Officer

All correspondence or any queries with regard to this report including acknowledgement of this report should be forwarded to: Patricia Doonan
Principal Environmental Health Officer, Environmental Health Service HSE,
4th Floor | Chamber House | Chamber Square | Tallaght | Dublin 24