



**Environmentr & Climate Action Section,
Tipperary County Council,
Civic Offices,
Nenagh,
County Tipperary.**

Part 8: Fethard Lawn Cemetery Burial Ground: Planning Engineering Report:

1.0 Introduction

Tipperary County Council is seeking to develop a new burial ground in Fethard, Clonmel, Co. Tipperary to both meet ever growing demand and to address limited space availability in the surrounding area. The proposed site is currently dedicated to agricultural use and remains in an undeveloped state.

For planning purposes, the proposed burial ground has been laid out and configured on plan in the form of a 'Lawn Cemetery'. While it is intended at this stage that the whole of the Cemetery is designated as a 'Lawn Cemetery' nevertheless, depending on future demand and community agreement, it may be necessary in the future to slightly modify the layout configuration so as to take into account for variations in future demand. For example, it may be the case that only a part section of the Cemetery is designated as a 'Lawn' cemetery with some sections being designated as a traditional type cemetery. It may also prove the case that some portion/section of the Cemetery will need to be allocated for the provision of oversized plots, etc. However, it should be noted that in all scenarios, it is envisaged that the fundamental layout as portrayed in this planning proposal will not alter in the future, to any significant degree.

The proposed burial ground comprises of a total of **997** No grave plots (2-burials per plot = 1994 No burials) with an expected initial burial rate of approx 16 burials per year (projected to increase to 18.5 average burials/yr over a 100yr span). Such a burial rate suggests that the life of the Cemetery will extend over $1994/18.5 = 108$ yrs (at least 3 generations) with respect to corporeal burials only.

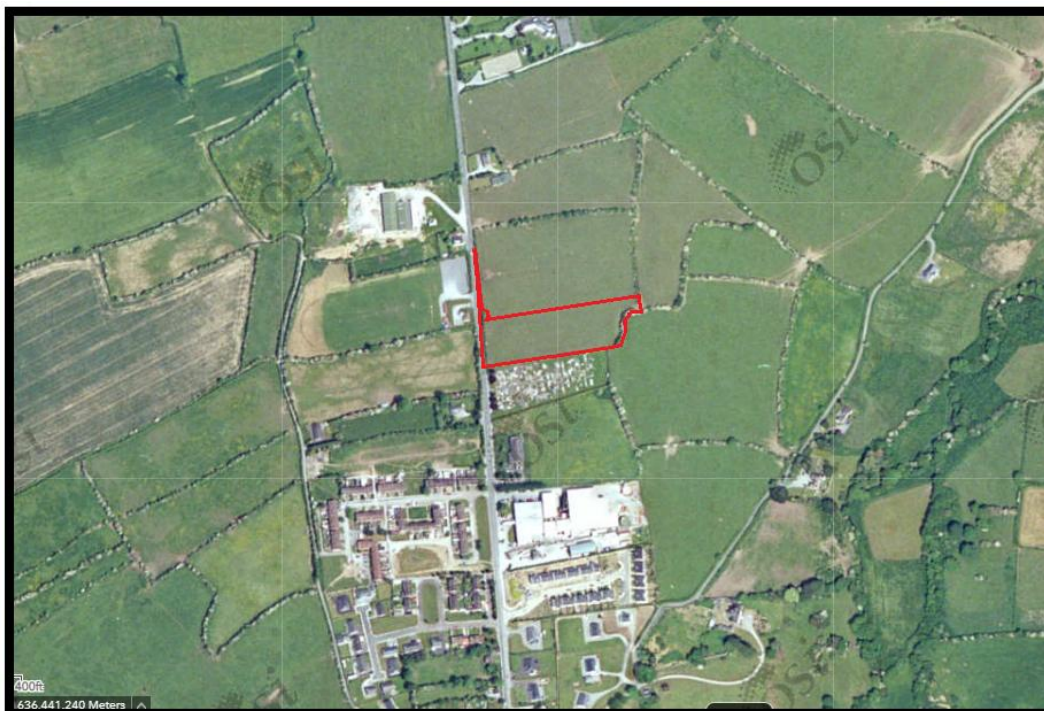
With regard to interment of cremated remains, 4 No Columbarium Walls will be provided that will accommodate approx 200 niches for Urn placement. In addition, it will also be possible to utilise the burial plots themselves for Urn placement (4 No per plot; 1 No Urn per cremated body) on the basis that the urns/ ashes will be buried in the grave plots in accordance with Council's policy on inurnment of cremated remains and buried in grave plots at a depth below ground level not exceeding 1000mm. No scattering of ashes either in/ on the grave plot or scattering within the confines of the burial ground as a whole, will be permitted.

Taking account of the above data and apart from the 1994 No corporeal interments allowed for, there is also potential capacity for further burials (inurnments) of approx 3988 No Urn plots (4 per grave plot) & 200 No niche spaces (Columbarium Walls) amounting to a total of 4188 No Urn/ ashes placements.

1.1 Site Location & Land Use

The proposed development site is located along the Regional Rd (R689) (known as the Killenaule Rd) leading out of Fethard town and covers an area of approximately one hectare. The site is bounded by agricultural lands to the north and east and adjoins Calvary Burial Ground to the south. Calvary Burial Ground is owned and managed (Burial Ground Committee) by the **RC Church of the Holy Trinity** (situated on Main St., Fethard). The site is currently agricultural grassland surrounded with boundary hedgerows on the north, east and road frontage. The southern boundary i.e. between Calvary and the site, consists of a concrete Post & Wire fence. Access to the public road is currently via a field gate

located adjacent to the Calvary Burial Ground. The site falls towards the public road, sloping from east to west (1 in 9 slope approx) with levels ranging from 76.25m at the front of the site to 80.5m AoD at the rear of the site.



2.0 Proposed Cemetery Layout

The Cemetery entrance features the main burial ground access gates including a special-needs wheelchair access gate (self closing). Past the main gates lies the Cemetery 33 space car-park which includes 3 Disabled parking spaces. Entrance into the Lawn Cemetery portion of the burial ground is restricted by a 1.2m high masonry block wall and limited by passage through an entrance controlled by removable bollards (lockable). It is envisaged that access to the lawn Cemetery will be limited to vehicles belonging to Undertakers and the immediate family of the bereaved on the day of funerals. Access to maintenance staff, monumental sculptors etc will be subject to prior Caretaker agreement. Pedestrian traffic will have access at all times subject to established opening hours.

The traffic control system in the Lawn Cemetery will be via a one-way 3m wide circulatory road system that has been designed to safely accommodate long wheelbase hearses and maintenance vehicles. The road surfacing will be of flexible material e.g. dense bitumen macadam or similar type approved, laid to fall to inner kerb/ filter drain.

Each grave plot will be accessible via 1.8m wide non-slip footpaths (note: 1.5m width can accommodate a wheelchair user and walking companion alongside). Surfacing type will be to Irish Wheelchair Association consultation and agreement (*IWA: Best Practice Access Guidelines 2020*). The 1.8m footpath width will also safely accommodate the use of a mini-digger to facilitate grave plot excavations.

3.0 Nature and extent of proposed development

- The construction of a multi-denominational Cemetery which shall be enclosed by masonry boundary walls on all sides and include the following: Main (front) Gate & Disability Access Gate; Car park to the front; flexible material cemetery access roads; Access paths to Irish Wheelchair Association Guidelines; Central Reflection Area with seating & planting; Columbarium Walls; Utility Shed & WC;
- The proposed development (total of **997** grave plots; 2-burials per plot) shall be constructed over 3 Phases: **Ph.1-** 522 Plots; **Ph.2-** 435 Plots; **Ph.3-** 40 Plots.

Phase 1:

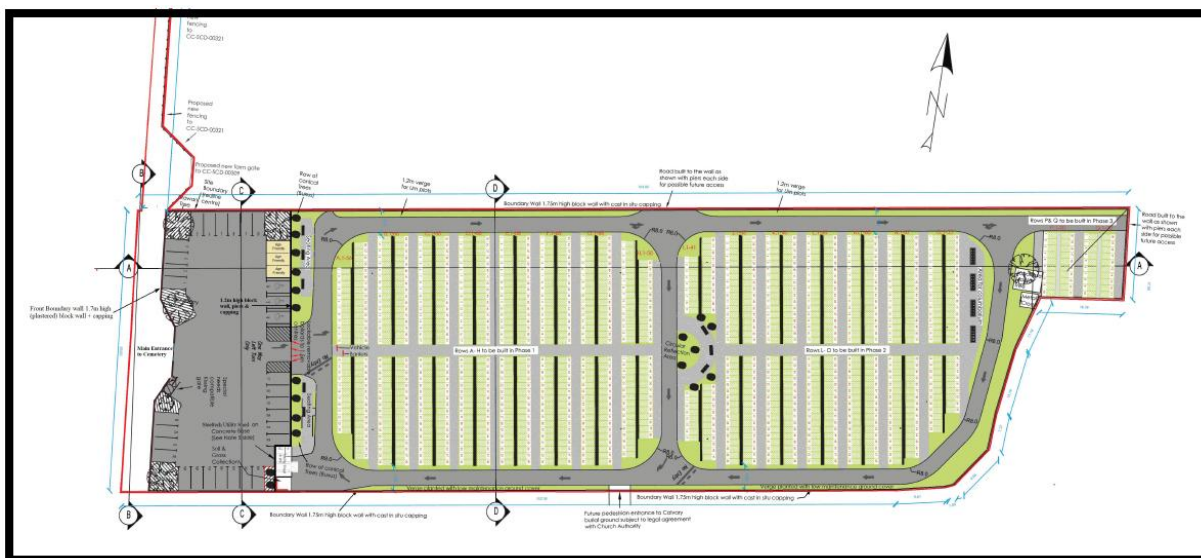
Construction of:- Cemetery Boundary Walls & Gates; provision of 33 No space Cemetery car-park inclusive of 3 Disabled parking spaces & 3 'Age Friendly' spaces to front of burial plot Sections; provision: 522 grave plots; access roads & paths; headstone foundation beams; Central Reflection Area; Provision of 'Steeltech' Utility Shed & WC; Waste Soil/Grass Collection Area;

Phase 2 & 3:

Provision of: 435 No plots (Ph.2) and 40 No plots (Ph.3) Sections; 4 No Columbarium Walls; associated infrastructure; All to be constructed on a 'as the need arises' basis.

Associated Site Works shall consist of:

- Removal of 88.5m of existing hedgerow fronting adjoining agricultural lands to the north of the Cemetery and replacing with TII: CC-SCO-00321 (Timber Post & Tension Mesh Fencing) as per 'Farm Entrance & Hedge-Removal Agreement 19.08.2022' between Council and Landowner in order to facilitate sightline requirements.
- Provision of landscaping works & seating to burial ground and associated areas.
- Provision of drainage facilities: surface water & foul sewage, and water supply connection.
- Installation of Cemetery public lighting scheme extended over all 3 phases of the proposed development i.e. installed on an 'as the need arises' basis.



4.0 Hydrogeological Assessment

A hydrogeological assessment of the proposed burial ground was commissioned by the Environment Section of the Council so as to assess the use of then site as a potential burial ground and that it was appropriately located and would not pose a risk to sensitive receptors such as human health, groundwater and surface water bodies and would conform with best practice and the requirements of the Water Framework Directive (WFD) including the Groundwater (2010) and Surface Water (2009) Regulations.

An initial Tier 1 and subsequently, a Tier 2 intrusive Hydrogeological Assessment investigation was carried out by *Hidrigeolaíocht Uí Chonaire Teoranta* on behalf of the Council; refer to 'Fethard Hydrology Report Rev A.pdf' for full details.

Conclusion:

One of the main conclusions of the report, states as follows:

“Given the outcome of the quantitative risk assessment, the potential risk associated with double burials at the proposed burial ground site is considered to be low. As such, in line with a Tier 2 assessment under the UK guidance (EA, 2004); it is considered that the proposed development should be acceptable from a hydrogeological perspective”.

5.0 Foul Water Drainage

The site is currently a greenfield site and so there is no existing foul water drainage network available on the site.

As an interim measure it is proposed to connect the Utility Shed & WC to an on-site min. 6cu.m wastewater, pre-cast, concrete holding tank complete with an audible and visual alarm system. The reason for this decision is that the sanitary facilities are only intended for the use of the appointed Cemetery Caretaker and/or Burial Ground Committee and for occasional use by others such as HSE personnel with regard to the carrying out of exhumations and, as such, it is expected that wastewater loads will be of a very low order e.g. circa 120L/wk i.e. based on Caretaker's 4 No uses of w.c. per avg

10hr working week = 4 uses x 10L/use plus ditto for 2 No BG Committee members). Such a loading is expected to continue over at least the early years of the Cemetery operation. On this basis, a 6cu.m holding tank would require de-sludging approx once per year. After a period when the Cemetery has become more established and maintenance duties have become more onerous; hence increased wastewater loadings, the Council can dispense with the holding tank system and avail of the option to discharge wastewater directly to the existing public sewer (where the current nearest connection point is located on the near side of the public road, approx 150m towards Fethard Town Centre).

Given the intermittent and low level of wastewater expected to be generated at the Cemetery and combined with the long distance to the public sewer suggests that the more economic and environmentally sustainable option in this particular case in order to provide basic sanitary services (H&S), is to use a wastewater holding tank system, at least over the short-term period e.g. 5 to 10yrs, after which time it is more than likely that either the wastewater loading (estimated from the water supply meter records) will have increased to such extent as would reasonably justify the cost of connection to the existing (but currently remote) public sewer or, by that time the existing sewer may have been extended as far as the Cemetery. In any event, as part of the proposed development works it is proposed to lay a 110mm diam upvc sewer pipe from the Utility building to the public footpath so as to facilitate future connection.

All wastewater infrastructure will be constructed in accordance with Irish Water (Uisce Eireann): *Code of Practice for Wastewater Infrastructure & Wastewater Infrastructure Standard Details*.

6.0 Surface Water Drainage

6.1 Existing Surface Water Drainage

The site is currently an undeveloped, greenfield site and there is no existing surface water drainage network present on the site. Currently, rainwater falling on the site infiltrates down through the soil and subsoil and on down through the fractured limestone (karst) to the underlying groundwater table. Post development, there is increased potential for a portion of the rainwater to run-off the site and collect at the lower levels i.e. car-park area, and thus, tend to flood that area unless an appropriate type drainage system is put in place to intercept such run-off and discharge the excess to a storm drain/ infiltration chamber.

6.2 Proposed Surface Water Drainage

It is proposed that surface water runoff from the Utility Shed roof, Cemetery access roads, car parking area, seating areas, etc will be collected by a [gravity] shallow filter drain network combined with gully traps/ eco-drain before discharging surface water to an existing public stormwater (piped) drain running along the footpath fronting the Calvary burial ground. All proposed road gullies & manholes that are to be constructed will have silt sumps incorporated.

It should be noted that apart from the function of shallow filter drains removing surface water from roads etc, they will also serve to reduce the rainwater recharge element from the underlying aquifer [Regional - Karst (Diffuse) (Rkd)]; thus reducing pollution potential to this major aquifer and, also serving to reduce potential for perching of groundwater as well as serving to ensure a more 'dryer' burial ground in which to conduct interments.

A Class 1, By-passable petrol/oil interceptor will also be provided to minimise pollutants from macadamed road and car park areas from entering the existing sw drain. As the proposed development will result in an increase in the impermeable area, it is proposed to limit surface **water** run-off to greenfield run-off rates. This is to be achieved through use of an attenuation tank (Stormtech or other approved) and a 'Hydrobrake' device to limit flows from the newly constructed areas before discharging to the surface water drain.

In relation to obtaining design calculations (SuDS) and obtaining site test results (BRE 365), the Environment Section has engaged the services of Consultant Engineer (PJ Brett & Assoc) and we are currently awaiting results/Report.

7.0 Water Supply

7.1 Existing Watermain

As the site is currently a greenfield site, there is no existing watermain on the site. There is however, an existing public main (125mm diam HDPE SDR11) located on the far side of the road to the proposed Cemetery.

7.2 Proposed Water Supply Connection

To reduce water demand with the consequent benefit of reducing the foul discharge from the development, water conservation measures will be incorporated in the sanitary facility e.g. dual flush toilets, aerator type push taps. An in-line water meter will be fitted to the proposed water distribution feed (25mm diam) to the Utility Shed to record all water usage and identify anomalies such as leakage (Note: readings taken over time will also help establish consumption rates the corollary of which will be estimated wastewater loadings).

The water distribution system and constructed infrastructure will conform to Irish Water (Uisce Eireann): *Code of Practice for Water Infrastructure & Water Infrastructure Standard Details*.

8.0 Public Lighting

The public lighting network currently extends past the proposed Cemetery site and is located on the far side of the road (R689) to the Cemetery front boundary. As the provision of public road lighting falls within the remit of the MD, it is planned to hold discussions and come to an agreement with the MD as to proposed ducting requirements that could be installed as part of the Cemetery development so as to avoid re-excavation of completed works at a later date.

In relation to the proposed Cemetery development, lighting will be provided on the circulatory cemetery access road, car park and Central Reflection Area and will be set on a winter and summer hours basis. Energy Efficient LED lights will be used with photo cells. The public lighting will be designed to ensure adequate lighting levels will be provided where necessary and in conformity with TCC Public Lighting Policy 2018. It is intended that the public lights within the Cemetery grounds will only be switched on in the evenings and will be switched off at night when the Cemetery is closed.

It is proposed that the Cemetery lighting scheme will be implemented on a phased basis i.e. Phase 1: ducting network installed; Phase 2 & 3: ducting network installed. It is further proposed that 5m lighting columns & luminaires will be erected over all 3 phases on an 'as the need arises' basis (refer to drawing: 1002-01 (Rev 5) *Drainage & Services.pdf*).