

## THE CAMAC

The Camac rises at Mt. Seskin, south of the N81 Blessington Road, near Brittas, on the Dublin Wicklow border. Two thirds of its course flows through SDCC and one third through DCC local authority areas of responsibility. It has a length of 24 Km and a catchment of 59 Sq Km. There are 11 tributaries, 7 above Clondalkin Park and 4 downstream. The fall of the river is 330m from Mt. Seskin to the Liffey at Heuston Station.

The upland, steepest, section of the Camac begins south of the N7 Naas Rd., through the secluded, environmentally important gem of the post glacial valley , the Slade of Saggart. From Corkagh downstream its gradient lessens dramatically and continues similarly on its course to the Liffey. Below Clondalkin the Camac becomes heavily urbanised, canalised and culverted. Due to private ownership and lack of space, flood alleviation, east of the M50,

becomes extremely difficult and expensive. The second, geologically important , post glacial valley on the Camac is the Lansdowne Valley, formed 10,000 years ago, stretching from Drimnagh and Bluebell through Inchicore .

From the 18<sup>th</sup> to the 20th centuries, mills dramatically altered the course and structure of the river at Saggart, Kilmatead, Corkagh and Clondalkin. The biggest negative consequence has been the numerous large weirs, artificial channels and barriers constructed. This has led to major silting at these sites. When the mills were operational, employees maintained them silt free, to ensure sufficient water capacity for the mills. Though all the mills are gone, the weirs, artificial channels and barriers remain. We are now dealing with 200 years lack of maintenance.



Corkagh Park has 6 ponds, some have sluices. This allows some stormwater management. The Fishery lakes were considered unusable for flood attenuation as the ponds were filled to capacity for the fish stocks. This situation no longer pertains. There is a facility for 13,500 cubic metres of stormwater in Corkagh Park ponds, as they are currently configured. In the 2000 flood relief plan it was intended to have 55,000 cubic metres storm attenuation capacity.

In 1976 Clondalkin Anglers Assoc. Received permission to restore the Kilmatead Gunpowder Mill Pond. We restored this pond, adding several thousand cubic metres of flood capacity.

Clondalkin : The 4 ponds in Clondalkin Park, desilted, have a capacity of 13,000 cubic metres. In combination with the 6 Corkagh ponds and the Brittas Overflow Pond they will slow the flow sufficiently to prevent downstream urbanised flooding. The Mill Turbine and Filter Ponds are heavily silted. The right bank is entirely within Moyle Park College. The silt removed previously was assimilated on the bank of the Moyle Park Land. This was part of the agreement with the Marist Brothers. This bank stretches from Tower Road to St. Johns Wood housing estate. Desilted the ponds would give an additional 9,000 cubic metres of water storage capacity for flood alleviation. Biodegradation of the silt would occur rapidly through the influence of temperature, water, oxidation, uv light, microbes and bacteria, as in composting. The texture of silt at surface level will speed these processes. The bank which is sloped is unused.

The overflow Brittas Pond has enormous potential as a floodwater detention pond for the Camac. It is currently an empty, marshy, wetland area with a functioning sluice. The Camac flows through the overflow pond. It is not visible as it is totally overgrown by wild watercress.

The R113 Fonthill Road Bridge, despite the good flood relief work carried out in 2000, under extreme storm conditions, may still pose a flood risk.

If a similar or greater volume of floodwater occurs as happened in 1993, adjoining housing may suffer flooding. Simply stated, the bridge arches are too low.

The creation of a further limited wetland area upstream of the Fonthill bridge would help to dissipate floodwater pressure to the bridge and road. See: A) : attached 2000 flood report.

A DETENTION POND temporarily stores floodwater.

A good example is the Wetland Pond in Corkagh Park. Floodwater can be held back and released slowly as the flood subsides. By raising or lowering a sluice gate at entry and exit points the flow can be controlled, particularly, during a flood event



Brittas Overflow Detention Pond sluice 4 metres

A RETENTION POND stores water permanently.

This was essential to the mills on the Camac up to the last century, particularly as the volumes decreased in Summer. The unused water storage legacy can now be adapted to flood relief. The Fishery Ponds at Corkagh are an example. They have sluices but are being used as Retention ponds. There are no mills on the Camac, these ponds are now essential to flood prevention and non-invasive restoration of the aquatic environment.

See : Att: B) : Approximate capacities of ponds : Clondalkin – Corkagh – Brittas

**BRITTAS:** The Brittas overflow pond provides a limit to downstream water volumes. This will ensure it can act, automatically, as a detention pond whenever a flood event occurs. Usage of merely 10% of overflow capacity will hold and slowly release 20,000 cubic metres of floodwater. 40 years ago the overflow pond was constantly partially full.

Today the water flowing through this river basin is so low as not to be visible from the banks. This river basin is 2 to 3 metres below the level of the N81 Blessington Road. It stretches east from the Brittas Community Hall opposite the Blue Gardenia to Crooksling above the Slade of Saggart. This entire River Basin must be protected from development.

From the main Brittas Pond a tributary of the Lisheen flows from the base of this pond west to the Liffey and is now lost to the Camac. At Aughafarrell a former tributary of the Camac has been diverted back to the Liffey, following the sale and development of Swiftbrook in Saggart. These two events have cost the Camac 15 % of it's volume.

#### Citywest

Drainage and flood attenuation here is totally inadequate. Industrial building, housing estates and apartment building is continuing, further encroaching to the banks of the Camac tributaries. Retrofitting for flood relief and flood attenuation is essential.

Citywest is on a plateau stretching north-south and rising 30 metres in elevation from the N7 Naas Road to the N81 Blessington Road. The uplands of Mt. Seskin and Knockannavea drop steeply to Citywest. The main tributaries of the Camac flow through Citywest. See:Att: C)



Citywest Industrial Unit encroaching 4 metres from Camac tributary.

The Local Authorities (Works) Act 1949 Sections 4 & 5, gives local authorities extensive powers to engage in flood relief; to enter and execute essential flood relief works on private lands. Minister Hugh Coveney introduced the, equally effective, Arterial Drainage 1995 (Amendment) Act which allows essential flood relief in specific areas.

The RBM-DOGGS Flood Simulation Model, used to determine the Camac catchment requirement, post 1993 Clondalkin flooding, as 55,000 cubic metres floodwater storage.

Of this only 13,500 cubic metres has been provided.

Dividing the flood attenuation between 3 separate areas in the upper half of the Camac spreads the burden effectively and evenly to slow the flow. There are 12 ponds completely within rural and parkland settings with a combined water capacity of 310,000 cubic metres.

A model based on the above will capture and release floodwater **Slowing the Flow**

RAINFALL: 28hrs - PEAK : 5hrs - SLOW ABATEMENT : 39hrs

## Meteorology

We have seen the devastating flooding in Germany and Belgium on the 14<sup>th</sup> and 15<sup>th</sup> July '21. The new IPCC report predicts similar events : 250 dead : 750 injured : €10b cost This was normal meteorology. High pressure in eastern Europe, High pressure in the Atlantic and a blocking Low over western Europe. Ireland experiences blocked low pressure with heavy rainfall. We were fortunate that this low pressure skirted south through the English channel. Citywest is vulnerable due to its elevated position and topography. See:C) Att. Elevation Data

## Water Quality

In 2018 and 2019 water quality analysis at Clondalkin and upstream yielded moderate results. On 01/07/2021 sampling on the Kingswood / Fortunestown Tributary yielded the following : Ephemeroptera : 0 Plecoptera : 0 Trichoptera : 4 . Slime mould extensive. Result : Bad



Slime mould also visible on riverbed Kingswood Tributary of Camac 01/07/2021

On 17/07/2021 we sampled Baldonnell Upper / Corbally and the Baldonnell Little / Crooksling Tributaries and found both to be Poor Quality, with few mayfly, stonefly and caddisfly.

Without this ecology the river will rapidly deteriorate. The findings are, the water quality of the Camac is deteriorating at an alarming rate. See: Att: D)

The majority of the pollution is from culverts, inadequate stormwater management, lack of riparian buffer corridors and total absence of sustainable drainage systems (SUDS)



Pollution from Camac culvert below Cruidin Clondalkin Park July 2021

## Desilting

Permission has been granted by The Marist Brothers Moyle Park College to desilt the Mill Turbine and Filter Ponds and spread the silt on their bank which borders both of these ponds. Deposited at surface level and of small granular particles it will degrade rapidly.

Additionally, uv light, temperature, oxygenation, frequent rainfall along with microbial and bacteriological biodeterioration will speed the process. See: Chapter 7 SDCC Assessment.

## Building Regulations

Independent certification of building regulations is still unresolved.

What hope is there for the tributary of your river flowing through the building site.

The enclosed photos give the answer.

## Recommendations

- 1 Employ qualified personnel to certify (sign-off) compliance with the Water Framework Directive and River Basin Management Directive for the Camac River Catchment to include :
- 2 All outflows from developments to the Camac RC
- 3 Riparian buffer zones.
- 4 Adequate attenuation ponds.
- 5 Retrofitting existing facilities to acceptable level.
- 6 Redirecting all misconnected properties to the foul sewerage system.
- 7 Retrofit Citywest.
- 8 Refuse future development on the Camac River Basin between Brittas

## Reasons for proposing use of Camac upstream ponds for flood alleviation

1. The downstream problems are culverting, urbanisation, lack of available space, high cost and extremely difficult access.
2. Ten of the ponds, upstream from Clondalkin, are located on land in public ownership.
3. Time saved negotiating with landowners
4. Huge expense saved, not having to acquire land.
5. Large savings in using existing Local and Water Authority resources.
6. Large savings using existing physical resources, e.g: sluices, weirs etc.
7. Non-invasive, environmentally sensitive solution to slow the flow.
8. Training flood oversight persons. ERT, currently does not exist on the Camac.
9. Visually and physically, no environmental impact. Use what exists.
10. To paraphrase Dr. Martin O' Grady, Before you work on issues downstream, deal with the problems upstream. In this case available massive floodwater storage capacity.