

# Engineering Report

For  
**Proposed Change of Use**

At  
Westpark Crescent, City West,  
Saggart, Co. Louth

Client: Suites Hotel Management Ltd.

Date: 5<sup>th</sup> August 2022

Reference C2101

**JOSEPH CUNNINGHAM & ASSOCIATES LTD**  
chartered engineers • project managers • surveyors

Aspen House, 76 Seatown, Dundalk, Co.Louth  
Tel: 042 9335425 – Fax: 042 9329187 – Email: [jcunningham@jcassoc.net](mailto:jcunningham@jcassoc.net)  
Also at: No.3 Cannon Row, Navan, Co. Meath. Tel: 042 9078378



**Proposed COU at City West.**

Job Ref: C2101

Date: 05/08/2022

**CONTENTS**

- 1.0 Introduction & Existing Site**
- 2.0 Proposed Development**
- 3.0 Surface Water Drainage**

**Appendix: A – Reference Documents**

-  
-

## 1.0 Introduction & Existing Site.

The Westpark development is located immediately to the south of the N7 Dual carriageway, to the west of Garters Lane (a regional road) and to the north-eastern periphery of the City West Hotel and Golf Course complex. The subject site, while historically forming part of the overall Citywest Hotel and Golf Course complex, is physically separate and distinct from the rest of the complex. The subject site is triangular in shape facing in a south-west to north-east direction and is situated on a relatively flat site. The north and east boundaries are clearly defined by hedgerows and fence lines while the south-west boundary which is adjacent to the adjoining site is an open boundary and not well defined.

There is an existing entrance from Garters Lane which serves the adjoining units. The entrance to Westpark Crescent is served by this entrance road from Garters Lane and traverses the adjoining site before entering the Crescent Units site from the south west

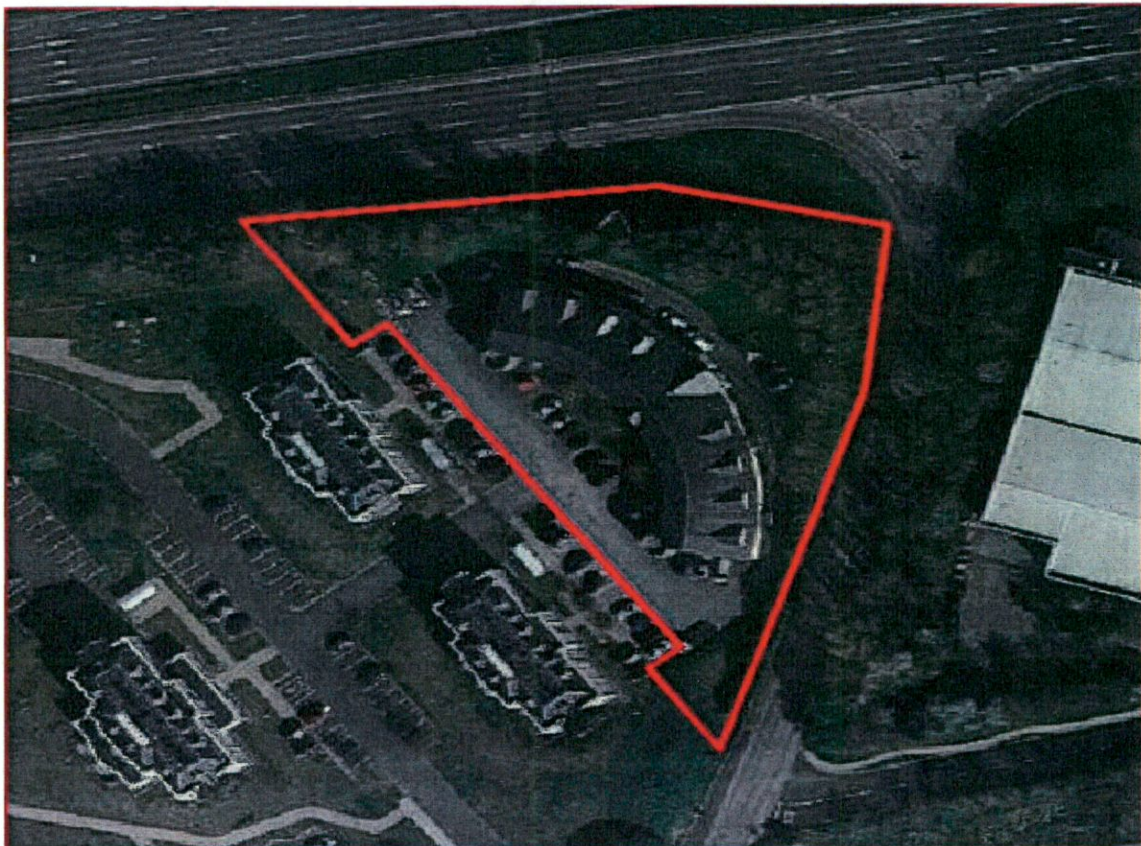


Fig 1 – Outline of Existing Site

direction.

## **2.0 PROPOSED DEVELOPMENT**

As this application is for a change of use from one type of residential living accommodation to another with very limited works involved bar some addition amenity space in the form extended balconies only.

## **3.0 Surface Water Drainage.**

### **Existing Surface Water Drainage.**

No works are being proposed to the drainage network system. The area of the site equates to c. 4,625m<sup>2</sup>. The roof area of the existing buildings equated to c. 950m<sup>2</sup> or 20% of the site area. The hard standing area (car parking, footpaths and circulations areas) is 1,970m<sup>2</sup> or 43% of the site area and consists of mainly porous bitmac paving. The proposed permeable area (car parking) amounts to 200m<sup>2</sup>. The landscape and green areas = 1,700m<sup>2</sup> or 37% of the site area. Therefore, the total existing impermeable area of the site is mainly made up of the roof area and circulation areas, footpaths and roads 2,720m<sup>2</sup> or 58% of the site area. While the total existing permeable area is 1875m<sup>2</sup> or 42% of the site area.

At present the surface from the site is drained by 150mm diameter surface water drainage pipes located through the hardstanding areas and discharges into the public storm line as shown on Drg. No C2101-P08.

### **Storm Water Drainage details for Proposed Development.**

We are proposing to provide some attenuation for the proposed impermeable area in the form of a drainage layer to the car parking bays, as this will greatly enhance the existing situation and reduce the run-off into the existing surface water drainage network. A Sub-base drainage layer c. 250mm deep can be incorporated beneath this permeable paving, having a storage capacity of cira.15m<sup>3</sup> thus reducing the run-off to take public drainage network. See Drg No C2101-P03a for details.

The landscape proposal has also incorporated 8 no new tree pits which can also be used as a Suds feature.

## **SUDS Criteria**

Water Quality – The existing site is utilised as a residential type development only. The pollution risks associated are of a low risk. We consider that the existing three stage treatment through the conveyance system would be adequate to protect the receiving watercourse from any pollutants, as recommended in the CIRIA C697 guidance document.

Amenity Criteria - The site is located in a residential area and is open generally to residents of the area and site visitors only. A SUDS feature such as permeable paving located beneath the ground level would provide minimum risk to Health & Safety.

Surface Water Pre-Treatment – Surface water pre-treatment is provided through road gullies containing silt traps and roof gullies before it enters the pipe network. Therefore, the water quality entering the public storm lines from the site is reduced and the quality of water improved.

Pollution Prevention Methods – Total proposed impermeable site area is 2,720m<sup>2</sup>, which is mainly roof area and circulation roads, while the remainder is where polluting elements would be negligible. The remainder is a combination of solid paving/permeable paving and localised footpaths, subject to pedestrian traffic only. A three-stage treatment of any pollutants/sediments would be achievable through the conveyance system, via the use of ‘first flush’ infiltration across the main drive way drainage layer and silt-traps at manholes, to trap sediments/pollutants.

Management Train – As outlined in CIRIA 697 guidance document, for roof areas, a single treatment component is recommended, whereas for roads/footpaths and Car parks areas, three treatment components are recommended. This development is designed to comply with the above:

1. Roof Areas – to be piped through the rainwater pipework system and rainwater gullies before entering the storm water network system.
2. Paved areas - Two stage treatment provided by initially ‘first flush’ infiltration to the drainage layer at the parking, secondly by Infiltration/Storage/pipe in the pipe network.
3. Thirdly by silt traps at manholes to trap sediments / pollutants.

Source Control – Upon review of the site layout, we have assessed options to rise the impervious surfaces of the proposed site. By proposing the use of permeable paving where possible and storage drainage layer beneath the car parking areas. This can control the first 5-10mm runoff (‘first flush’) from the roads and CP area. This above is

considered as a suitable SUDS technique to slow/prevent runoff from the site. In addition, a Pre-treatment can be achieved through the use of rainwater gullies for roof runoff and silt traps in manholes across the paved areas, to collect pollutants.

Infiltration/Storage – A stone drainage layer is proposed throughout the full footprint of the parking areas (c. 200m<sup>2</sup>) providing first stage infiltration and storage.

Overland flow routes for Exceedances –Adjacent to the perimeter of the green areas there will road gullies which will take any overflow from this area. These road gullies and stone drainage layer is connected via a perforated storm drainage pipe laid beneath the access road, this will allow both infiltration to the stone layer beneath the car parking bays and also will take any overflow from the site. **Note:** Overflow will also be available onto the green areas by providing gaps in the kerb lines.

Protection of Development from adjacent over land flows – The access Road to the site is served with road gullies and a storm drainage pipe. The entrance road to the site has a cross fall and surface water will dispose to road gullies which are located at each side of the entrance.

## A. REFERENCE DOCUMENTS

1. The SUDS Manual, CIRIA C697
2. Recommendations for site development works for housing areas, November 1998.
3. 'Greater Dublin Strategic Drainage Study' 2005.
4. "Greater Dublin Regional Code of Practice for Drainage Works Version 6.0"  
FCC April 2006.

