# FLOOD RISK ASSESSMENT, CORKAGH PARK PAVILION

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Our Reference

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## Record of Approval

| Details | Written by | Approved by |
|---|---|---|
| Signature |  |  |
| Name | Paul Conaghan | Teri Hayes |
| Title | Environmental Consultant | Director (Water) |
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## EXECUTIVE SUMMARY

AWN Consulting Ltd (AWN) has been appointed by CAAS Ltd to undertake a Flood Risk Assessment ("FRA") within and surrounding a proposed sports pavilion development at Corkagh Park.

The site is currently a mixture of hardstanding (car park and roads with associated surface water drainage) and greenfield located in the western section of the wider Corkagh Park/ Demesne. The existing car park within the proposed development boundary which will be retained. A number of playing pitches are located to the north with the R136 situated to the west. The site is currently zoned as objective OS - To preserve and provide for open space and recreational amenities as per the SDCC Development Plan.

The OPW online flood map tools were consulted and indicated there has been no previously recorded flood event at the proposed development site. Flood events have been recorded both upstream and downstream of the proposed development. The Camac Cherry Wood flood events as they are listed were recorded in 1982, 1993 and 1994 (OPW, 2020). The OPW CFRAM mapping available shows the proposed developed primarily resides in Flood Zone A - 10% AEP Fluvial Flood Event (1 in 10 year). Under the sequential approach and within section 3.5 under the FRM guidelines (2009) any building that is used for: "*Amenity open space, outdoor sports and recreation and essential facilities such as changing rooms*" is classed as a "*Water Compatible Development*"

The proposed development is for a sports pavilion located within an area currently zoned for local amenities and housing a number of dressings room, storage areas and ancillary services. Finished floor level to be 76.053 mAOD which is circa 500 mm above the 1:1000-year AEP flood level of 75.56 mAOD and 900 mm above the 1:100-year AEP river flood level of 75.15 mAOD in the nearby River Camac.

Overall, it is concluded that this proposed development is not at risk from flooding with the proposed finished floor level for the development at 76.053 mAOD which is circa 500 mm above the 1:1000-year AEP flood level of 75.56 mAOD and 900 mm above the 1:100 year AEP river flood level of 75.15 mAOD in the nearby River Camac. The development is classified as "water compatible" as per OPW FRM Guidelines and as such the proposed sports pavilion is appropriate for lands within Flood Zone A.

## DISCLAIMER

The findings and opinions expressed in this report are based on information available at the time the report was prepared and our own experience. If additional information becomes available, which might alter AWN's conclusions, we reserve the right to review such information, reassess potential concerns and modify our opinions, if warranted. Please note that where we refer to information in reports from others, it must be recognised that AWN has no responsibility for the accuracy of the information contained therein.

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This report does not include an assessment of suitability for discharge to ground.

## COPYRIGHT

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**Appendices**



**Figures**

# 1 INTRODUCTION

AWN Consulting Ltd (AWN) has been appointed by CAAS Ltd to undertake a Flood Risk Assessment ("FRA") within and surrounding a proposed site for the development of a new sports pavilion at Corkagh Park,

The proposal is for a new sports pavilion building (approx. 800 $m^2$) including team dressing rooms, equipment storage and ancillary services. The site is green field and located to the west of the current Corkagh Park located near the Naas road stretching towards Clondalkin

This report and assessment have been prepared by AWN Consulting Ltd.'s Water Team. Teri Hayes BSc MSc PGeo is a Hydrogeologist with >25 years' experience in environmental and flood impact assessment. She is a former president of The International Association of Hydrogeologists (IAH Irish Group) and is a professional member of the Institute of Geologists of Ireland (IGI) and European Federation of Geologists (EurGeol). Paul Conaghan BSc MSc is an Environmental Consultant with AWN with project experience in environmental and flood risk assessments.

## 1.1 Scope

This assessment is undertaken in accordance with the guidelines produced by the Department of the Environment, Heritage and Local Government (DoEHLG). - *The Planning System and Flood Risk Management Guidelines for Planning Authorities*, November 2009, hereafter referred to as the FRM Guidelines.

As per the FRM Guidelines a tiered approach has been taken. This usually begins with a Stage 1 Assessment which aims to quantify the risk posed to the development and to the surrounding environment by this development. A Stage II Flood Risk Assessment includes a site walkover to confirm site conditions and the natural drainage of the proposed development site. The main aim of this FRA is to determine the risk of flooding to the site and the impact development will have on the floodplain, developments off site, upstream and downstream levels and any mitigation measures necessary.

From the initial investigation, it was deemed necessary to complete a Stage II Flood Risk Assessment for this site due it being located within Flood Zone A. as per the OPW's Catchment Flood Risk Assessment and Management (CFRAM) mapping. This indicates that the prosed development site and the surrounding area of Corkagh Park is at a high probability of flooding. High Probability flood events have approximately a 1-in-a-10 chance of occurring or being exceeded in any given year. This is also referred to as an Annual Exceedance Probability (AEP) of 10%

This hierarchy of assessment ensures that flood risk is taken into account at all levels of the planning system but also that the right level of detail is considered. This avoids the need for detailed and costly assessments prior to making strategic decisions.

In terms of the Flood Risk Assessment and Management Study the scope of this work incorporates three stages:

- ***Stage 1: Flood Risk Identification -*** to identify whether there may be any flooding or plan issues related to a plan area or proposed development site that may warrant further investigation.

- ***Stage 2: Initial Flood Risk Assessment -*** to confirm sources of flooding that may affect a plan area or proposed development site, to appraise the adequacy of existing information and to determine what surveys and modelling approach is appropriate to match the spatial resolution required and complexity of the flood risk issues. The extent of the risk of flooding should be assessed which may involve preparing indicative flood zone maps. Where existing river or coastal models exist, these should be used broadly to assess the extent of the risk of flooding and potential impact of a development on flooding elsewhere and of the scope of possible mitigation measures; and,

- ***Stage 3: Detailed Flood Risk Assessment -*** to assess flood risk issues in sufficient detail and to provide a quantitative appraisal of potential flood risk to a proposed or existing development, of its potential impact on flood risk elsewhere and of the effectiveness of any proposed mitigation measures. This will typically involve use of an existing or construction of a hydraulic model of the river or coastal cell across a wide enough area to appreciate the catchment wide impacts and hydrological processes involved.

As described in the FRM guidelines flood risk is a combination of the likelihood of flooding and the potential consequences arising. This is normally expressed in terms of the following relationship:

*Flood risk = Probability of flooding x Consequences of flooding*

Likelihood of flooding is normally expressed as the percentage probability based on the average frequency measured or extrapolated from records over a large number of years. A 1% probability indicates the flood level that is expected to be reached on average once in 100 years, i.e. it has a 1% chance of occurring in any one year. Therefore:

- 100-year flood = 1% Annual Exceedance Probability (AEP).
- 1000-year flood = 0.1% AEP.

In the FRM Guidelines, the likelihood of a flood occurring is established through the identification of Flood Zones which indicate a high, moderate or low risk of flooding from fluvial or tidal sources, as defined as follows:

- *Flood Zone A* - Where the probability of flooding is highest (greater than 1% AEP or 1 in 100 for river flooding and 0.5% AEP or 1 in 200 for coastal flooding) and where a wide range of receptors would be vulnerable.

- *Flood Zone B* - Where the probability of flooding is moderate (between 0.1% AEP or 1 in 1000 and 1% AEP or 1 in 100 for river flooding and between 0.1% AEP or 1 in 1000 year and 0.5% AEP or 1 in 200 for coastal flooding); and

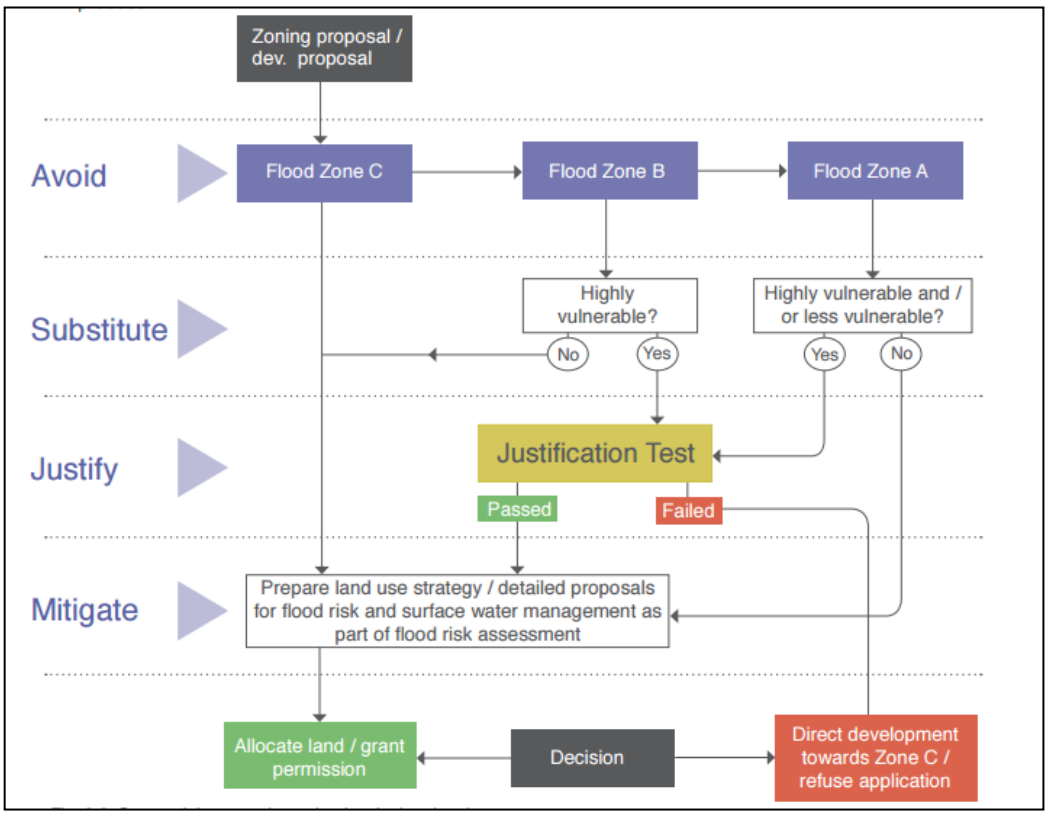
- *Flood Zone C* - Where the probability of flooding is low (less than 0.1% AEP or 1 in 1000 for both river and coastal flooding).

This report contains the second stage of the flood risk assessment, where a detailed flood risk assessment was required due to location of the proposed development which is shown on CRAM mapping as within Flood Zone A and is also in close proximity to the River Camac immediately to the North.

Stage 2 – Initial Flood Risk Assessment, in accordance with the guidelines produced by the Department of the Environment, Heritage and Local Government (DoEHLG) -

*The Planning System and Flood Risk Management Guidelines for Planning Authorities*, November 2009.

Potential impacts of the proposed development were considered within the study area. This is defined as the area within the proposed development site boundary (i.e. the proposed development site), and the wider hydrological setting of the area. A sequential approach was undertaken for this risk assessment under guidance from the local planning authorities (2009). Specifically, a sequential approach is first and foremost directed towards land that is at low risk of flooding. The underpinning philosophy of the sequential approach is highlighted in the illustration below. Based on the *CFRAM* maps a portion of the proposed development site resides in Flood Zone A.




***Insert 1*** Sequential approach mechanism in the planning process

## 1.2 Methodology

This assessment follows the FRM Guidelines; the methodology involves researching the following data sources:

- Base maps – Ordnance Survey of Ireland
- Flood Hazard Maps and flooding information for Ireland, www.floodmaps.ie Office of Public Works (OPW)
- Geological Survey of Ireland (GSI) maps on superficial deposits (current and historical)
- South Dublin County Council Development Plan 2016-2022
- The National Development Plan 2018 – 2027
- Dunboyne, Clonee, Pace Local Area Plan (LAP) November 2014.

Under the sequential approach and within section 3.5 under the FRM guidelines (2009) any building that is used for: "*Amenity open space, outdoor sports and*

*recreation and essential facilities such as changing rooms*" is classed as a "*Water Compatible Development*" (see Table 1 below).

| Vulnerability class | Land uses and types of development which include*: |
|---|---|
| Highly vulnerable development (including essential infrastructure) | Garda, ambulance and fire stations and command centres required to be operational during flooding;<br>Hospitals;<br>Emergency access and egress points;<br>Schools;<br>Dwelling houses, student halls of residence and hostels;<br>Residential institutions such as residential care homes, children's homes and social services homes;<br>Caravans and mobile home parks;<br>Dwelling houses designed, constructed or adapted for the elderly or, other people with impaired mobility; and<br>Essential infrastructure, such as primary transport and utilities distribution, including electricity generating power stations and sub-stations, water and sewage treatment, and potential significant sources of pollution (SEVESO sites, IPPC sites, etc.) in the event of flooding. |
| Less vulnerable development | Buildings used for: retail, leisure, warehousing, commercial, industrial and non-residential institutions;<br>Land and buildings used for holiday or short-let caravans and camping, subject to specific warning and evacuation plans;<br>Land and buildings used for agriculture and forestry;<br>Waste treatment (except landfill and hazardous waste);<br>Mineral working and processing; and<br>Local transport infrastructure. |
| Water-compatible development | Flood control infrastructure;<br>Docks, marinas and wharves;<br>Navigation facilities;<br>Ship building, repairing and dismantling, dockside fish processing and refrigeration and compatible activities requiring a waterside location;<br>Water-based recreation and tourism (excluding sleeping accommodation);<br>Lifeguard and coastguard stations;<br>Amenity open space, outdoor sports and recreation and essential facilities such as changing rooms; and<br>Essential ancillary sleeping or residential accommodation for staff required by uses in this category (subject to a specific warning and evacuation plan). |
| *Uses not listed here should be considered on their own merits | |

***Table 1*** Classification of vulnerability of different types of development.

| | Flood Zone A | Flood Zone B | Flood Zone C |
|---|---|---|---|
| Highly vulnerable development (including essential infrastructure) | Justification Test | Justification Test | Appropriate |
| Less vulnerable development | Justification Test | Appropriate | Appropriate |
| Water-compatible development | Appropriate | Appropriate | Appropriate |

***Table 2*** Matrix of vulnerability versus flood zone to illustrate appropriate development and that required to meet the Justification Test.

# 2 EXISTING HYDROLOGICAL ENVIRONMENT

## 2.1 Site Location

The study area is located within the Irish River Basin District (former known as Eastern River Basin District (ERBD)) in Hydrometric Area No. 09 of the Irish River Network. It is within the River Liffey and Dublin Bay catchment.

The River Liffey catchment encompasses an area of approximately 1,369km$^2$. The river extends from the mountains of Kippure and Tonduff in County Wicklow to the sea at Dublin Bay. The main channel covers a distance of approximately 120km and numerous tributaries enter along its course. The Camac River is the nearest notable water course which is situated directly to the north of the proposed development (see Figure 1 below). A number of lake features which appear to have been developed as part of the park are located to the east of the site.

The site is currently a mixture of hardstanding (car park and roads with associated surface water drainage) and greenfield located in the western section of the wider Corkagh Park/ Demesne. The existing car park within the proposed development boundary which will be retained. A number of playing pitches are located to the north with the R136 situated to the west. The site is currently zoned as objective OS - To preserve and provide for open space and recreational amenities as per the SDCC Development Plan.

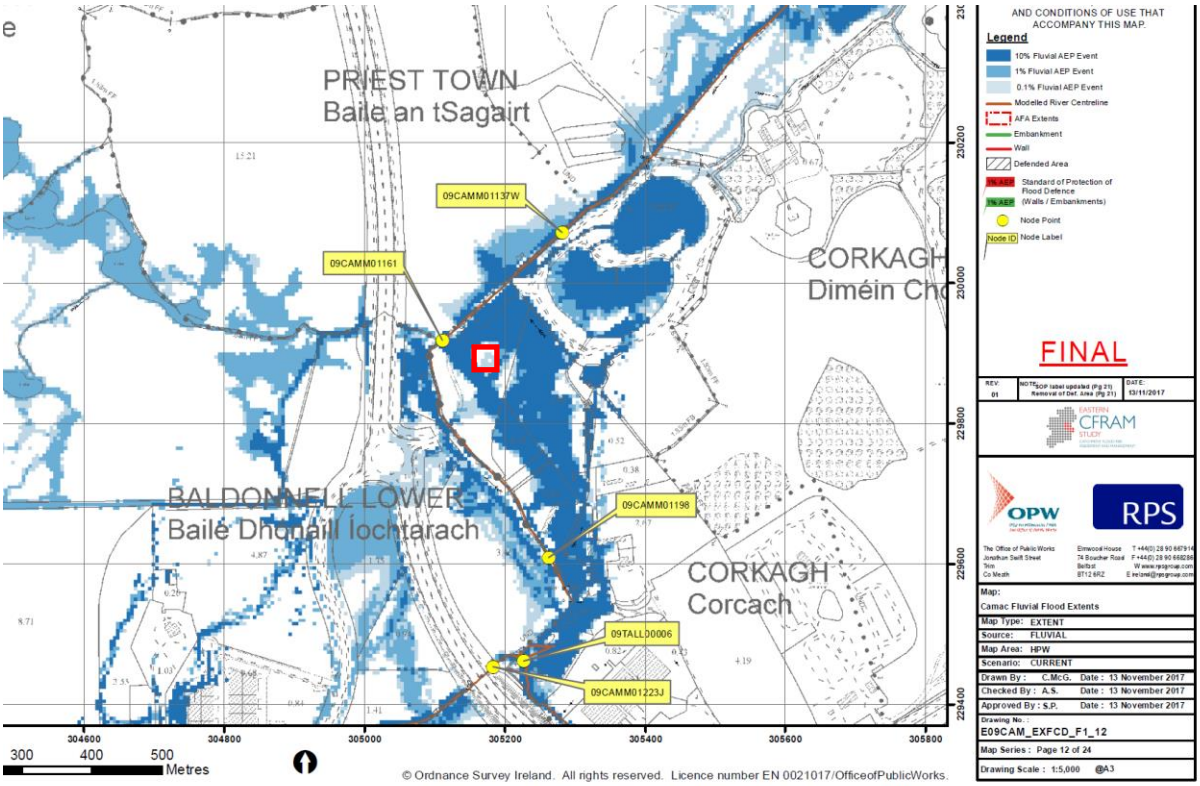

***Figure 1*** *Site location map with rivers. Note: Drawing is for illustrative purposes only; Do not scale*

## 2.2 Existing Flood Records and CFRAM Data

Historical flood data was reviewed for the area. Existing reports and any other previous assessments (including any assessments carried out by the OPW was reviewed).

The OPW online flood map tools were consulted and indicated there has been no previously recorded flood event at the proposed development site. Flood events have been recorded both upstream and downstream of the proposed development. The Camac Cherry Wood flood events as they are listed were recorded in 1982, 1993 and 1994 (OPW, 2020).

The OPW CFRAM mapping available shows the proposed developed primarily resides in Flood Zone A - 10% AEP Fluvial Flood Event (1 in 10 year).




***Insert 2 (a)*** *Extract from CFRAM map (No. E09CAM_EXFCD_F1_12) Site outlines in Red.*

A Strategic Flood Risk Assessment (SFRA) for the SDCC development plan was published in January 2016 Map. The SFRA showed that the proposed development area is mostly within Flood Zone A. (Figure MDW657_0009)

## 2.3 Site Walkover – Assessment of Topography and Existing Drainage

A site walkover was carried out on Thursday 6th February 2020 with an additional walkover undertaken on 12th of February 2020. The walk over was to ascertain the causes of flooding (if any) at the site, to examine any evidence of previous flooding events and to establish the conditions and drainage system of the proposed site. The second site walkover was carried out following a rainfall event (Storm Ciara). The site is a mixture of hardstand (existing carpark) and greenfield (where it is proposed to locate the pavilion.

The following points were noted during the site investigation:

- No physical evidence of regular fluvial flooding e.g. flood marks which would suggest frequent flooding was observed on the proposed development site during this walkover. Further more there were no rushes or other vegitation suggesting periods of water logging at the proposed location of the pavilion development,

- As stated, the area of proposed development is currently a mixture of hardstand and greenfield hardstand. The area is drained by a number of storm water drains which discharge to the Camac River.

- The walkover was undertaken following a number of days of storm conditions (Storm Ciara). Water levels in the Camac immediately north of the proposed site were elevated but there was no indication that the River in this location was subject to bank overflow.

***Note:*** *All site visit pictures are presented in Appendix IV – Site Photographs. Please refer to these pictures during this report. Refer to*

Current drainage from the site is believed to be to storm drains and overland flow to the Camac River. Natural local drainage would be towards the river to the north but as par of the area is hardstanding the natural drainage in the area has been altered. The site is generally flat 76.00 metres above ordinance datum (mAoD).

### 2.4 Existing Site Geology and Hydrogeology.

The subsoil map presents the area to be made up of glacial tills and rock. The glacial till deposits are derived from limestones. See Figure 2 in Appendix VI. Reference to the GSI Bedrock Geology indicates that the site is underlain by the Lucan Formation. This formation consists of mainly dark Calp limestone and shales. See Appendix VI, Figure 3.

The GSI website provides information on its public online mapping service at www.gsi.ie on bedrock aquifers and vulnerability. The aquifer vulnerability determines the limitations of the drainage, i.e. whether infiltration drainage methods will be appropriate. The GSI vulnerability classification for the site is categorised as ‘High’ suggesting a depth to bedrock in the area of 3-4 metres bgl (moderate permeability till), see Appendix VI - Figure 4. Subsoil mapping does indicate the presence of alluvium type soils which can be an indicator of historic flooding on site but does indicate these to the west bordering the Camac.

The bedrock aquifer underlying the site has been assigned an aquifer classification of a ‘Locally Important (Ll) which indicates that the bedrock is generally productive only in Local Zones’; see Figure 5 Appendix VI.

## 3 DESCRIPTION OF DEVELOPMENT

The proposed development is for a sports pavilion located within an area currently zoned for local amenities and housing a number of dressings room, storage areas and ancillary services. Finished floor level to be 76.053 mAOD which is circa 500 mm above the 1:1000-year AEP flood level of 75.56 mAOD and 900 mm above the 1:100-year AEP river flood level of 75.15 mAOD in the nearby River Camac.

Foul water will be pumped under pressure to an existing manhole at the west of site. Surface water will be managed sustainably by means of sedum roof and permeable paving, with minimal overflow to temporary storage by storm tech or sump and final discharge to stream. Design drawing(s) are included in Appendix III.

# 4 FLOOD RISK IDENTIFICATION

## 4.1 Fluvial Flooding

Review of historical records such as the OPW Flood maps and the GSI Subsoil maps were undertaken as part of this study. Historical flooding has been identified onsite, in particular two substantial flooding events referred to in section 2.2.

As CFRAM fluvial mapping for the site shows the development resides in ***Flood Zone A***).

## 4.2 Pluvial Flooding

Pluvial flooding is usually caused by intense rainfall that may only last a few hours. The resulting water follows natural valley lines, creating flow paths along roads and through and around developments and ponding in low spots, which often coincide with fluvial floodplains in low lying areas. Any areas at risk from fluvial flooding will almost certainly be at risk from pluvial flooding.

The vegetation found at the site was not consistent with lands prone to waterlogging. There were no signs of flooding at the proposed site area. The second site walkover undertaken on 12th of February 2020 was conducted flowing a number of days of high rainfall (Storm Ciara). There was no indication of pluvial flooding at the time.

## 4.3 Groundwater Flooding

Groundwater flooding can be due to high water tables and increased recharge following extended periods of wet weather. Groundwater flooding typically occurs in areas underlain by limestone and where underlying geology is highly permeable with high capacity to receive and store rainfall.

The the vulnerability of the underlying bedrock at the proposed development site is classified as ‘High’ with a possible 3-4 metres of overburden underlying the site (GSI, 2019). This along with the site walkover, which confirmed the site is currently underlain by circa 2.5 metres of overburden, indicates that the proposed site has a low risk from groundwater flooding. The proposed development does not include a basement or substructure

## 4.4 Overview of Flood Risk Identification

As per the OPW CFRAM mapping and SDCC SFRA the proposed development site site is situated in Flood Zone A due to its rick from a fluvial flooding event from the nearby River Camac. The proposed development will a pavilion housing dressing rooms for the nearby sports fields. This would classify it as a water compatible development as per the OPW Guidelines.

The bedrock underlying the site has a vulnerability classification of “High” (OPW, 2020) which signifies 3-4 metres of overburden overlying the bedrock. Based on past

flood events in the area and the site walkover there is no evidence of groundwater flooding.

The site is currently hardstand and the final floor level of the proposed development will be 76.053 mAOD circa. 500 mm above the modelled 1:1000-year fluvial flood event in the nearby Camac River (OPW, 2020) There has been no recorded flood event at the proposed development site itself site (OPW, 2019).

As noted in above, proposed development is located within Flood Zone A which is at high risk of flooding. As noted in Section 1.2 the scheme is classified a water compatible development. Accordingly, a Justification Test for Development Management is not required as per the OPW Guidelines.

# 5 CONCLUSIONS

This Stage II Flood Risk Assessment has been undertaken in accordance with the FRM guidelines. The main aim of this FRA is to determine the risk of flooding to the site and the impact, development will have on the floodplain, upstream and downstream levels and any mitigation measures necessary. CFRAM modelling and mapping is not available for this area. According to FRM Guidelines a justification test was not required as the proposed project is a “water compatible development”.

The sequential approach for flood risk assessment, as outlined in the FRM guidelines, was undertaken. As the site is within Flood Zone A i.e. a flood event has a 1 in 10 chance of occurring or being exceeded in any given year, a Stage II Flood Risk Assessment was undertaken. Two site visits were carried out Thursday 6th February 2020 with an additional walkover undertaken on 12th of February 2020 (following the Storm Ciara).

The site currently is a mixture of hard stand (road and carpark with surface water drainage) and greenfield. The proposed development has planned measures to manage the surface run-off. These include the utilisation of a sedum roof and permeable paving. As the has a high percentage of hardstand there will be minimal increase in run-off post any development. Additionally.

Overall, it is concluded that this proposed development is not at risk from flooding with the proposed finished floor level for the development at 76.053 mAOD which is circa 500 mm above the 1:1000-year AEP flood level of 75.56 mAOD and 900 mm above the 1:100 year AEP river flood level of 75.15 mAOD in the nearby River Camac. The development is classified as “water compatible” as per OPW FRM Guidelines and as such the proposed sports pavilion is appropriate for lands within Flood Zone A.

# 6 REFERENCES

1. The Planning System and Flood Risk Management Guidelines for Planning Authorities, DoEHLG, 2009.
2. Base maps, Ordnance Survey Ireland.
3. Flood Hazard Maps and flooding information for Ireland, www.floodmaps.ie (accessed February 2020)
4. GSI Bedrock Geology, Subsoils, Aquifers, Groundwater vulnerability online mapping, www.gsi.ie (accessed February 2020)

5. South Dublin County Council Development Plan 2016-2022.
6. The National Development Plan 2018 - 2027.

# APPENDICES

# APPENDIX I

## FLOOD HAZARD MAPPING

SPORTS FIELD

TRUNK FOUL SEWER Ø 750mm

EXISTING BRIDGE

HIGH PRESSURE GASMAIN

EXISTING POND

NORTH.

SCALE 1:500

FB

FB

PROPOSED 6 No. CHANGING ROOM PAVILION

GRASS AREA

EXISTING CAR PARK

DRIVE WAY

OPTION 1

OPTION 2

OPTION 3

SITE OUTLINE IN RED

GRASS AREA

100mm CAST IRON WATER MAIN

ACCESS FROM RING ROAD R 136

HIGH PRESSURE GASMAIN

# CORKAGH PARK PAVILION

PART 8 2019

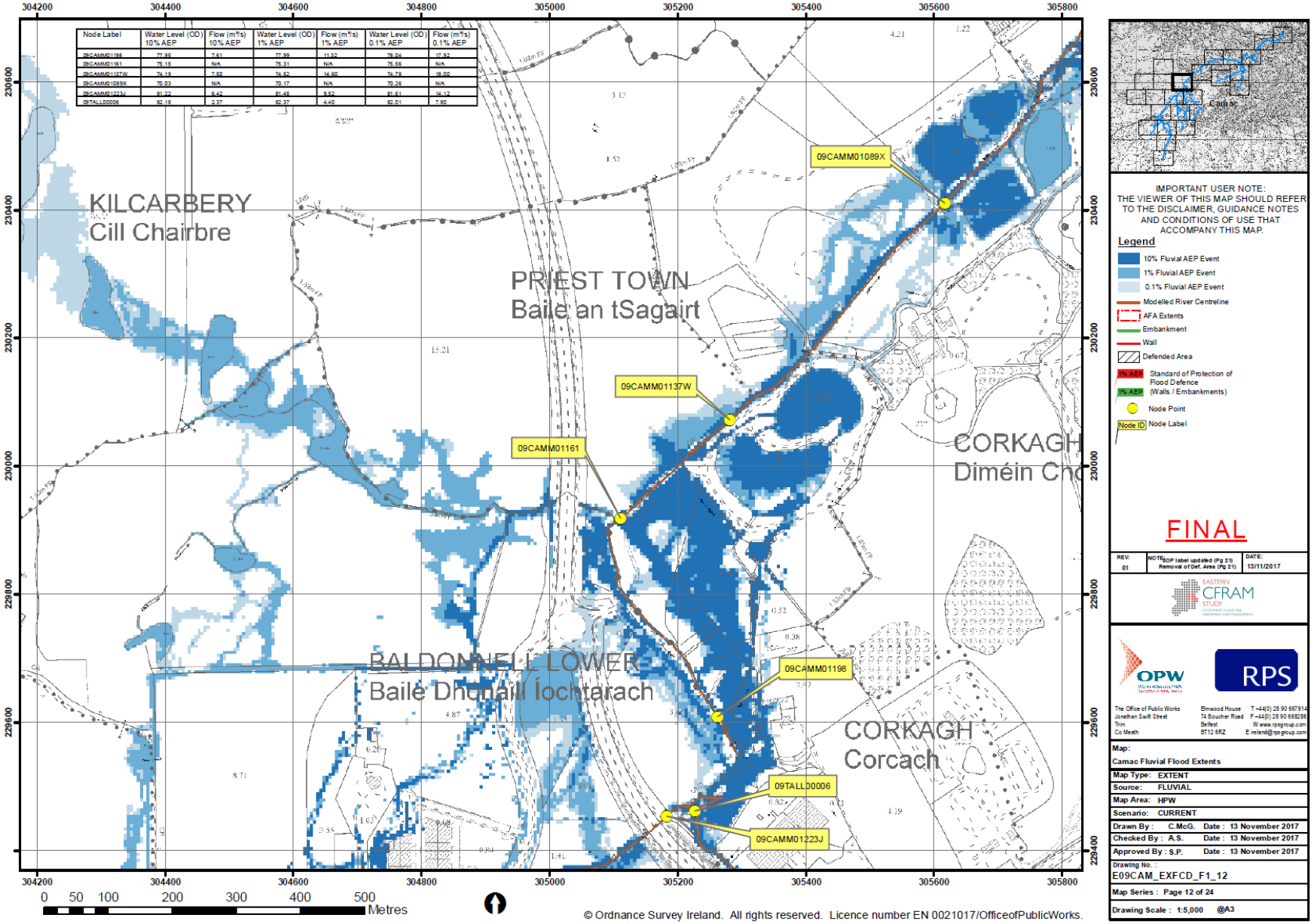
SHEET 03

PART 8

Comhairle Contae Átha Cliath Theas
South Dublin County Council

# APPENDIX II

## CFRAM FLOOD MAP


Node Label | Water Level (OD) 10% AEP | Flow (m³/s) 10% AEP | Water Level (OD) 1% AEP | Flow (m³/s) 1% AEP | Water Level (OD) 0.1% AEP | Flow (m³/s) 0.1% AEP
09CAMM01198 | 77.95 | 7.61 | 77.99 | 11.32 | 78.04 | 17.92
09CAMM01161 | 76.15 | N/A | 76.31 | N/A | 76.56 | N/A
09CAMM01137W | 74.19 | 7.59 | 74.62 | 14.66 | 74.78 | 18.09
09CAMM01089X | 70.03 | N/A | 70.17 | N/A | 70.26 | N/A
09CAMM01223J | 81.22 | 5.42 | 81.45 | 9.62 | 81.61 | 14.12
09TALL00006 | 82.18 | 3.37 | 82.37 | 4.40 | 82.61 | 7.80
KILCARBERY
Cill Chairbre
PRIEST TOWN
Baile an tSagairt
CORKAGH
Diméin Ch
BALDONNELL LOWER
Baile Dhonaill Iochtarach
CORKAGH
Corcach
09CAMM01089X
09CAMM01137W
09CAMM01161
09CAMM01198
09TALL00006
09CAMM01223J
304200 304400 304600 304800 305000 305200 305400 305600 305800
230600 230400 230200 230000 229800 229600 229400
0 50 100 200 300 400 500
Metres
© Ordnance Survey Ireland. All rights reserved. Licence number EN 0021017/OfficeofPublicWorks.
IMPORTANT USER NOTE:
THE VIEWER OF THIS MAP SHOULD REFER TO THE DISCLAIMER, GUIDANCE NOTES AND CONDITIONS OF USE THAT ACCOMPANY THIS MAP.
Legend
10% Fluvial AEP Event
1% Fluvial AEP Event
0.1% Fluvial AEP Event
Modelled River Centreline
AFA Extents
Embankment
Wall
Defended Area
1% AEP Standard of Protection of Flood Defence
1% AEP (Walls / Embankments)
Node Point
Node ID Node Label
FINAL
REV: 01
NOTE: SOP label updated (Pg 21) Removal of Def. Area (Pg 21)
DATE: 13/11/2017
EASTERN CFRAM STUDY
OPW
RPS
The Office of Public Works
Jonathan Swift Street
Trim
Co Meath
Elmwood House
74 Boucher Road
Belfast
BT12 6RZ
T +44(0) 28 90 667914
F +44(0) 28 90 668386
W www.rpsgroup.com
E ireland@rpsgroup.com
Map:
Camac Fluvial Flood Extents
Map Type: EXTENT
Source: FLUVIAL
Map Area: HPW
Scenario: CURRENT
Drawn By : C.McG. Date : 13 November 2017
Checked By : A.S. Date : 13 November 2017
Approved By : S.P. Date : 13 November 2017
Drawing No. :
E09CAM_EXFCD_F1_12
Map Series : Page 12 of 24
Drawing Scale : 1:5,000 @A3

# APPENDIX III

## DRAWINGS OF THE PROPOSED DEVELOPMENT

Grange Castle
Golf Course

R 136

SPORTS FIELD

FISHING
LAKE

TRUNK FOUL SEWER Ø 750mm

EXISTING BRIDGE

HIGH
PRESSURE
GASMAIN

EXISTING CAR PARK

PROPOSED 6 No. CHANGING ROOM PAVILION

DRIVE WAY

HOLDING TANK

GRASS AREA

ATTENUATION
AREA

COVER LEVEL 76.21
INVERT LEVEL 74.37

150mm GRAVITY CONNECTION
PROPOSED STAND OFF MANHOLE

ACCESS FROM RING ROAD R 136

GRAVEL
TRACK

SITE OUTLINE IN RED

100mm CAST IRON WATER MAIN

FOUL TO STAND OFF MANHOLE

NOTE : HOLDING TANK, RISING MAIN
STAND OFF MANHOLE AND ALL
ASSOCIATED WORKS TO COMPLY WITH
IRISH WATER CODE OF PRACTICE OR
WASTEWATER INFRASTRUCTURE

HIGH
PRESSURE
GASMAIN

# SITE PLAN

SCALE 1:1000

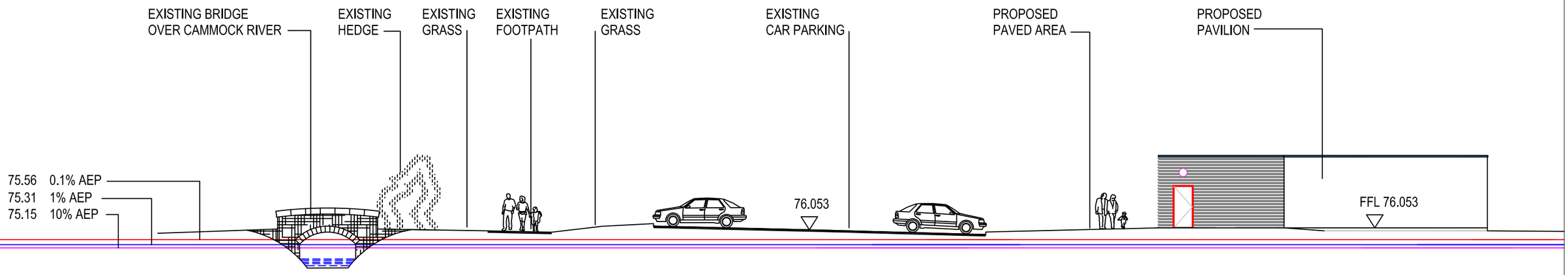
# OPTION 1B

CORKAGH PARK PAVILION PART 8 2019

SHEET 03

PART 8

Comhairle Contae
Atha Cliath Theas
South Dublin County Council

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| No. | DATE | REVISION |
|---|---|---|
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| | | |
| | | |
| | | |

SCALE:- 1:200 ( A3 SHEET )

DATE:- JUNE. 2019

DRAWN:- nf CHECKED BY: EC

DESIGN AND BUILD FRAMEWORK
PARKS PAVILIONS
AND ANCILLARY WORKS
( CORKAGH PARK )

# SKETCH SCHEME
# SITE CROSS SECTION

JOB. NO: XXXXX

DRAWING. NO: Sk. 003

REV.

# APPENDIX IV

## PHOTOGRAPHS

***Plate 1*** Location of Proposed Development. Note mixture of hardstanding & greenfield

***Plate 2*** River Camac at bridge to north. Note levels following Storm Ciara

***Plate 3*** River Camac - Photo taken to the north of proposed development. Note relatively good condition of water level following storm period the previous number of days

# APPENDIX V

## DEVELOPMENT PLANS AND POLICIES

**South Dublin County Council Development Plan 2016-2022**

The EU Floods Directive and the recommendations of the 2004 National Flood Policy Review Report are driving forces behind flood management in Ireland. The Planning System and Flood Risk Management Guidelines for Planning Authorities, DECLG and OPW (2009) and DECLG Circular P12/2014 address the interface between flood risk management and the planning system. The guidelines state that the steps in the development plan process and its Strategic Environmental Assessment need to be supported by an appropriate analysis of flood risk.

A Strategic Flood Risk Assessment (SFRA) of the County has been prepared to support the Strategic Environmental Assessment of the County Development Plan. The assessment was carried out in accordance with the requirements of the Flood Risk Management Guidelines. The SFRA Report is a separate document to be read in parallel with this Plan. The SFRA identifies and maps flood risk in the County and has supported a sequential approach to planning, in accordance with the recommendations of the Flood Risk Management Guidelines.

**INFRASTRUCTURE & ENVIRONMENTAL QUALITY (IE) Policy 3 Flood Risk**

**It is the policy of the Council to continue to incorporate Flood Risk Management into the spatial planning of the County, to meet the requirements of the EU Floods Directive and the EU Water Framework Directive.**

**IE3 Objective 1:**

To support and co-operate with the Office of Public Works in delivering the Catchment-Based Flood Risk Assessment and Management Programme and in particular the Eastern District CFRAMS and associated Flood Risk Management Plan (FRMP), the River Dodder CFRAMS and associated Flood Risk Management Plan (FRMP). The recommendations and outputs arising from the CFRAM study for the Eastern District shall be considered in preparing plans and assessing development proposals.

**IE3 Objective 2:**

To support the implementation of the EU Flood Risk Directive (2007/60/EC) on the assessment and management of flood risks and the Flood Risk Regulations (SI No 122 of 2010).

**IE3 Objective 3:**

To manage flood risk in the County in accordance with the requirements of The Planning System and Flood Risk Management Guidelines for Planning Authorities, DECLG and OPW (2009) and Circular PL02/2014 (August 2014), in particular when preparing plans and programmes and assessing development proposals. For lands identified as being at risk of flooding in (but not limited to) the Strategic Flood Risk Assessment, a site-specific Flood Risk Assessment to an appropriate level of detail, addressing all potential sources of flood risk, is required, demonstrating compliance with the aforementioned Guidelines or any updated version of these Guidelines, paying particular attention to residual flood risks and any proposed site specific flood management measures.

**IE3 Objective 4:**

To support and facilitate the delivery of flood alleviation schemes in South Dublin County, including the following schemes:

- Poddle Flood Alleviation Scheme.
- Ballycullen Flood Alleviation Scheme.
- Whitechurch River Flood Alleviation Scheme (at Rathfarnham); part of the Dodder CFRAMS.
-

**IE3 SLO 1:**

To require the preparation of a site and catchment specific Flood Risk Assessment and Mitigation Strategy, prepared by a qualified person(s), to be submitted with any proposal for development on the 'EE' zoned lands and demonstration that the development satisfies all the criteria of the Development Management Justification Test as set out in Table 2.3 of the document titled 'Strategic Flood Risk Assessment for SDCC Development Plan - Detailed Report on Flood Risk in the Baldonnell Area'

**ET1 Objective 7:**

To restrict enterprise and employment development at locations that are environmentally sensitive or at risk of flooding.

**G3 Objective 3:**

To ensure the protection, improvement or restoration of riverine floodplains and to promote strategic measures to accommodate flooding at appropriate locations, to protect ground and surface water quality and build resilience to climate change.

### 11.6.1 WATER MANAGEMENT

#### (i) Flood Risk Assessment

Flood risk management will be carried out in accordance with the Flood Risk Management Guidelines for Planning Authorities, DECLG (2009) and Circular PL2/2014. The Dodder CFRAMS, Eastern CFRAMS and the Strategic Flood Risk Assessment for South Dublin County Council Development Plan 2016-2022 provide information in relation to known flood risk in South Dublin County.

For lands identified as at risk of flooding in (but not limited to) the South Dublin Strategic Flood Risk Assessment, a site-specific Flood Risk Assessment to an appropriate level of detail, addressing all potential sources of flood risk, is required, demonstrating compliance with the Flood Risk Management Guidelines or any updated version of these guidelines and paying particular attention to residual flood risks and any proposed site specific flood management measures. The Flood Risk Assessment shall be prepared by an appropriately qualified Chartered Engineer or equivalent, in accordance with the Flood Risk Management Guidelines. Detailed flood risk assessments should be cognisant of possible pluvial flood risk and appropriate drainage proposals should be implemented to reduce the risk of pluvial flooding. Proposals for minor development to existing buildings in areas of flood risk (e.g. extensions or change of use) should include a flood risk assessment of appropriate detail.

# APPENDIX VI

## FIGURES

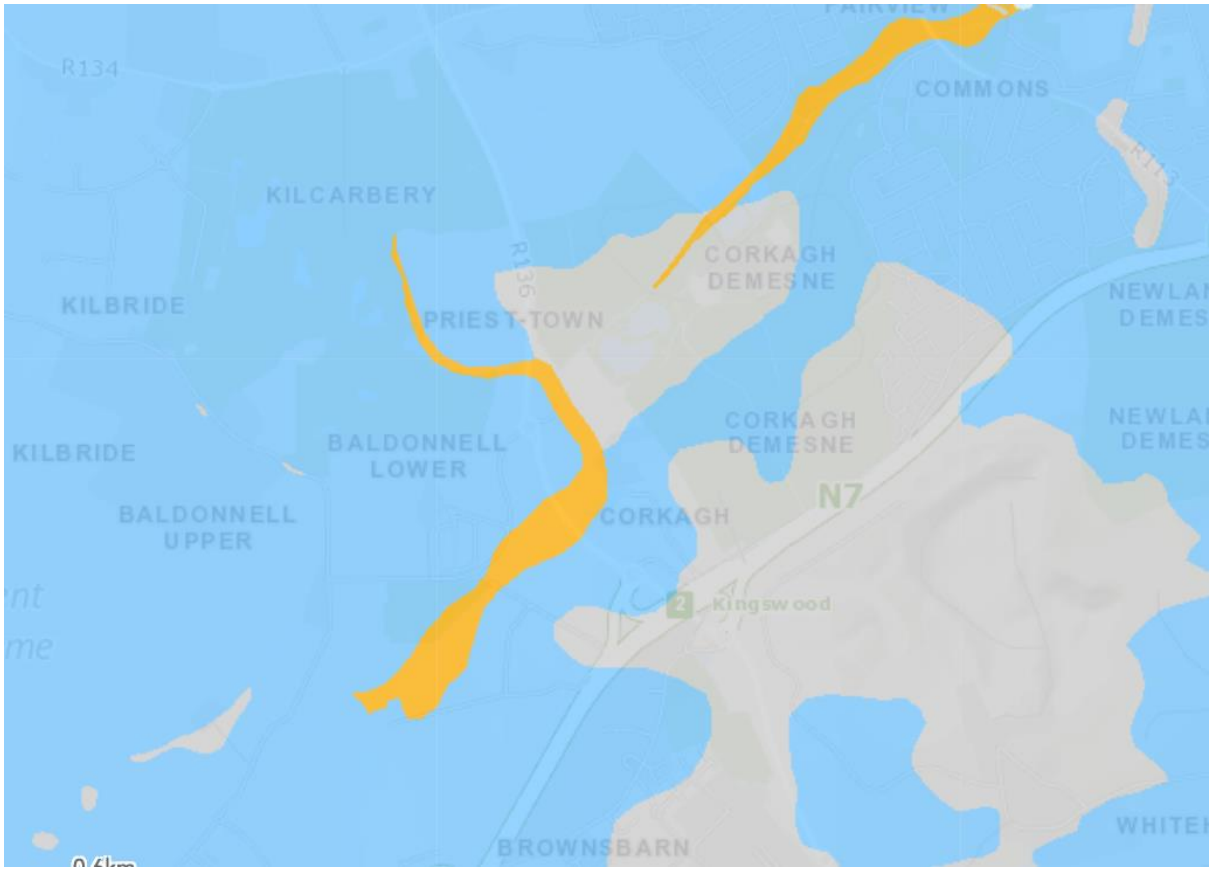


***Figure 1*** Soils Map (GSI, accessed February 2020)

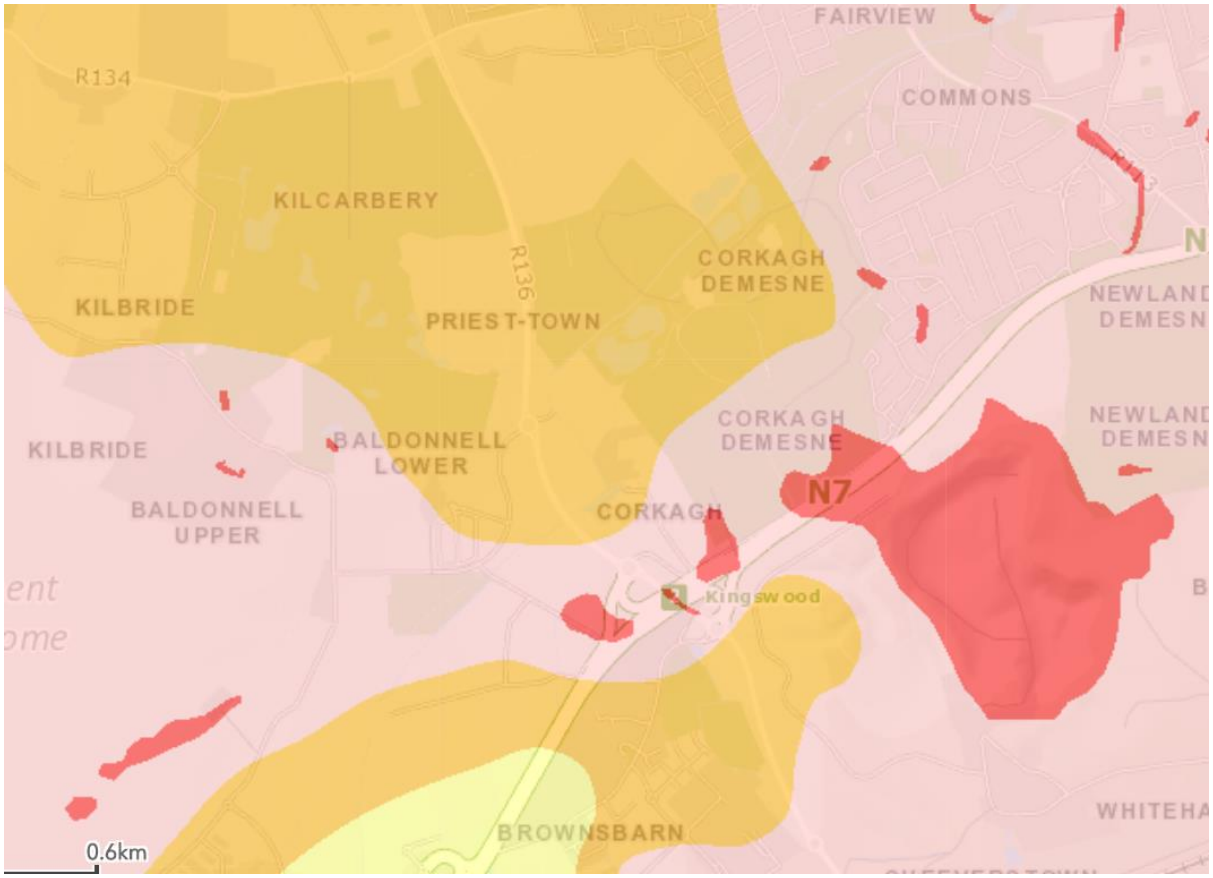


***Figure 2*** Vulnerability Map (GSI, accessed February 2019)

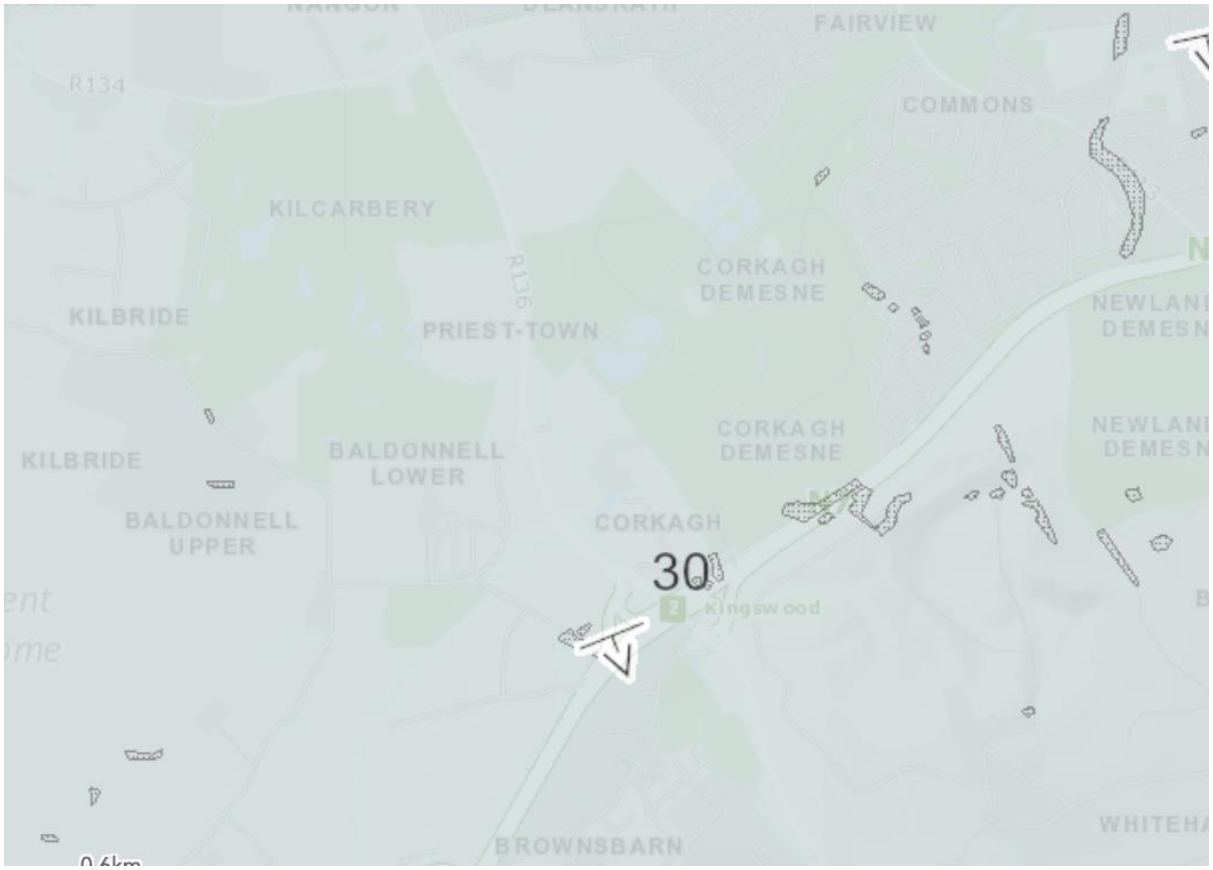


***Figure*** 3 Bedrock Geology Map (GSI, accessed February 2019)