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RE: Further Information Response in relation to Planning Reference SD22A/0325 at 23 Magna Drive, Magna Business Park, Citywest, Dublin 24

INTRODUCTION

This additional information response document has been prepared by Cronin & Sutton Consulting Engineers (CS Consulting) on behalf of the applicant Origo Distribution Ltd in relation to Planning Reference SD22A/0325 at 23 Magna Drive, Magna Business Park, Citywest, Dublin 24.

This document addresses ***Item 2*** only of the request for further information issued on the 3rd of October 2022 by South Dublin County Council (SDCC) in respect of the above development application.

ITEM 2 OF THE REQUEST FOR FURTHER INFORMATION

Sustainable Urban Drainage Systems; The applicant is requested to submit the following:

(a) A drawing to show how surface water shall be attenuated to greenfield run off rates.

(b) Submit a drawing to show what SuDS (Sustainable Drainage Systems) are proposed. Examples of SuDS include permeable paving, filter drain planter boxes or other such SuDS.

(c) SUDs Management - The applicant is requested to submit a comprehensive SUDS Management Plan to demonstrate that the proposed SUDS features have reduced the rate of run off into the

existing surface water drainage network. A maintenance plan should also be included as a demonstration of how the system will function following implementation.

(d) Natural SUDS features should be incorporated into the proposed drainage system for the development such as bio-retention/constructed tree pits, permeable paving, green roofs, filtration planting, filter strip etc. In addition, the applicant should provide the following:

(i) Demonstrate how the proposed natural SUDS features will be incorporated and work within the drainage design for the proposed development.

IN RESPONSE TO ITEM 2 OF THE FURTHER INFORMATION REQUEST:

(a) The existing site of 23 Magna Drive is an existing live warehouse facility together with its associated car parking live and landscaped areas. The development site is already serviced with a storm drainage network and attenuation system that was granted permission under SD02A/0522. As part of that application an agreed discharge rate of 6.0 l/s was agreed and the existing site discharges no more than this volume of flow.

This application caters for an extension to the existing warehouse building and a small additional turning area for delivery vehicles. The original application SD02A/0522 catered for this future increase in hardstanding in its design of both the existing attenuation tank and existing pond currently serving the existing site.

The new extension elements shall drain to the existing surface water network and discharge at the current agreed rate of 6.0 l/s via the existing flow controls and attenuation systems prior to discharge to the public system. We note SuDS features are proposed as part of the extension works to further reduce the volume of runoff generated, see part (b) of this response.

We confirm there shall be no increase in flow to the public network from current scenario presently on the development site.

(b) Please see Drawing OWE-CSC-ZZ-XX-DR-C-0002 Rev P01 indicating the proposed SuDS systems proposed for the extension works. In summary they are as follows:

i. Permeable Paving: All new footpaths around the extension shall be constructed in permeable paving. These systems are used 'source control' method in managing surface water runoff. Water is managed and dealt with on-site without piping off to storage tanks or surface water treatment systems.

ii. Bio Retention Swales: Shallow landscaped depressions which are under-drained with engineered soils and enhanced vegetation and planting on the

surface which manage and treat runoff, at source, and promote biodiversity development. This system shall cater for the runoff generated from the roof extension and access area. These areas are approximately 2100 sqm in accordance with the CIRIA manual interception and treatment volumes should cater for the first 15mm of surface water runoff generated. Based on these requirements, a volume of 31.5m3 is required to serve the extension elements. A bio-retention swale of 65m3 is to be provided as part of the works double the requirement set out below.

iii. Rainwater butts - rain which falls first on to the roof area shall be collected in a water storage unit, to allow for re-use for landscaping purposes to reduce the reliance on the potable water network.

(c) As outline previously the following SuDS elements are proposed

- Permeable Paving
- Rainwater butts
- Bio-Retention Swale

These SuDS element locations are shown on Drawing OWE-CSC-ZZ-XX-DR-C-0002 Rev P01. As mentioned in Part (a) the proposed bio retention swale shall cater for the treatment and interception volumes generated by the extension works.

A SuDS Maintenance Plan is included in Appendix A to the rear of this document.

(d) As per Part B above the following SuDS elements are proposed as part of the extension works:

i. Permeable Paving: All new footpaths around the extension shall be constructed in permeable paving. These systems are used 'source control' method in managing surface water runoff. Water is managed and dealt with on-site without piping off to storage tanks or surface water treatment systems.

ii. Bio Retention Swales: Shallow landscaped depressions which are under-drained with engineered soils and enhanced vegetation and planting on the surface which manage and treat runoff, at source, and promote biodiversity development. This system shall cater for the runoff generated from the roof extension and access area. These areas are approximately 2100 sqm in accordance with the CIRIA manual interception and treatment volumes should cater for the first 15mm of surface water runoff generated. Based on these requirements, a volume of 31.5m3 is required to serve the extension

elements. A bio-retention swale of 65m³ is to be provided as part of the works double the requirement set out below.

iii. Rainwater butts - rain which falls first on to the roof area shall be collected in a water storage unit at the base of the rain water pipes, to allow for re-use for landscaping purposes to reduce the reliance on the potable water network.

Please see Drawing OWE-CSC-ZZ-XX-DR-C-0002 Rev P01 indicating the locations of the proposed SuDS systems as part of the extension works.

Gary Lindsay

Gary Lindsay

Associate Director

Civil Engineer

for Cronin & Sutton Consulting

Appendix A

SuDS MAINTENANCE PLAN

SuDS Maintenance

For the SuDS strategy to work as designed, it is important that the entire drainage system is well maintained. It will be the responsibility of the site management team to ensure the drainage system is maintained. Maintenance and clearing of gullies, drain manholes (including catch pits), and attenuation tanks will ensure adequate performance.

Permeable Paving

Regular inspection and maintenance are important for the effective operation of pervious pavements. Permeable pavements need to be regularly cleaned of silt and other sediments to preserve their infiltration capacity. Sweeping twice per year should be sufficient to maintain an acceptable infiltration rate on most sites. However, in some instances, more may be required, and the frequency should be adjusted to suit site-specific circumstances and should be informed by inspection reports.

A brush and suction cleaner (which can be a lorry-mounted device or a similar precinct sweeper) should be used for regular sweeping. Care should be taken in adjusting vacuuming equipment to avoid removal of jointing material in permeable paving. Any lost material should be replaced. It is also possible to clean the surface using lightweight rotating brush cleaners combined with power spraying using hot water.

If the surface has clogged then a more specialist sweeper with water and oscillating and rotating brushes may be required, especially for porous asphalt surfaces, to restore the surface infiltration rate to an acceptable level. The specialist sweeper should be adjusted so that it does not strip binder from the aggregate in the asphalt.

Post completion, road openings in the porous asphalt should be kept to an absolute minimum and they are likely to lower performance of the permeable asphalt as it will be difficult to replace like with like.

Bio Retention Swales

Swales will require regular maintenance to ensure continuing operation to design performance standards. The main cause of failure of bioretention swales is clogging of the surface, which is easily visible. Underdrains and drainage layers are beneath the ground, and malfunctioning is not so easy to detect and therefore could potentially be ignored. During the first few months after installation, the system should be visually inspected after rainfall events, and the amount of deposition measured, to give the operator an idea of the expected rate of sediment deposition. After this initial period, systems should be inspected each quarter, to verify the appropriate level of maintenance. Litter

picking should be frequent, as rubbish is detrimental to the visual appearance of bioretention systems. Frequent street sweeping in the catchment area will increase the time interval between cleaning out forebays or the filter surface and will reduce the loading of fine suspended solids that can potentially clog the filter medium. Plants should be assessed for disease infection, poor growth, and invasive species, and replaced as necessary.

Rainwater-Butts

Water butts are feed through gutters and rainwater downpipes. Gutters should be kept free of leaves and pine needles so as not to create tannins or discoloration of the water. If possible, cisterns should be placed in a shady area so as not to promote algae growth. A screen basket at the entrance of the cistern to keep debris from entering should be cleaned as needed.