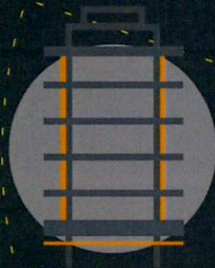


Retention of Change of use in Parklands, Citywest

Site Services Report

162073-DBFL-XX-SP-RP-C-0001

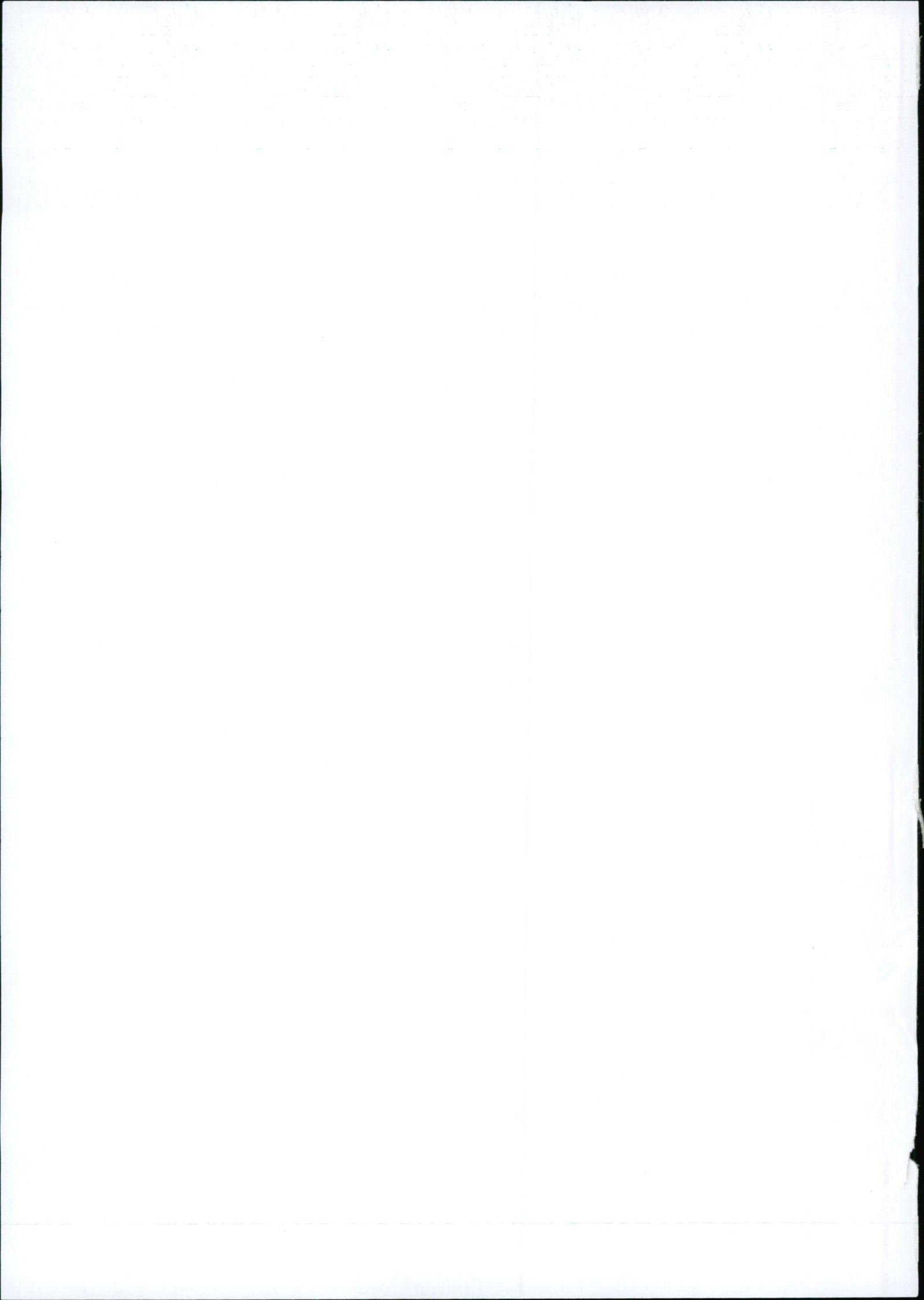
INFRASTRUCTURE



October 2022



DBFL CONSULTING ENGINEERS





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| Rev. | Date | Description | Prepared | Reviewed | Approved |
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| P01 | 14/10/222 | For Planning Submission | Kabelo Mokoka | Kevin Sturgeon | Dan Reilly |
| | | | | | |
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1 INTRODUCTION

DBFL Consulting Engineers were commissioned by the applicant to provide engineering design services in support of a Retention of change of use at Parklands Parade, Parklands, Saggart, Co. Dublin.

It is proposed to apply for a change of use permission to amend the scheme previously permitted crèche and community centre under Reg. Ref. SD18A/0420 (SHD3ABP-300555-18) to the now built residential duplex unit which contains two separate dwellings.

This technical note considers the impact of the retention of change of use to the subject site on the previously approved engineering details including the following;

- Flood risk assessment.
- Surface water strategy and servicing.
- Foul sewer strategy and servicing.
- Water supply and servicing.
- Road Layout/Site access.

2 SITE LOCATION

The subject site is located at Saggart / Citywest within the jurisdiction of South Dublin County Council. It is bounded to the north by Citywest & Saggart Community National School, south and west by the parent Parklands residential development. The Cuil Duin and Parklands creche and community centre and the access road to Citywest & Saggart community national school are located to the east, refer to Figure 2-1.

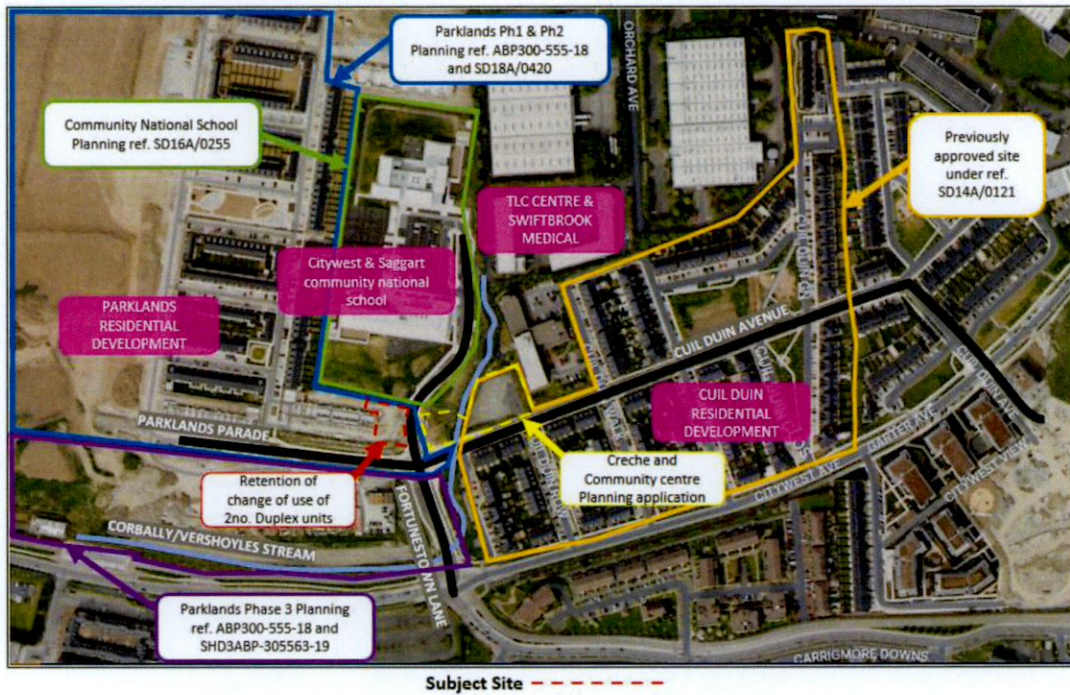


Figure 2-1: Site Location (indicative red line) [Source: Bing Maps]

3 PROPOSED DEVELOPMENT

The development will consist of the retention of 2no. as-built two-bed, two-storey duplex units with associated private and communal amenity spaces, bin and bike store, and all associated amendments to hard and soft landscaping on the adjoining street at Parklands Parade in lieu of previously permitted creche and community facility at this location, refer to Figure 3-1.

The amendments that accompany the retention of change of use application include :

- A subdivision of the previously permitted three-story crèche and community center building into a two-story residential duplex building with separate entrances.
- The building imprint remains the same with an area of 111.18sqm. The duplex building is subdivided into two separate dwellings each with an area of 55.59sqm and a total gross floor area of 193.6 sqm which is a reduction from the previously permitted 270.9 sqm.
- Both units share a communal space of 84sqm which houses the Bike& bin storage as per previously permitted.
- The creche playpark has be replaced with a green area and section of footpath to provide access to the duplex unit.
- The access and egress route for vehicles remains unchanged. Whereas parking provision has reduced from 5 to 2 parking spaces. Additional access and egress route for pedestrians has been included.
- The previously approved creche and community center are proposed to be relocated to the lands adjacent to Fortunestown Lane and Cuil Duin avenue. An application for the planning permission is to be considered under the previously permitted permission ref. SD14A/0121.



Figure 3-1: Retention of Change of use as-built plan [extract from Darmody Architecture Drawing PA-001 as-built duplex block site plan]

4 FLOOD RISK

The proposed retention of change of use from creche to 2 Nr duplexes does not affect the site levels or land use vulnerability or existing flood risk of the existing Parklands development or adjacent lands.

Flood Risk was examined in detail within the Site Specific Flood Risk Assessment (SSFRA) submitted as part of the Parklands development, planning ref: SD18A/0420 and is unchanged by this application. The SSFRA found that the site is in Flood Zone C and is at low risk of flooding. It is therefore appropriate for the proposed highly vulnerable residential development.

Proposed Finished floor levels (FFLs) of the duplexes are a minimum of 500mm above the top water level of the proposed stormwater drainage network for a 1 in 100yr storm event including 20% increase for climate change and are outside overland flood routes, refer to Figure 4-1.



Figure 4-1: Post development 1% AEP and 0.1% AEP MRFs Peak Flood levels (indicative Subject site red line) [Source CityWest Flood Risk Assessment by JBA consulting 2019]

5 STORMWATER STRATEGY

The proposed retention of change of use from a creche to duplexes results in a minor decrease of impermeable area from 450m² to 430m². Given the minimal difference, the stormwater flows and velocities for the existing stormwater network are unchanged. As such the stormwater strategy and drainage approach previously approved for the Parklands development (planning ref: SD18A/0420) is unchanged and results in no change to the stormwater attenuation storage provision, pipe design (capacities or velocities) or SUDs systems installed, and does not impacted the allowable discharge rate from the development.

The duplexes share a private 160mm diameter stormwater drainage connection with the rest of the apartments on this block. It in turn falls south to the main stormwater sewer on Parklands Parade to connect at manhole S13-10-2, refer to Figure 5-1.

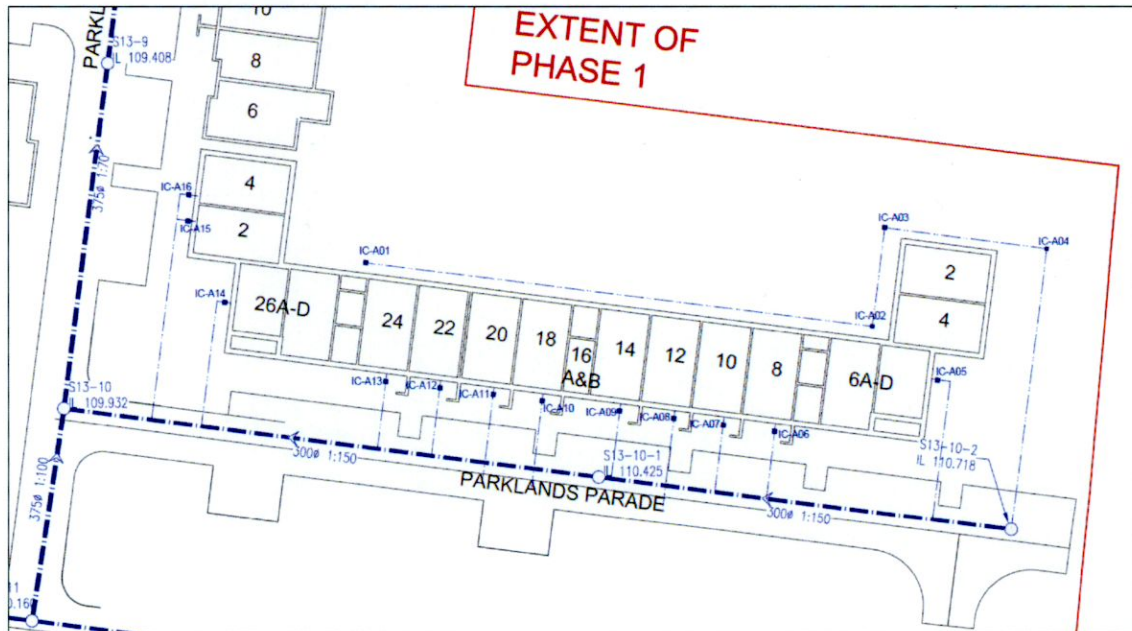


Figure 5-1: Stormwater drainage layout serving duplexes [Extract from as-built drawings]

6 FOUL SEWERAGE

The proposed retention of change of use from a creche to 2 duplexes will result in a reduction in estimated daily foul loading (3.4m³ to 0.81m³) and reduction in Dry Weather Flow (0.04l/s to 0.01l/s), refer to Table 6-1.

| RESIDENTIAL - PREDICTED DEVELOPMENT FOUL FLOWS | | | | | | |
|--|-----|-------------------------|--------------------------|-----------|------------------------|----------------------|
| Unit Type | No. | Loading l/person/day | Occupancy person/unit | Occupancy | Daily Loading l/day | Daily Loading l/s |
| Residential Duplex | 2 | 150 | 2.7 | 5.4 | 810 | 0.01 |
| Residential Daily Loading | | | | | | 0.01 |
| Growth Factor | | | | | | 1 |
| Infiltration @ 10% (as CoP App B 2.2.4) | | | | | | 0.00 |
| Dry Weather Flow l/s | | | | | | 0.01 |
| Residential Peak Factor (as CoP App B 2.2.5) | | | | | | 6.0 |
| Design Foul Flow l/s | | | | | | 0.06 |
| *Flow rates calculated using IW CoP for Wastewater Infrastructure Appendix C | | | | | | |

| NON-RESIDENTIAL - PREDICTED DEVELOPMENT FOUL FLOWS | | | | | | |
|--|------------------------------|--|-----------|-------------------------|------------------------|----------------------|
| Unit Type | Floor Area m ² | Occupancy Load m ² /person | Occupancy | Loading l/Person/day | Daily Loading l/day | Daily Loading l/s |
| Creche and Community facility | 271 | 4 | 68 | 50 | 3,400 | 0.04 |
| Non - Residential Daily Loading | | | | | | 0.04 |
| Growth Factor | | | | | | 1 |
| Infiltration @ 10% (as CoP App B 2.2.4) | | | | | | 0.00 |
| Dry Weather Flow l/s | | | | | | 0.04 |
| Commercial Peak Factor (as CoP App B 2.2.7) | | | | | | 4.5 |
| Design Foul Flow l/s | | | | | | 0.19 |

Table 6-1: Estimated foul loading comparison (As-Built residential Duplex vs Permitted Creche & Community centre)

The change of use does not impact the main foul sewer system within Parklands or Parklands Parade, proposed under SD18A/0420. Manholes, connections and pipe gradients have been constructed to accommodate the change of development, refer to Figure 6-1 for as-built layout.

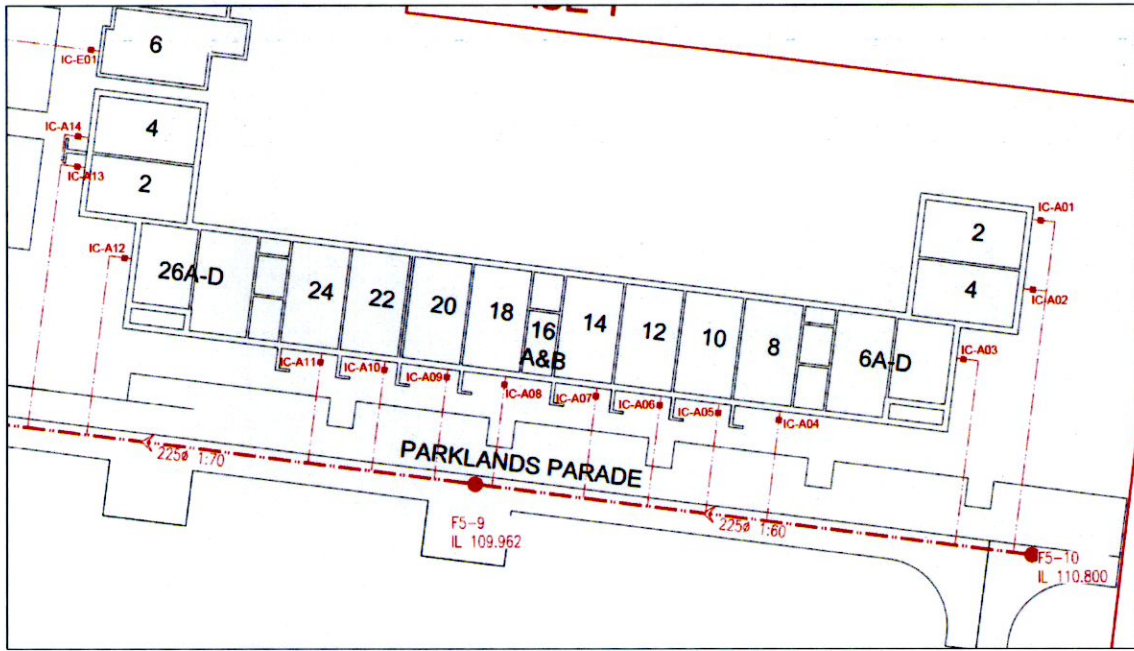


Figure 6-1: Foul drainage layout serving duplexes [Extract from as-built drawings]

7 WATER DEMAND

The proposed retention of change of use from a creche to 2 duplexes reduces the water demand generated by the site (Average Daily Demand reduces from 0.04l/s to 0.01l/s), refer to Table 7-1.

| RESIDENTIAL - WATER DEMAND | | | | | | |
|--|---------------|--------------------------|-----------|-------------------------------------|-------------------------------------|-----------------------------------|
| Unit Type | No. Dwellings | Occupancy Rate /dwelling | Occupancy | Per Capita Consumption l/Person/day | Average Daily Domestic Demand l/day | Average Daily Domestic Demand l/s |
| Residential Houses | 2 | 2.7 | 5 | 150 | 810 | 0.01 |
| Total Average Daily DEMAND l/s | | | | | | 0.01 |
| Average Day/Week Domestic Demand | | | | | | 1.25 |
| Average Day/Peak Week Demand l/s | | | | | | 0.01 |
| Peak Demand Factor | | | | | | 5 |
| Peak Hour Water Demand l/s | | | | | | 0.06 |
| *Flow rates calculated using IW CoP for Water Infrastructure | | | | | | |

| NON-RESIDENTIAL WATER DEMAND | | | | | | |
|--|---------------------------|---------------------------------------|-----------|-------------------------------------|----------------------------|--------------------------|
| Unit Type | Floor Area m ² | Occupancy Rate m ² /person | Occupancy | Per Capita Consumption l/Person/day | Average Daily Demand l/day | Average Daily Demand l/s |
| Creche and Community facility | 271 | 4 | 68 | 50 | 3,400 | 0.04 |
| Total Average Daily DEMAND l/s | | | | | | 0.04 |
| Average Day/Week Demand | | | | | | 1.25 |
| Average Day/Peak Week Demand l/s | | | | | | 0.05 |
| Peak Demand Factor | | | | | | 5 |
| Peak Hour Water Demand l/s | | | | | | 0.25 |
| *Flow rates calculated using IW CoP for Water Infrastructure | | | | | | |

Table 7-1: Estimated water demand comparison (As-Built residential Duplex vs Permitted Creche & Community centre)

The change of use does not impact the main watermain distribution system or supply within Parklands or Parklands Parade, as permitted by SD18A/0420. To facilitate the 2 duplexes, a 50mm dia MDPE (PE80) private service pipe from the Block A apartments pump house connects each dwelling, refer to Figure 7-1.

The applicant will continue to liaise with Irish Water in relation to water supply and watermain network details.

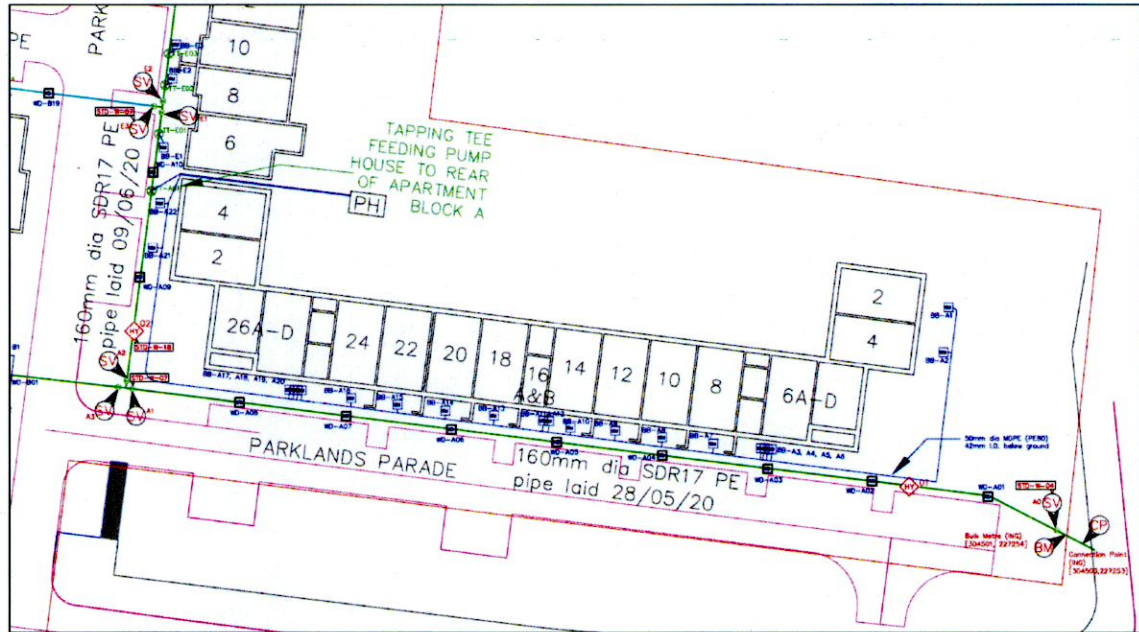


Figure 7-1: Water distribution layout serving duplexes [Extract from as-built drawings]

8 PARKING AND ACCESS

The proposed retention of change of use from a creche to 2 duplexes will reduce the volume of traffic on Parklands Parade as the 2 dwellings will have a lower trip rate than the previous creche. The change of use does not impact the previously proposed road layout previously permitted by SD18A/0420.

Overall there is a reduction of parking spaces provided from 5 on-street spaces to 2 on-street spaces, refer to Figure 8-1: Permitted vs As-built Parking layout .

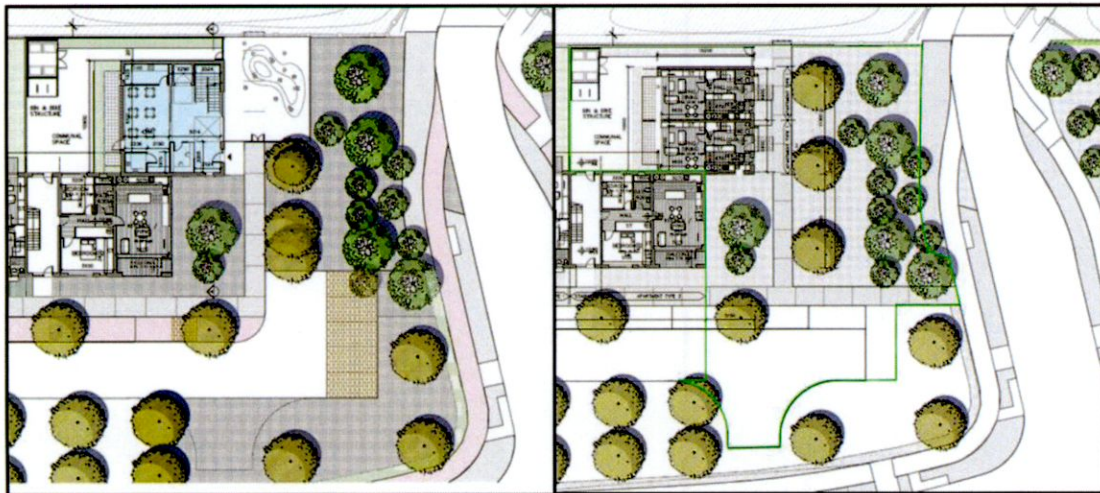


Figure 8-1: Permitted vs As-built Parking layout [extract from Darmody Architecture drawing]

There is no impact on the measures set out in the previously submitted Deliveries Management Plan or the Mobility Management Plan under SD18A/0420.



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