

1 Introduction

This Design and Access Statement supports a Full Planning Application for the installation of a screened LPG gas tank sited within the churchyard of The Church of the Holy Martyrs, Mathry. The tank is needed to provide fuel for a new heating installation that forms part of a major repair/conservation project for this historic church. The church is Listed Grade II; the church and its churchyard (a burial ground) lie within the Mathry Conservation Area.

With the support of the Diocesan Advisory Committee (DAC) a 'Faculty'¹ has been obtained from the Chancellor of the Diocese of St. David for the conservation and alteration work needed to install the heating system, including the gas tank. However, following a Pre-Application Enquiry, the Local Authority has determined that a separate Full Planning Application is also needed².



Photo 1 Mathry church from the West, viewed from close to the entrance gate.

¹ The Faculty represents the equivalent of Listed Building Consent (LBC) under the Ecclesiastical Exemption Order 1994 (Wales). It involves consultation with the same statutory consultees as LBC, and also scrutiny by the Diocesan Advisory Committee (DAC).

² Emailed response from Charlotte Greves 06.10.15.

2 Site Location

The proposal is to site the new LF 3 gas tank in an unused portion of the churchyard/ burial ground of Mathry Church, in a position where it will be partially screened by trees, but where a re-fuelling tanker can be parked (in a safe manner) close enough to allow any occasional refuelling needed, to be achieved in a practical way.

The church and churchyard sit at the centre of the community of Mathry, and its Conservation Area. The churchyard is designated on the Adopted LDP inset map of Mathry as Amenity Space. While not public land, the churchyard is accessible at all times: it is accepted that it affords a landscaped, green area in the centre of the village that augments the smaller area of public open space to the South of the church, and which might be considered the 'village green'. This position no doubt reflects much history: it is for example, still within living memory, that a village hiring fair and market used to occupy all of the road space and green space around, or adjacent to, the churchyard.

Close by (marked by an antique script 'M' on the plan opposite) are two Early Christian stones set into the exterior of the churchyard wall, whose setting and safety must not be compromised. A rectangular protection zone is shown on Cadw's records for the monument (see more detailed plan on next page).



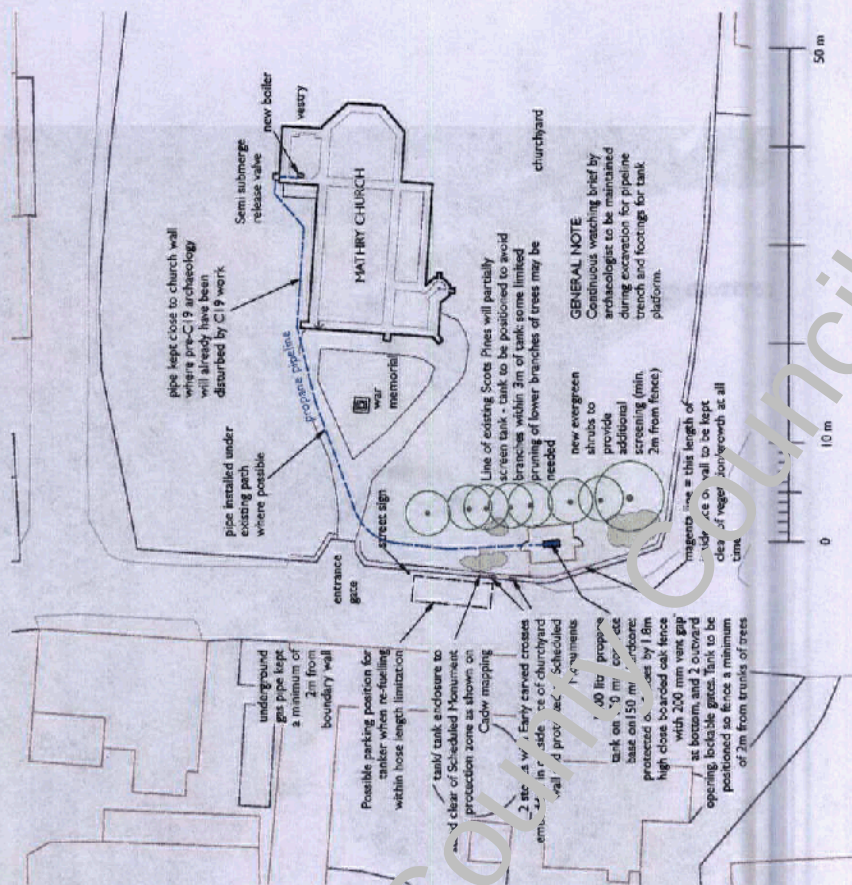
3 Character and Significance of site

The churchyard is relatively large (c. 42 Ha), and sits in the centre of Mathry village, a 'service village' in the LDP. Mathry lies in a very rural part of Pembrokeshire. The churchyard probably has an ancient origin (see Archaeologist's account in Appendix 1), its unusual rectangular form of some significance. It is surrounded on all sides by a stone wall that runs at head height on its V side. The churchyard contains burials, and is mostly grassed, although some areas towards the E side are uncut and overgrown with brambles and bracken. There are a few trees along the W boundary, including a line of Scots Pines spaced at fairly regular intervals. Most of the trees are large. There are also a few small shrubs. Except in a few places along the W boundary, the churchyard offers little shelter, except in the lee of the church, which is relatively large.

In addition to the churchyard's role as a large component of a Conservation Area, and its statutory significance as the curtilage of a Listed Building (the church), it is also:

- very clearly, the physical centre of the village;
- a key feature which allows visitors to orientate themselves within the village
- the setting for a burial ground still visited by relatives
- the visual focus for the past orientation of some surrounding properties
- an attractive green space to visit, with exceptional views out to the East over a large part of the county, looking over a wide landscape towards the Preseli Hills
- as most churchyards, potentially a valuable natural environment where a low level of human intervention, the absence of the use of chemicals etc. could allow re-wilding and the encouragement of a higher level of biodiversity.

The above must be qualified with the observation that this is a relatively exposed site (the price of having a fine view, and of being close to the coast) that will tend to set a limit on bio-diversity, and also the enjoyment of the churchyard by visitors who at the moment have little shelter when it is wet or windy.





Planning Policy and the Design Approach Adopted

4.1 *Design approach adopted - in brief*

The introduction of under-floor heating in this church now has been occasioned by the need to repair collapsing timber Victorian floors. The ideal heat source for this would have been a sustainable source such as a ground source heat pump, but this is unaffordable at this stage when the parish is to repair the church to bring it back into use as a community resource (it is currently closed for safety reasons). The adoption of a high efficiency gas fired condensing boiler is therefore a middle term solution: it is hoped that at some point in the future within this century a switch can be made to a more sustainable heat source, which will mean that the tank that is the subject of this application might eventually be removed. A first principle in its design, is therefore that it is essentially a reversible intervention.

Given the need for a tank, for pragmatic reasons linked to the major conservation goal of keeping the church in use (the use that it has always been designed for), the aim has then been to limit the visual impact of the tank on the churchyard, while meeting the requirements for its safe installation. Some of these requirements are statutory (e.g. Gas Safety (Installation and Use) Regulations 1998 etc.)

The principle design decisions taken comprise:

- choice of smallest practical tank for size of church (1410 litres, with regular filling triggered by telemetric monitoring of content level)
- siting close to W boundary where stone wall is highest (thus offers more screening), and where the line of trees conceal it to some extent and 'contain' the tank within a sub-space of the churchyard (rather than see it stand out on its own). This also leaves the tank visually very divorced the historic church
- enclosing the tank completely with a secure self-weathering oak fence that hides the tank from view with a screen that should visually blend in to the churchyard increasingly over time. The fenced enclosure will be kept as compact as possible, allowing for the 1.5 m minimum distance required by regulations between tank wall and back of fence. There will need to be bilingual warning notices placed on two faces of the fencing: these are shown in the appendix, but being largely white, should not be too prominent as the oak fencing they are set against silvers with time.
- the required ventilation gap beneath the fence helps 'dematerialise' the fence, making it seem less heavy and permanent, and thus suggests its reversibility.

4.2 Planning policy, and design response

Pembrokeshire County Council's Adopted Local Development Plan (LDP) states under **Policy GN35 - Protection of Open Spaces with Amenity Value:**

"Development which would adversely affect the appearance, character or local amenity value of areas of public or private open space will not normally be permitted. In exceptional circumstances, where the proposal will bring clear and lasting economic benefits to the local community and make a positive contribution to the built environment, development may be permitted where it can be demonstrated that no suitable alternative site is available."

Design response: The relatively small size of the installation in relation to the size of the churchyard, and the use of good quality natural materials (weathered oak) to conceal and secure it, arguably will not impact significantly on the character of the area both on the grounds of *de minimus*, and because of sympathetic and non-assertive detailing.

A positive argument can also be made with respect to the exception this policy envisages: the installation of a good level of heating in the church does 'bring clear social and/or economic benefits to the local community and make a positive contribution to the built environment', with the heating contributing to the long term conservation of the church fabric. No suitable alternative site other than the churchyard is available, as storage within the listed church itself is unacceptable on safety grounds. Alternative fuels (oil, biomass) are either less sustainable, more expensive or more intrusive. Electric heating to the level now proposed would be unaffordable: photo-voltaic panels to mitigate this, installed on the church roof, were rejected earlier by the DAC.

Oil would also require an external tank, although one that arguably might be easier to camouflage: however, an oil boiler would require floor space in the church (the proposed gas boiler is wall mounted) and would be noisier, and could smell. It would be less efficient given the kind of heating cycles likely, and burns less cleanly, so would tend to be less carbon-efficient overall.

Policy GN 35 also notes that *"Space between and around buildings is an essential part of the built environment and often gives a settlement its distinctive character...."*

It is contended that the proposals are not sizeable enough, nor visually dominant enough to change or threaten the 'distinctive character' of the churchyard.

At paragraph 3.48 of the LDP (still under Policy GN35) it states that: *"Proposals for the development of amenity open spaces must demonstrate that the proposed loss of open space/natural features has been minimised. The proposal must make a clear positive social and/or economic contribution to the local area and any development on amenity open space must improve the built environment. The proposals are minimised, and, as described above, they do form part of the positive social and/or economic contribution being made by the current scheme on the church which will not only see it repaired and back in use, but for the first time heated adequately for a wider range of community activities to take place in it, especially in the winter months."*

Policy GN.38 – Protection and Enhancement of the Historic Environment states that: "Development that affects sites and landscapes of architectural or historic interest or archaeological importance, or their setting, will only be permitted where it can be demonstrated that it would protect or enhance their character and integrity. Development that may detrimentally affect the character or integrity of such areas will not be permitted."

Once again, it is contended that the proposal are so close to being *de minimus* that in practice their effect on the historic environment is very limited: it is also reversible (and if all goes to plan will be reversed at some point in the C21 when funding for a more sustainable heat source is available, perhaps as such technology becomes mainstream).

Furthermore, the proposals are part of a project (new heating scheme in the church) which is designed to enhance the character and integrity of the church by [1] provide background heating to the church fabric which should assist in its conservation; [2] help ensure the church's continuing use and viability as an historic building still in its original use; [3] make the church more welcoming and more accessible to the public.

While the tank will be sited within the curtilage of the historic building, it will be far enough away to be visually disconnected from it. The tank is close to the two Early Christian stones³ set into the boundary wall: however, these are on the outside of the wall, although the protection zone on Cadw's maps is on the inside of

³ 7th -9th Century stones from Rhoslanog and Tregidreg farms, both found associated with burial grounds moved to Mathry by the Pembrokeshire Association in 1907. Ref RCAHMMW 1925 VI The County of Pembrokeshire.

the churchyard. The tank enclosure is set out to be outside this zone.

There are other policies and published guidance/policy (e.g. the Welsh Government's 'Planning Policy Wales', and Technical Advice Notes TAN 12 and 22) that might also be commented on, but it is thought in relation to this application, most issues have been discussed above in response to Policy GN 38 of the LDP. One aspect of **Policy GN 1** might be noted:

"Development will be permitted where the following criteria are met:

[GN1-2] It would not result in a significant detrimental impact on local amenity in terms of visual impact, loss of light or privacy, odours, smoke, fumes, dust, air quality or an increase in noise or vibration levels."

The proposal should be barely visible to surrounding properties, and is to be far away to reduce their light (the nearest property is to the west across the road, some 9.5 m from the fence, and some 11 m from the tank). The stone boundary wall of the church lies between the tank and the road. There should be no odour, smoke, fumes, dust, reduction in air quality or vibration: the tank is normally silent in operation. There may be some moderate vehicle pump noise as the tank is filled, but this will be commensurate with other deliveries made from road vehicles, e.g. of heating oil.

5 Community Safety

While components of a well-used, proven and mature technology, fixed external LPG tank installations need to address two main risks identified in the regulations that govern them: exposure to the combustion of nearby buildings, and vandalism/unauthorised access to the tank itself⁴. The design adopted at Mathry church in intended to respond satisfactorily to both.

The Building Regulations (Part J) address the issue of creating sufficient separation from buildings or boundaries⁴; in this instance, the critical criterion will be a minimum of 3m to the boundary, which is the road, which has been achieved. A firewall is not required, although in practice it can be argued that the stone boundary wall will in many respects act as one to give added protection.

The second need is to protect the tank from unauthorised access, or being tampered with, when (as here) not sited in a private garden or controlled-access site. The industry standard solution is a locked metal mesh enclosure, but in visually sensitive situations, the industry and regulatory authority (HSE) allow the use of a timber enclosure, provided it is designed to a strict specification. That recommended by the proposed supplier, Flogas is given in the Appendix, and has been followed. This includes the padlocking of the outward-opening gates that are required at either end of the enclosure. The enclosure is to be constructed of oak, to produce robust and secure protection that, at 1.8 m high, should normally prevent children and all but the

⁴ Approved Document Part J: "5.14 For LPG storage systems of up to 1.1 tonne capacity, comprising one tank standing in the open air, a way of meeting the requirement J6 would be to comply with the relevant recommendations in the UKLPG Code Of Practice 1: Bulk LPG Storage at Fixed Installations Part 1 (2009) and BS 5482-1:2005 ... whilst also adopting the following guidance:

5.15 The LPG tank should be installed outdoors and not within an open pit. The tank should be adequately separated from buildings, the boundary and any fixed sources of ignition to enable safe dispersal in the event of venting or leaks and in the event of fire to reduce the risk of fire spreading. A way of meeting the requirements in normal situations would be to adopt the separation distances in Table 11 and Diagram 43, which also offers advice on reducing the risk of LPG storage fires igniting the building. Drains, gullies and cellar hatches within the separation distances should be protected from gas entry." Table 11 indicates a 3m distance when (as here) a firewall is not used.



Photo 2: View of the churchyard boundary wall looking North, with the two large Scheduled Monument stones, carved with early Christian crosses, set into it. The tank will be positioned between the wall and the trees beyond, just out of the picture to the right of the camera's position.

most determined of adults from climbing in. The boarding will be screwed in place to deter vandalism, and on at least one side, spaced so that it will be possible to see in, so that anyone who did succeed in entering, could be quickly detected. Bilingual warning notices (see Appendix) will be fitted to two opposing faces of the enclosure.

Mathry is a well-interconnected village community, where anything unusual would be noticed. The churchyard is overlooked by a number of properties. The whole churchyard is relatively open, so anyone entering the churchyard is likely to be seen as they move about. The applicant, the Parochial Church Council of Mathry church, with their collective knowledge extending back over many years, do not believe there is any reason why their churchyard should be at any particular risk of vandalism or misuse.

6 Access and movement

The Proposed tank installation should have no significant impact on access to the churchyard by visitors. There are no gravestones in this area, and the tank is sited in an area where the grass is not cut regularly, so there is little evidence of visitors exploring this area. The area taken up by the installation forms only a very small part of the total area of the churchyard.

Working access will be needed occasionally for filling and inspecting the tank. This involves walking across grass on level ground. This traffic (typically one person, sometimes pulling along the gas supply hose) will be infrequent enough to form a very worn path. To pave the travelled section is not seen as being desirable, as it will only serve to emphasise the tank's presence, and encourage visitors to walk towards it.

7 Environmental sustainability; archaeological impact

Although the installation involves the introduction of a small concrete base (the size of the footprint of the tank) and a wider gravel surround, the amount of existing habitat removed from the churchyard will amount to a very small proportion of its area. No trees or bushes will be lost in order to complete the installation. None of the trees within the churchyard are believed to be subject to a Tree Preservation Order.

The timber used will be durable seasoned oak, and no use will be made of timber treatment. The remainder of the installation (gravel, concrete, tank) should create no toxicity or pollution. In the unlikely event of a spillage of LPG, the product will evaporate, leaving little residue.

It is acknowledged that LPG does not represent the most sustainable of heating sources, but it is being proposed here as a medium term transitional installation that hopefully will one day be replaced by a more sustainable heat source. In the meanwhile, the heating installation at Mathry church does contribute to the effort of retaining and conserving the church, a major project that does have significance in terms of environmental sustainability.

It is already a condition of the Diocesan Faculty for the work that an archaeological watching brief be maintained when the base for the gas tank, and the trench for the gas pipe leading from it, are excavated. Both excavations will be shallow: 300 mm for the tank base, 450 mm maximum excavation for the pipe, well above normal burial levels. However, given the possible early origins of the site (see Appendix 9.1), a close watching brief for isolated artefacts will be maintained.



Photo 3 Only the top few inches of the wooden tank enclosure will be visible in this view, set between the wall and the trees. The tank itself would be hidden from view within the timber enclosure

8 Summary

The application proposals are considered appropriate in terms of design, amount, proportionality, and sensitivity to the historic and natural environment.

The tank will be well screened by a rear/erected oak fence that should, in time, blend in reasonably well with the natural and historic setting, and relate well to the colour of the nearby boundary wall. Visual gas safety regulations prevent plants being trained over the fence, sufficient planting around it at a 2 m distance should over time soften its visual impact from within the churchyard.

Very little space will be lost from the churchyard, in relation to the latter's size, and the tank should not impede or interfere with a visitor's enjoyment of the churchyard when walking around it. It will not inhibit any views out over the open country to the South, or be centred in them.

The tank is well separated from nearby properties, from which it will be largely hidden by planting, or by the churchyard wall.

The installation is necessary, if the church is to be heated at this juncture, as it is the only affordable and practical solution in a context where capital and running costs are crucial.

The installation proposed is readily reversible, at some future stage if a more sustainable heat source might become affordable.

9 Appendices

9.1 Archaeological Watching Brief for work in the churchyard of Mathry Church: Written Statement of proposed Investigation.

As part of the project to restore and renovate the Church of the Holy Martyrs, Mathry, it is proposed to install gas fired central heating and site the LPG tank on the west side of the churchyard, excavating a shallow trench along which to lead the pipe to the boiler in the vestry.

The village of Mathry occupies a site of some antiquity. It is a hilltop settlement and where they have survived agricultural change the radial field boundaries probably points to an Iron age origin for its occupation. The square footprint of the churchyard located in the centre of the village, with entrances at the midline of west and south boundaries may also be significant. While, to the south of the churchyard, excavations associated with the installation of public toilets revealed a number of early Christian cist graves. A stone in the church porch dated to the 5th or early 6th century bears the inscription MACUDICCL FILI CATUUCUS in Latin and Ogham, using both Latin and Irish letters for inscription. Two stones, now set into the west wall, were found at the nearby farms of Rhoslanog and Tregidred, both associated with early Christian burials, one set into the south wall may incorporate a further dedication stone. Nearby, the Neolithic and early Bronze age cromlechs at Longhouse, Trawalgar and Pencaer all affirm the existence of a strong prehistoric settlement from the early Holocene times. By the early and later middle ages Mathry was of sufficient importance to have Giraldus Cambrensis as its Prebend and to be granted a market and a hiring fair by Edward III, of which the fair continued into the 20th century.

Given the archaeologically sensitive nature of the site a qualified archaeologist, Anne Eastham FSA will supervise this work.

Every effort will be made to avoid any disturbance of existing graves and where necessary the contractors may be required to divert the pipe line in order to achieve this and, in the event of making such discoveries, detailed records to locate the position of any finds in three dimensions, along with descriptions, drawings and photographs. Portable objects will also be recorded in the same detail and expert assistance may be invoked to help with identification and interpretation, conservation and curation at an agreed venue of cultural objects such as pottery or metal if such are recovered. Post excavation study of any portable finds and organic materials will be undertaken if necessary and provided they are of sufficient importance for sufficient funding to be obtained to carry out the research.

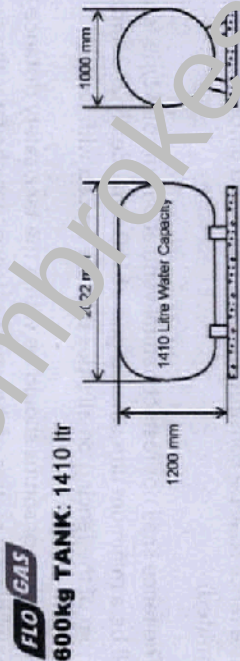
Any finds of human bone may require reports to the police authorities and appropriate arrangements made for reburial or reburial.

A report on the trench excavation will be prepared. It will be presented as part of the church archive and if of sufficient interest will be available to the general public and archaeological bodies.

Anne Eastham – FSA Archaeologist

DESIGN AND ACCESS STATEMENT

9.2 Flogas 1410 litre tank details; example of statutory warning notice



SAFETY DISTANCE		TANK DIMENSIONS			BASE SIZE			VAPOUR RATE
NORMAL	FIREWALL	LENGTH	WIDTH	HEIGHT	LENGTH	WIDTH	DEPTH	BTU/HR²
3m	1.5m	2.02m	1m	1.2m	2m	1m	100mm	327 600

VAPOUR INSTALLATIONS

BASE DETAILS:
Base to be solid, flat & level.
Trenches are not a suitable base.

TRENCH DETAILS:
Min. 450mm to 600mm deep
Min. 150mm to 250mm wide.
Trench to be kept as straight as possible. Bands must be reduced (min. radius 500mm)

VAPOURISATION:
If the energy rating of the equipment exceeds the stated vapourisation rate for the tank, extra tank must be installed.

TYPICAL SUPPLY PRESSURE:
37mbar is the typical supply pressure for vapour installation.

2 m

1 m

NOT TO SCALE



Photo 4 Example of one of the necessary safety notices. Here it is fixed to a mesh enclosure: arguably when fixed to one weathered oak enclosure proposed, it may be less prominent.

9.3 Flogas specification for timber enclosure

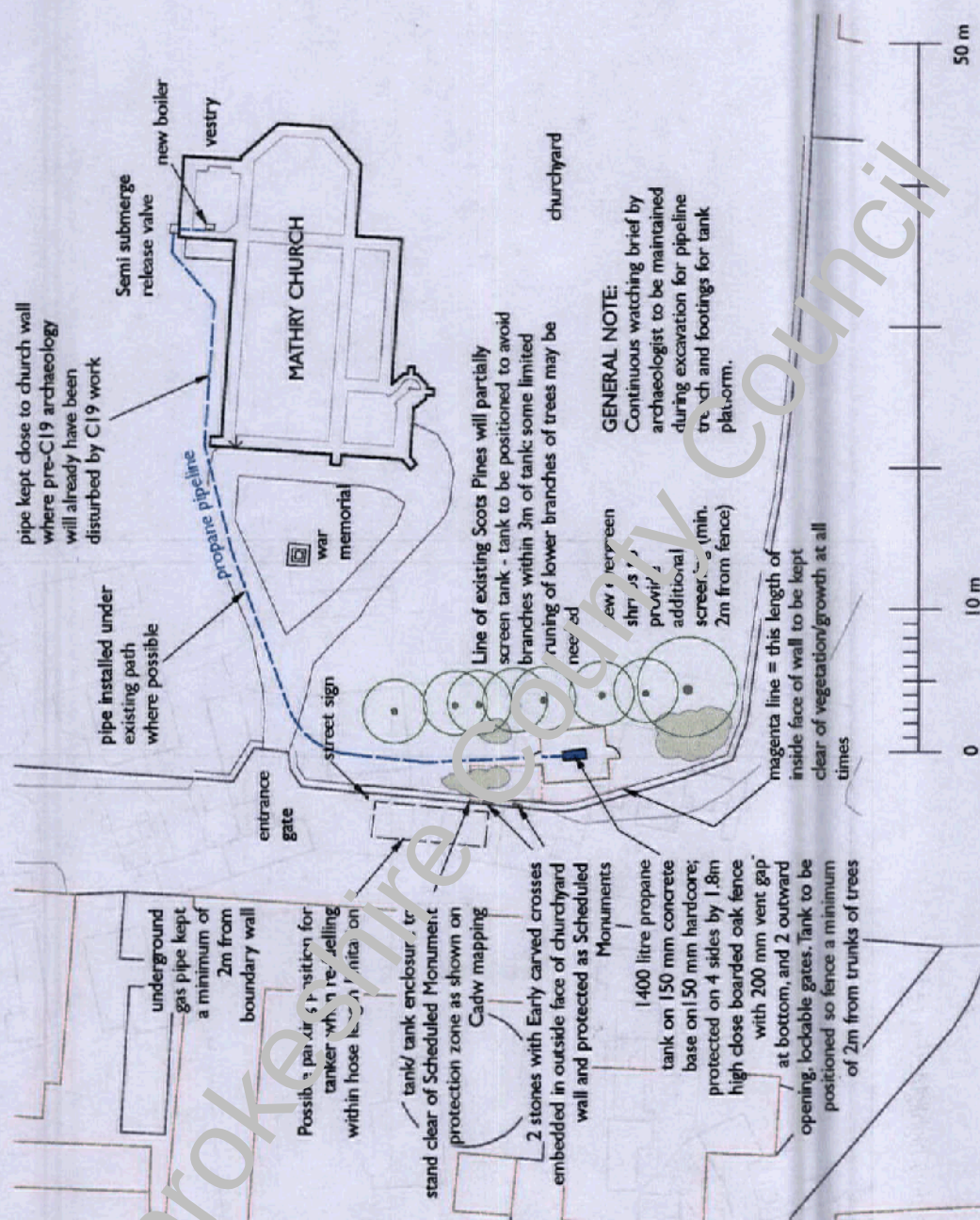
Flogas Procedure for Assessing and Justifying the Use of Wooden LPG Tank Compound Fences

Following consultation with senior HSE officials and taking into account Clause's 1.3.1, 2.3.1.2, 2.3.1.3, 2.3.1.11 and 2.6.1 for UK LPG Code (of Practice 1 Part 1, Flogas will permit the use of wooden tank compound fences for above ground tank installations subject to the following constraints and conditions –

All installation must be considered on an individual basis by senior members of the Flogas Technical Services department.

1. No tank shall be larger than 2.0 tonnes nominal gas capacity.
2. The compound shall house a maximum of 6 tanks.
3. The compound fence shall be sited a minimum distance of 1.5 metres from the tank (in plan) and shall have two outward opening gates (as Code of Practice requirements).
4. The fence shall be constructed from processed timber (bamboo, willow, wattle, etc. are not permitted).
5. The fence shall not restrict natural ventilation – if solid type fencing or panels are used there shall be a minimum unrestricted gap of 150 mm (ideally 200 mm) between the ground and the bottom of the fencing on all sides that are fenced with wood.
6. No bushes or shrubs should be within the tank safety distance (from Code of Practice 1 Part 1) or within 2.0 metres of the wooden fence - whichever is the greatest distance.
7. No other types of combustible material (such as rubbish bins) should be permitted within the tank safety distance (from Code of Practice 1 Part 1) or within 2.0 metres of the wooden fence - whichever is the greatest distance.
8. The distances set out in 7 and 8 above may be reduced by the use of a firewall.

9.4 Site Layout as proposed (1:500)



9.5 1:1250 Location Plan with churchyard boundary highlighted in red

