Crocon Engineers Ltd.

Drainage Impact Assessment

Site at
Mardyke Street,
Skibbereen,

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			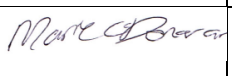	

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1 SURFACE WATER SEWER

An existing 315mm diameter uPVC combined surface water sewer serves the site. Where possible existing and proposed storm water outlets will be separated by way of new storm water pipe and associated manholes will be installed to the perimeter of the building. It will divert the existing sewer receiving surface water discharge from the development to contain storm water on site as far as practicable.

1.1 Drainage impact assessment.

This report will be prepared to provide details of the storm water elements associated with the proposed development. The report will deal with the following aspects associated with this development:

- Existing Site and Hydrological Features
- Storm Water Drainage Design
- Sustainable urban Drainage Systems (SuDS)
- Flood Risk Assessment and Exceedance Flows
- SuDS Maintenance.

1.2 Surface water management & Maintenance.

A thorough drainage impact assessment is crucial for understanding the potential effects of drainage systems on the environment and surrounding areas. It helps in identifying the potential impacts on water quality, hydrology, vegetation, wildlife, and human activities. The findings of a drainage impact assessment can guide decision-makers in developing appropriate mitigation measures and best management practices to minimise adverse effects and ensure sustainable drainage practices.

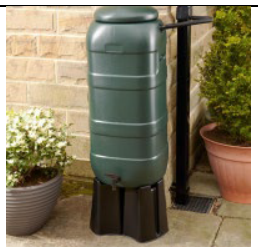
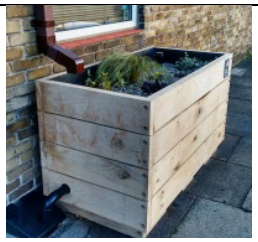
Modern surface water management requires a softer engineered or ‘nature-based approach’ to be used to manage rainfall runoff on the site i.e., to manage and treat surface water above-ground rather than sending rainfall below-ground into drains, pipes, attenuation tanks and other ‘hard engineering’ solutions. The aim is to maximise the retention and/or infiltration of storm water runoff on-site, minimise discharges to the public drainage system and to limit the discharge rates from the site to greenfield runoff rate or less.

Please refer to Irish Hydrodata Limited document for FRA

To help with selecting and using nature-based solutions, please see Table 1 which identifies the options to be utilised on this site.

Table 1

SUDS SELECTION HIERARCHY SHEET FOR SMALL-SCALE DEVELOPMENT

SuDS Measures		**Measures to be used on site**	**Rational for selecting / not selecting measure including discharge rate applied with supporting calculations**
Water butt – 150L capacity or more (based water use demand) with means of overflow		X	Water Harvesting Cost saving Environmental benefits
Permeable paving – consider for all hard paved areas without heavy traffic		X	Stormwater management Groundwater recharge Water quality improvement:
Bio-retention planter – disconnect downpipe connection into drains and allow roof runoff into planter with means of overflow		X	Stormwater management Groundwater recharge Water quality improvement: Enhanced landscaping Cost effective. Sustainable.
Rain garden - disconnect downpipe/RWP into the planted flower bed		x	Stormwater management Groundwater recharge Water quality improvement: Enhanced landscaping Cost effective. Sustainable. Engagement and education

Green / Blue Roof – requires a minimum substrate depth (growth medium) of at least 80 mm excluding the vegetative map			Limited applicability: Not compatible with design. Installation and ongoing maintenance costs Structural considerations
Other			

2 Flooding and Exceedance flows.

As part of the preliminary design process a Flood Risk assessment was carried out for the proposed development. An investigation was undertaken to determine the susceptibility of the site to flooding and an appropriate finished floor level (04.65m O.D) as part of the scheme design.

The report concluded that Residual & Long Term Flood Risk Failure of the main Skibbereen FRS defence works could potentially lead to flood waters reaching the 0.5%AEP (1:200 year) level of 3.54mOD (Figure 2.1). This would amount to a very damaging event for the main town area. However, there will be no impact at the proposed site. The longer-term risks associated with climate change are largely unknown. The FRS studies do not provide flood level predictions for future events. The ICWWS coastal water level predictions in Figure 2.4 show that the building will not be impacted even in the more extreme scenarios.

3 Conclusion.

In conclusion to the foregoing, regular monitoring and adaptive management should also be implemented to continuously evaluate the effectiveness of mitigation measures and make necessary adjustments to ensure ongoing environmental protection & sustainable water management.