

# **CORRYS COUNTRYSIDE SERVICES**

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## **Pond at the junction of Millers Lane with Old Kennel Lane and Port Lane. Oliver's Battery. Winchester**

### **THE SITE**

#### **Location**

The pond lies on the NW quadrant of the crossroads made up by Millers Lane & a path in the line of Millers Lane west to east, and Port Lane to Old Kennels Lane south to north. Grid reference SU45252706.

#### **Elevation**

257 feet, 78.2 metres OD.

#### **Dimensions**

The pond is a square 55 feet/ 17 metres per side, giving it a total area of 280 square metres.

The present pond is concrete lined. Though the shape is classic for a mist or dew pond, the internal profile is not of the classic form, and it must be assumed that the pond has been re-skinned on at least one occasion, these re-linings especially thickening the edge of the pond.

It lies within an area of ground 29 metres north to south, 24 metres east to west- 700 square metres. This gives a land area of 420 square metres surrounding the pond.

The pond is about 13 metres from the Millers Lane boundary and about 15 metres from the Lane. It reaches to within 3 metres of the N boundary, 2.5 metres of the E boundary and 5 metres of the W boundary.

The water surface of the pond lies sufficiently below the level of the Lane for water to run through a culvert at road surface level into the pond without bailing up- but no more than 8 to 10". I could anticipate localised flooding of the road if rainfall exceeded the capacity of the pond to allow water to soak away over the edges of the concrete lining.

The edges of the lining remain almost entirely obscured by the build up of soil and detritus.

#### **Profile and depth**

It has proved impossible to profile right across the pond because of the depth of fill that has accumulated. I returned on the 30<sup>th</sup> October 2009 to probe all sides of the pond as far as I could reach in waders. I doubt that there is sufficient depth of water over the fill even get a light boat out.

#### **Water**

The pond remains very slightly lipped at all edges, the water rapidly getting to 10" deep. By about 3 metres out on all sides, the depth is passing 42"- beyond which, no measurements were possible (beyond wader depth and too great a depth of fill to move through).

Were it to continue at this rate of deepening, the pond would be 9.5 feet deep at the centre.

Given the typical design of mist ponds, this would be consistent with the design- 4 slabs forming the base tapering to the centre at a constant slope.

This was a working pond and not a recreational one .

But it seems an impractical working depth unless long experience made it likely the pond could almost dry out on occasion. Unless the lining surface was rough cast, getting at the water at the centre would be difficult.

Assuming a mean depth of 4.5 feet, the pond at the present water level would hold a volume of 356 cubic metres of water.

### ***Fill***

Out to 3 metres, there is only 4" of clear water over the top of the fill. Assuming that there is a slightly greater depth at the centre, I would estimate the mean depth of clear water over the fill is 6" across the entire pond.

This gives a volume of fill within the water column of 316 cubic metres.

From the feel of it when walking through the fill, the top part is very soft, consisting almost entirely of very loosely consolidated leaf litter, more water than solid material. Right out at the edge of the area that could be probed a layer of more solid material was occurring towards the bottom though there was no very marked change indicating distinct layers. Though gas was given off, it was not markedly anoxic or sulphurous. The conditions at the bottom of the pond appear only slightly anaerobic.

I would assume that the more consolidated material has slipped down the slope of the lining to the deepest part of the pond. This would reinforce the supposition that the pond deepens to the centre.

I think that the fill could compress to about 15-18" in a reasonably short time and to 12" over a longer period. Both was water drained from it, and- as it became well ventilated again, as aerobic decomposition broke it down further. As much as 6" of this thickness might already be soil- material washed in from the surrounding landscape through the culverts.

Assuming the fill does consolidate as anticipated, this would yield 79-80 cubic metres of fill were the pond entirely excavated.

This amount is well beyond what could be put on the northern bank to mask subsoil and concrete footings. I think it could be used by landscaping the western side of the pond, building out the ground here.

But this assumes that the material when excavated would compress down quickly. Otherwise it could be difficult just storing it on site- bearing in mind that it would be black and not attractive looking, and would smell for a while until anaerobic gases were released. Other options might have to be considered.

### ***Topography***

The pond lies on the floor of a shallow valley that runs from Sarum Farm just north of the Sarum Road (Roman road), through Pitt to Port Lane, down the line of the Lane to Hursley, the line of Poles Lane through Otterbourne and thence to the Itchen below Brambridge. It is separated by a very narrow col from the headwaters of the Monks Brook west of Hursley.

This valley is presently dry (no permanent or seasonal flow) as far as the south end of Hursley village, although there is evidence of near surface groundwater above this point as far as the pumping station NE of Down Farm (willows, a slight defile as if of an old bourne, though probably representing field drainage to handle excess water).

In the early 19th century, there was permanent water flow from the Shorland farms (now Shawland Farm and Keble Close), and in the early 17<sup>th</sup> century, from about a half mile upstream of this point.

The land rises from 78 metres at the pond to 118 metres a kilometre west above Larkfarm Plantation, and to 90 metres a half kilometre west, both points being cols in higher ridges.

There are minor indents in the western slope of the valley that would gather water from a wide area and pass it through • the pond site, as well as the 2700 metres of valley above the pond. Nearly all the landscaping here is soft, though work to construct the Golf Course has greatly modified the original land surface. The ditch dug down the eastern side of the South Winchester Golf Course and around the corner to parallel Millers Lane intercepts all runoff here, although it is not clear where run-off intercepted by the ditch goes, there being no apparent outlet.

The eastern side of the valley is more uniform. Very little run-off from this side would reach the pond now, being handled by road and residential drainage through Oliver's Battery, which has been built on the slope and summit of the ridge east of Port Lane over the last 80 years, replacing down and farm land.

Closer to the pond, the natural slope of the land has been steepened to the east and north, producing drops of about 8-10 feet to the pond. The most recent development has necessitated new works to stabilise the slope against relaxation and creep- a concrete curtain walls and wire box gabions above.

West of the pond, the ground has been artificially raised into a bank. This bank seems to be the product of two phases of work- an early bank cutting off the redundant end of Enmill Lane and enclosing a portion of Port Lane between Millers Lane and Old Kennels Lane: and a much more recent addition produced by spreading the material dug from the interception ditch around the Golf Course.

South of the pond, the land rises away from the pond to stand higher than the current road surface of Millers Lane, save for the modern vehicular entrance to the pond compound. Since the pond lies in a hollow anyway, it is to be assumed that the land surface surrounding the pond was raised by material dug out to accommodate the pond when it was made, and that this was spread to the south and west as counter-scarping to reinforce the Allretaining the 'downstream' edges of the pond.

Thus there is no original land surface in the locality save in the roads themselves, some distance away in the residential parts of Oliver's Battery, and in the landscape south of the pond.

The land being lowest to the south and the pond lying in a slight hollow as a result of the building up of land around it, storm-water culverts have been let through the south side of the compound. One is now quite deeply buried by the building up of land east of the pond. A soil pipe has been let under developments to the north, emptying into the pond from several feet above it.

#### ***Geology and soils***

Though there are deposits of Low Level Terrace Gravels (formerly Valley Gravels) accumulated on the valley floor of this dry valley below the junction of Port Lane and Millers Lane as far down the valley as opposite Down Farm, geological maps show no other differentiated drift deposits in the valley.

The general north south alignment of the dry valley is altered at Hursley where the valley runs up against Reading Beds. A mix of mottled clays and sands, these collect and conduct surface water better than the chalk and are responsible for the retention of permanent surface streams downstream from this point.

It is to be assumed there is nonetheless a considerable fill of material in the bottom of the valley, regarded as soil and subsoil rather than drift deposits. In a now dry valley of similar size near Bishops Waltham, a 10 foot thickness of material had accumulated in 4-500 years. The depth down to the bourne channel recorded in early documents must be very considerable.

The fill in the Pitt valley will almost certainly have obscured any trace of a bourne channel. Since the land was broken up from downland commencing 200 years ago, there would have been considerable soil movement due to cultivation before the impact of landscaping associated with Oliver's Battery and the Golf Course.

The land is now developed to the north and east, with roads and domestic residences. Gardens to properties are quite large, and the proportion of the landscape under hard surfacing with quick runoff of water is less than in more densely urbanised, though it represents a massive change on the soft landscape that existed when the pond was made.

Water derived from the runoff from hard landscaping has offset the loss of runoff from soft landscaping.

South of the pond, the landscape remains relatively unchanged. In hydrologic terms, this is less significant since water would be running away from the pond and would not contribute to the catchment.

Though the roads have been macadamised, the non-metalled predecessors would have experienced considerable runoff in wet weather because they were churned up by wheeled traffic. Sediment influx to the valley floor and the pond would have been- in all probability- much higher than is now the case.

### ***Views of the pond***

The near edge of the pond is about 20 feet from Millers Lane, and the pond is best viewed through the chainlink fence from this side. The whole of the pond enclosure can be seen, though only at distance, through green plastic coated chainlink fencing. Main access to the compound is on this side.

It can also be viewed from the bank west of the pond, care of an informal path- though only with difficulty. This affords a higher vantage point and a better view of the pond, though from some distance. The pond can not be seen from the golf course when at ground level.

There is no good oversight from north or east, even from the new built properties on that side, as these houses are all sited on the far side of their gardens for structural reasons. The gardens stretch down towards the top of the gabion & concrete footing reinforced bank that drops down about 10 feet to the pond.

Without trying to hide the pond completely by landscaping, the general public would be aware of its existence. Since it is on highway land, and was formerly part of a common highway, it is to be assumed that it was at one time open to general access, even if built for the particular use of Yewhill Farm.

### **Aspect**

The lie of the land is insufficient to shade the pond from receiving sunlight in any season. The highest elevations are on sides that do not influence the light received.

The south and west facing banks ought to warm well in the stronger sunlight received from mid spring to mid autumn. Especially if only the coarse footings are masked with soil and the bulk of the gabion stone facings are left exposed. These would not only warm the atmosphere above the pond under strong sunlight, creating strong local heating, but continue to radiate warmth for some while after strong sunlight levels decrease. This heating effect could be very good for insects attracted to the pond and its environs, although it could also slightly enhance loss of water through direct evaporation from the water surface, and evapotranspiration in plants.

The potential for warming the south and west facing banks is currently countered by the shade cast by trees still standing along the south and west sides. If planted to divert sunlight away from the pond, they could hardly be improved upon. Given that these trees are on the youthful side of maturity, the impact they have in preventing direct sunlight to the pond and its environs will increase with time. Trees already removed have improved direct and indirect lighting to the pond. But a much more significant gain in light (and in reducing leaf litter falling into the pond) will be gained by taking down the remaining sycamore.

### ***Trees***

I count 20 sycamore by individual trunks within the compound- a smaller number of individual trees. There are 2 trees each with 2 stems on the line of the boundary fence with Millers Lane. These are branched only to the Lane side and would naturally fall into Millers Lane or onto the roof of Old Kennels Cottage on the south side of the Lane. Most of the other trees in the compound are more upright or lean towards the pond.

A single young mature sycamore, with a lean to the ESE over the pond, has been retained on the N edge of the pond.

More than a dozen trees of various sizes and species have been felled within the compound, lop and top chipped, trunks logged and stacked to the boundaries. This work has already greatly improved lighting to the pond, as well as reducing the fall of leaf litter.

The fall of leaf litter contributes to shortening the life of the pond through filling in the basin. It also influences water quality. Steps should be taken to reduce direct fall of leaves into the pond, though a balance has to be struck with the need to have shrubs and more suitable trees to enhance the ecological function of the pond.

Most of the cover from the west lies on the golf course, in the angle between the compound and Millers Lane. It is backed by the lower and older shrub trees of the hedge beside Millers Lane. There are two further mature sycamore on the Lane edge in this section, with smaller pole stage sycamore away from the Lane and a mass of seedlings/ saplings beneath. Trees that used to run up the bank west of the current development have been felled.

The older hedgerow trees (field maple, thorns) do not contribute to the problem of shading the pond or the leaf drop into the basin, and should on no account be removed.

Were the trees to the south removed, there would still be some shade from the cottage across the lane, but only at very low sun angles- a very minimal loss of direct sunlight.

The trees along Millers Lane create a zone of still air between the pond and the thatched roof of Old Kennels Cottage holding damp air against the thatched roof, and preventing good drying by direct sunlight or air circulation. These conditions would appear to be shortening the functional life of the thatch on this side of the cottage, even allowing for the fact that, having a north facing aspect, the thatch on this side is least favoured in any case. The trees are compounding poor natural drying by reducing air circulation.

### ***Silt***

Storm-water flows from Millers Lane are culverted to the pond in two places.

An underground soil pipe passes beneath the new development from houses to the north of it, emptying into the pond from part way up the northern bank. I think that little silt would issue from this pipe.

Very considerable amounts of silt would enter the pond through the western culvert off Millers Lane. This handles a large part of the waters that flow down the road surface, carrying material from the verges, for as much as 100 metres up the Lane, which has been running downhill towards the pond for a long distance.

I think a fair amount enters through the eastern culvert, though only the pond end of the culvert can be placed. It is to be assumed that this handles water and material washing down Old Kennels Lane and around the corner into Millers Lane.

Though the pond requires a certain amount of medium above the concrete to protect the concrete and for plants to root into, the layer does not have to be more than a few inches thick.

Both culverts from Millers Lane require silt trap interceptors at the pond end of their culverts. Silt traps are simple watertight boxes set at or slightly below the level of water coming in, into which water pours, entering quickly but leaving slowly. Heavier silt is dropped into the box, decreasing the amount passing to the pond. The silt trap has to be emptied every so often. How often depends on the rate of fill and can not be predicted in advance.

Finer material would be carried in, but the development of marginal plants around the pond could help to trap the finer material towards the pond edge, extending the lifetime of the central basin.

I would assume that the kerb edge drains in Millers Lane are connected to storm-water drains and do not feed into the pond. They appeared to be fully blocked with silt on a recent visit, and may not function any more. Provision should be made for trapping the silt from these if that silt can enter the pond.

### ***Catchment***

Assuming that there was no longer running water of any kind when the pond was constructed, the pond relied on direct capture of rainwater and on surface run-off from a considerable acreage west and north of the pond.

It has been cut off from intercepting surface run-off from the land in the west because of the storm ditch that has been dug along the golf course perimeter to handle the amounts of water generated by the most severe rainfall- which it does. If there were no reports of flooding in 2000-1, when twice the yearly average rainfall and three times the winter average rainfall fell, then the storm ditch is not going to be overloaded.

There is some run-off from land directly north of the pond-land surface and hard landscape water.

There is run-off collected by Millers Lane as it descends from the west- mostly from the road surface itself but some water from the verges and adjacent fields. This appears the single largest source of water, and valuable as such, despite the silt and any pollutants it may bring with it. The pond might dry without it.

The eastern Millers Lane culvert may catch considerable water rounding the corner from Old Kennels Lane. The new close should reduce this somewhat, although water running into the close may feed through the north and east banks.

Given that 2009 has been thus far a comparatively dry year, the pond looks to 'catch' sufficient water still. This gives it a promising future unless rainfall amounts diminish or the climate warms, increasing potential soil moisture deficit/ actual soil moisture deficit values.

Were the water volume of the pond to become too small, even though held throughout the year, chemical and temperature changes in a small water volume would destroy the function of the pond- save for a hardy rump of animal and insect life. It would impact on the plant life of the pond, though not that of the pond surrounds. In this circumstance the pond would be no longer viable and efforts to sustain it would be largely pointless, though commendable.

### ***Water quality***

Though rainwater is clean of impurities, run-off from fields, roads and other hard surfaces is going to bring with it impurities and pollutants. The pollutants would include small amounts of oil, petrol and 'rubber'. The impurities would include higher than natural levels of nitrogen and phosphorus, derived from fertilisers and increased background levels.

These will impact on the function of the pond, more so whilst it is establishing than when it is established. Provided that levels of pollution are not high enough to 'arrest' development at an early stage.

Though elements of a pond community are susceptible to changes in water chemistry by influx of chemicals, the plant life of the pond is capable of filtering out excesses, backed up by algae and bacteria. This will produce changes in plants, algae and bacteria, though usually only in the amount of organic material produced- increasing it.

The water body will be cleaned up of everything that plants, algae and bacteria can remove, including a proportion of the oils that get in.

The only drawbacks are in the increased amount of organic matter produced. This will make the pond prone to forming blooms- in any warm period as the pond is established, and in spring and autumn once established.

Blooms generally consist of filamentous algal and bacterial communities formed in the water body, tending to accumulate on the surface as they decay. Apart from becoming unsightly and smelly as they accumulate and break down, blooms produce rapid changes in water chemistry, particularly in oxygen levels, depleting them rapidly. This can kill larger creatures dependent on oxygen, and can on rare occasions release harmful toxins into the water.

The other change is faster than normal growth of plants in the pond. This is only disadvantageous in that it means the pond would fill in with vegetative material faster than normal- shortening the life of the pond. (Vegetation fills in the pond, detritus accumulates faster, the pond dries...)

This is countered by taking more material out of the pond as part of regular management than would be otherwise be the case. Removing more material at the usual time of year will not harm the pond. Only the need to remove it more frequently than once a year would do harm. Usual is once a year in mid autumn. More frequently disturbs the wildlife of the pond, and the water chemistry, every time it is done.

If you need to test the chemistry of the pond water, this is better done after the pond has been dredged and allowed to settle. I don't think there is any sign of a water quality problem serious enough to warrant testing before proceeding with any work- unless it should prove necessary to test what the fill of the pond might contain. The Environment Agency would be the relevant organisation to deal with.

### **Vegetation** *Pond*

Has no bottom or free-floating vegetation or emergent species. The top of the fill is almost pure leaf litter, though there are pieces of wood scattered through the fill.

Marginal species restricted to Greater Pond Sedge (*Carex riparia*) and what appears to be Greater Fen Sedge (*Cladium mariscus*), both in single clumps on the eastern side of the pond.

***Land surrounding the pond***

Trees, shrubs and climbers

Sycamore (dominant), including seedlings

Yew-single tree and numerous seedlings

Ash- numerous seedlings

Hawthorn- small mature trees, regenerating stumps and seedlings

Blackthorn! Sloe- occasional regenerating stumps and seedlings

Holly- young bushes

Black elder- regenerating small stump

Cotoneaster- 1 clump on E bank (garden escape)

Field rose- occasional

Ivy (localised)

Vascular plants

Poor on grasses except on north and east banks- no noteworthy species

Large nettle- common

Wood dock- common

Wild carrot- common

Sowthistle species- frequent

Creeping buttercup

Meadow cranesbill

Wood avens

Cultivated avens (geum- garden escape)

White campion- several plants on east bank

Field mallow- one on east bank- garden escape

Hellebore- 6-8 plants on north bank- garden escape most likely

## PRACTICAL WORK TO DEVELOP THE POND SITE

### *Development of the pond*

Work has already been done on landscape surrounding the pond.

The pond needs to pass- in this order- through stages of-

#### Remedial work (immediate or as soon as possible)

To redress the neglect of decades

- Removing & suppressing undesirable trees
- excavating detritus from the pond
- making silt traps

May need to be preceded by selective lifting of plants that would otherwise be destroyed (hellebores, bladder campion, field mallow ... ). These can be returned to the ground in the next stage

#### Landscaping and planting up (phase 1- by spring 2010. or as soon as remedial work permits: phase 2.. autumn 2010)

Providing the main framework of landscaping by

- use of spoil from the pond to landscape the pond, make up banks where necessary
- planting of trees and shrubs
- planting of suitable pond plants
- planting of the ground surrounding the pond- vascular species (if required)

#### Aftercare of the primary elements of the landscaping and planting (2010-2015 as appropriate to elements)

By.

- actions to support establishment of planted trees and shrubs, pond species. This includes selectively suppressing species already present where not appropriate to the site. (These can not be suppressed during autumn and winter dormancy as suppression would fail.)
- maintenance of spoil areas if required (should unacceptable movement occur)
- maintenance of ground vegetation. In spring 2010 establish full range of species present (difficult to do at present). From this survey decide on management of the ground appropriate to the pond. This may range from selective elimination and retention to more wholesale suppression of present herbaceous vegetation in favour of a sown mix. Either approach would take time to carry out, with further time for appropriate aftercare.

#### Routine maintenance

As in any action requiring to be taken as long as the pond is in existence

#### Develop a support system for the pond

Though the scope of this stage is less easy to define than the other stages, it should address

- finance-through the above stages, but particularly to cover work after the developer completes work landscaping, aftercare and routine maintenance- materials and labour costs
- planning- any issues relating to managing this landscape, working in it and public access
- how will the work required be carried out- by who for what elements
- future development of the site- beyond the initial rehabilitation work
- research, monitoring and feedback

## CARRIED OUT BY DEVELOPER

1

### Felling of trees

#### **Fell trees as early as possible, within the period November 2009 to end of February 2010.**

Applies only to pole stage and mature trees, not regeneration and seedlings

This is the felling window before the 2010 nesting season begins.

In order to undertake other work that is best completed (well) before spring 2010, the earlier the better.

#### **Check that none of the trees or groups of trees carry TPOs or other protection.**

TPOs may be varied to an approved plan, though process to vary TPOs is not necessarily quick.

I advise this as a precaution. Work already having been done, I would assume checks have already been made.

As the tall trees are purely sycamore, only sycamore needs to be felled. Elder is optional. Not other native species.

#### **Take down as many of the trees to south and west as you can, in order to provide the pond with better direct light.**

#### **Remove the solitary sycamore north of the pond.**

**In the compound**, to include the roadside sycamores in Millers Lane, but not the older hedgerow trees a little up the lane. It would be better to have general agreement from your neighbours on felling the 3....roadside trees, though only the objection of Highways or a legal objection would prevent their removal. It would be a shame to prejudice what would otherwise probably be a welcomed rehabilitation of the pond. It might be that these last have to come down later- but try to avoid a situation where there is no chance of them coming down at all.

**In South Winchester Golf Course**, the sycamore in the corner against the compound and Millers Lane. Not being your land, the owners of the Course would need to give permission. If forthcoming and in time, it would make sense to do both pieces of work simultaneously, but work in the golf course could follow over autumn & winter. Only replacement planting with native species would follow. But a long delay would mean planting in autumn 2010 and not earlier. Work in the golf course might be done by the community or contractor other than those used by developer, unless South Winchester Golf Course is amenable to the work being carried out as convenient to developer.

#### ***Materials arising***

Sycamore trunks in the longest movable sections will prove useful for bank revetment.

Surplus heavy logs can be stacked in habitat piles, in the most distant parts of the compound from the pond. Larger chunks better than smaller ones- they take longer to rot and are less likely to end up in the pond if vandals get in.

If other arisings are chipped, remove chippings off site. Chippings release tannins and other sap acids in a single shot, acidifying ground and water. Slow decay of solid timber is less harmful as many creatures intercept the nutrients before they leach away. Natural decay is a cleaner process.

#### ***Fence***

You may be obliged to take down and reinstate the fence on the Millers Lane boundary. To the same design will be fine, though any presentable alternative would also suffice so long as it is human proof and dog proof. Even if the present fence doesn't need to be taken down, the gate needs reinstating.

2

**a Removal of material from the pond basin****a Best after tree felling is done. before heavy weather sets in- ideally also as soon as possible**

Though unlikely trees would fall in the pond, using detritus accumulated as a cushion is better than having trees fall onto a concrete lining with minimal detritus cover.

Given that a wet autumn and winter would make working conditions more -difficult, the next few weeks is preferable to a longer delay. **As soon after tree felling as possible?**

But thereafter, the earlier that dredging is done, the longer the disturbed waters of the pond will have to settle down, and what remains of the detritus within the pond to equilibrate chemically and physically.

**b Use dredgings as recommended****b Give the dredgings time to drain, and to consolidate**

This is dependent upon how much material is removed. and how much it needs to compress to fit into the areas it is intended to spread it over.

Since the developer may wish to complete work here by certain time, it may not be possible to wait as long as is necessary.

From my observations on fill in the assessment of the site, should the pond be as deep as predicted, there could be a very considerable quantity of fill generated if all or a significant part of the concrete lined basin is dredged.

**The purpose of dredging** is not to generate material to use around the pond. It is to create as large a volume of water within the overall capacity of the concrete lined basin as possible, reversing the accumulation of material over decades of neglect. The more material removed, the longer the life of the pond. Making the intervals between drastic excavations of the basin as long as possible is better for the pond. It will become richer with time if not so disturbed.

There is thus a certain amount of material to be dredged before a satisfactory minimum amount of clear water is produced. If the site will handle more dredgings in excess of the satisfactory minimum, carry on up to the limit of what it will take. The minimum is not a desirable amount. The more that is removed to the point of leaving a thin skin over the concrete. the better for the pond! the future of the pond.

Excavation should create a range of depths, with shallow and deep areas. When there were cold winters, water above 3 feet deep was required to ensure that the pond did not chill or freeze right to the bottom. Even if this is now a rare occurrence, deep water areas give a better chance of the pond not wholly drying out in hot and dry years- such year as being now more likely.

Decisions about the amount of material excavated! where to use material excavated may need to be made as in advance of the dredging or as it is done. Have someone present who can make decisions as needed when they are needed.

**Can material be moved off site if more is excavated than can be used?**

There may be cost implications to moving dredgings off site as the material may incur landfill charges, possibly as hazardous waste. (A technical classification. It is not- in my opinion- too hazardous to be used on site.)

Given the unknowns in this, use of material on site may vary according to how much is predicted to be generated! how much is generated. That is, the plan for use will respond to the quantity of dredgings generated up to the maximum that can be accommodated on site.

Developer and designer (of the plan for the pond) need to get together during excavation phase to make decision at the time. Some of the guesswork could be taken out if the pond could be profiled right across. This would narrow the upper and lower limits on the estimate of the fill.

***Removing the dredgings from the pond***

**As soon as possible.** This is going to be fairly destructive of whatever community is still present in the pond, but excavation on this scale is a one off process that will not be repeated for decades if at all. No plants presently growing within the basin need be retained. There is no plant life here that can not be re-established.

**Exposing the edge of the lining.** You may need to expose the edge of the concrete, at least on the sides on which major work is being done, in order to avoid damage to the edges.

**It is not necessary to scrape the pond entirely clean.** Remove the bulk of the material, but leave 4" of material to mask and protect the concrete, and act as a growing medium for plants. Not less than 4" thick.

**Take care not to damage the lining.** Even if the lining will take a heavy loading, assume that it will not to be on the safe side. If the excavator has to come onto the lining, use sleepers to spread the load.

**Try to reach at least part of the centre of the pond** to get a maximum depth. This may mean coming in from one side using sleepers and scraping up everything within reach.

**Remove hazardous material** (objects thrown in- there has to be a shopping trolley and three quarters of a Morris Minor) from the dredgings. Try to keep what is used natural.

***Holding, the dredgings before using them***

Airing the dredged material will freshen it up. Having decayed anaerobically in the pond, it will begin to decay aerobically in air, slowly breaking the remaining organic material into mould and forming a carbon rich soil. It will smell for some time when freshly dredged. Spreading it will allow aerobic decay to work faster, but I would spread it only in the process of putting it into its final resting place. Don't spread it over the compound when it is dredged. Just heap it. But you will have to wait for it to drain down in any case before moving it again.

***With the dredgings***

Having looked at the site in more detail, it would be possible to cover the north bank as recommended if certain plants presently growing on it are lifted first. The east bank is more interesting floristically, and only parts of it might be covered.

Material could be laid around the western and southern sides, but this needs to be thought out carefully as a thickness of dredgings may prevent planting up of the ground so covered until the material has fully settled.

Use long lengths of sycamore trunk as revetment. Not short pieces- these won't be stable enough.

***Silt trap(s)*****c place silt traps on the 2 Millers Lane culverts****c After a and b are done. Heavy machinery is not vital. but it depends on how the silt traps are made.**

This is a box set so that the top of the box is level with the base of the culvert inlet pipe. Water falls into the box, drops its silt and passes out, without backing water up the culvert. Accessible so it can be periodically dug out, and not so small that it fills with silt very rapidly- or so big that it is a hazard when not full of silt.

Can be built or made from a pre-form such as a manhole, or even a small garden pond (so long as the material is relatively robust and the shape simple and easy to dig out.

Concrete or brick is durable. Timber is possible- thick planks of larch (not tanalised wood). Can be covered so long as cover does not impede function.

Do not place on pond edge, but within edge of landscape planting. As water from current culverts reaches the pond, it is to be assumed it will continue to do so across a silt trap.

Recommend 4 feet by Z feet by 18" depth.

Being a relatively small job, the silt trap could be set in by hand after the works above had been done, though it would be useful to check that the sites can be excavated by hand.

3

**Profiling the land surface around the pond.**

If done, would follow the above stages whilst suitable equipment is still on site

**There is no need to profile the land surface other than as directed above, and to make good any cutting up associated with those works.** Pulling larger tree stumps would be ill-advised in a relatively small area.

4

**Other works**

Though I can not think of other works to be done by the developer or anyone else other than other contractors, volunteers and the local community, this is just in case. Brainstorm this section!

**Costs**

Since the developer has already undertaken works and is prepared to undertake further necessary works as per the recent site meeting, I have not proposed costs to the above work. If the extent of the work under the above stages has cost implications that may limit what is done, these should be resolved in such a way as to accomplish as much as can be done towards what is necessary.

## **DEVELOPMENT WORK**

### **Where are we?**

By the end of winter 2010, the pond and its environs should be settling down after the earlier disturbances. and plants will be getting ready to grow again.

The disturbance will probably have exacerbated the tendency of ruderal weeds to try and take over, rather than encourage desirable species.

There is the likelihood that the felled sycamores will attempt to regenerate from their stumps.

If the dredged material has stayed on the banks, it will be settling down now and starting to weather into soil.

Winter weather will be testing out the silt traps and hopefully replacing the volume of dredgings removed with water.

### **Intentions of further development**

The intentions of further development are to

- landscape the pond with appropriate shrubs and trees as a framework replacing the inappropriate tree cover now removed, and as a framework to which will be added a suitable cover of herbaceous plants and grasses by selective encouragement and introductions
- stock the pond with appropriate marginal, emergent and free floating aquatic plant species
- manage to retain and establish these species- the aftercare of establishment phase
- to enhance and diversify the establishment. This itself will be two-fold in actions-
- the pond itself will be left to its own devices save for controlling the biomass of plants it contains. Diversification of pond plants would be a very slow process, as much down to natural processes as to intentional introductions.
- the surround of the pond could be more actively diversified. though as much effort may go into controlling what grows in the early years as intentionally diversifying the planting scheme

### **Landscaping around the pond**

#### ***When to carry out landscaping***

The landscaping will be the planting of trees and shrubs.

With traditionally cold winters, tree and shrub planting was done during the months of dormancy, but normally early or late when the threat of frosts was lowest. Planting in late winter and early spring was riskier because frosts could be harsher. Planting in autumn was to be preferred, but exposed the planting to severe winters.

Autumn is unlikely to be an option because we are already well into it and the site will need to settle down once the first phase of development work is completed. The dredgings put up on the banks really need to carry a crop of grass and herbaceous plants before it is ready to have trees and shrubs planted on it.

Late winter into early spring 2010 looks more promising for the first phase of landscape planting- all of the site judged fit, except those areas more thickly covered with dredged material.

This would afford time to assemble the plants required, and arrange for them to be planted.

It will also enable the planting sites to be prepared, which will probably require that the ground is treated with Roundup herbicide (Glyphosate) to suppress existing growth to avoid it competing with the planted shrubs and trees.

***What trees and shrubs to plant***

I would recommend-

- native species only
- trees and shrubs that can be coppiced (cut to ground to grow again)
- no invasively creeping and spreading species (dogwood, blackthorn, some willow species)

But within these parameters, a range of species, varying in height and form and ground cover ability, so as to cup the pond in a basin part made of the lie of the ground (banks to north, east and west) and part made of trees and shrubs (south and southwest and under the west bank). It is not necessary to cover the ground with trees and shrubs for the sake of doing it. Many of the creatures living in ponds (amphibians, invertebrates) require ground cover for safety from predators and as a further source of food. Herbaceous vegetation can offer this but is extended by trees and shrubs- both in the form of cover, and in the resources they add to the cover of the land.

It is vitally important not to block the incidence of the sun onto the pond at high angles- that is

- not exceeding a line from the apex of the thatched roof of the cottage to the pond
- not increasing the height of the bank on the west too much

The right trees allow this. Shrub trees like field maple and water elder (smaller than high forest trees like oak, sycamore) can be left to grow without becoming too large for the site- though these still have to be placed carefully- both for the pond and to retain sight-lines to the pond from Millers Lane. Most of the species in the list below can be coppiced- cut to the ground to regenerate from low stocks (trunk below the cut point). How frequently they are coppiced depends upon rate of growth, position and what is desired of the surrounding cover.

***Species list***

Plant from the following species-

- Alder buckthorn (*Frangula alnus*)
- Buckthorn (*Rhamnus catharticus*)
- Crab apple (*Malus sylvestris*) (site margins)
- Field maple (*Acer campestre*) (site margins)
- Red or Water Elder (Guelder rose) (*Viburnum opulus*)
- Common hawthorn (*Crataegus monogyna*) (enough on site by natural regeneration)
- Hazel (*Corylus avellana*)
- Common spindle-tree (*Euonymus europaeus*)
- Whitebeam (*Sorbus aria*) (native form only)
- Wild service-tree (*Sorbus torminalis*)
- Blackcurrant (*Ribes nigrum*)
- Gooseberry (*Ribes uva-crispa*)
- Redcurrant (*Ribes rubrum*)

Climbers and ramblers would not be introduced at this stage because they grow faster than the shrubs and trees and would swamp them before they were established. It could take 5-8 years before blackberries, wild honeysuckle, raspberry and the like could be introduced. Those already present will have to be controlled as necessary.

Plant in spiral guards or tree tubes, staked where necessary.

These will help to protect the planted subjects and to identify them from anything that will attempt to displace them over the period it takes for them to establish

- find their roots
- grow until they no longer need support

by means of

- protection of the above ground part
- selective weed control

***Source for native trees***

Burntwood Nursery off the A30 north of Kings Worthy.

**Stocking the pond**

This should be done by a single person working to a list of suitable species.

Plants grow very quickly in ponds because pond water is nutrient rich.

It is all too easy to put in plants that grow too quickly but which can not be removed. Most of the plants commercially sold are ill advised for ponds smaller than a few acres in extent and less than 10 feet deep. They **Will** vegetate the pond rapidly, and thereafter you **Will** struggle to keep them in bounds.

The native species proposed **Will** colonise the pond relatively quickly, and **Will** need to be controlled thereafter. But control of them once a year **Will** be possible, and a balance that does not destabilise the pond community ought to be capable of being maintained.

The main fear with ponds these days is that birds do not transplant inappropriate species from garden ponds into unaffected ponds- species like water fern, Canadian waterweed, New Zealand pygmy-weed... Some would have to be tolerated thereafter but others would destroy the ecology of the pond.

But for the first year of planting, the pond would look relatively bare of plants-large pond, small areas of planting ...  
Fear not ...

***Species to plant***

If the pond is deep, the Greater Pond Sedge and Greater Fen Sedge could be retained on their shelf of material. In a shallow pond, they would colonise widely in time, which would be less desirable, and they would have to be removed or actively managed.

The pond community consists of

- marginal plants- liking the damp conditions around the pond, but not standing water or saturated ground
- emergens- tolerating saturated ground, and thus growing across saturated ground into the shallow water of the pond edge to whatever depth they can tolerate. A nebulous class as the 'deepest' could tolerate as much as 10 feet of water. Many can only handle much shallower depths.
- free floating & bottom rooted- the species occupying the pond centre or water column, including the surface floaters and water oxygenators. Free floating species **take** their energy direct from the sun or from nutrients dissolved in the water. Many of these have strong reproduction systems that make them difficult to remove once present.

Given that other species will come in as the pond community develops, the first phase is just to establish representatives of each community so as to avail of their actions within the pond, and not to establish full ranges of each community.

***Plant from the following list*****Marginal**

Bugle (*Ajuga reptans*)  
 Angelica (*Angelica archangelica*)  
 Red valerian (*Centranthus ruber*)  
 Teasel (*Dipsacus fullonum/ pilosus*)  
 Meadowsweet (*Filipendula vulgaris*)  
 Meadow cranesbill (*Geranium pratense*)  
 Ragged robin (*Lychnis flos-cuculi*)  
 Gipsywort (*Lycopus europaeus*)  
 Creeping jenny (*Lysimachia nummularia*)  
 Yellow loosestrife (*Lysimachia vulgaris*)  
 Purple loosestrife (*Lyrhrum salicaria*)  
 Common fleabane (*Pulicaria dysenterica*)  
 Narrow-leaved lungwort (*Pulmonaria longifolia*)  
 Lesser celandine (*Ranunculus ficaria*)  
 Comfrey (*Svmphvrum officinale*)  
 Marsh valerian (*Valerian dioica*)

**Emergent**

Water plantain (*Alisma plantago aquatica*)  
 Water starwort species (*Callitriche*)  
 Marsh marigold (*Caltha palustris*)  
 Yellow or flag iris (*Iris pseudacorus*)  
 Water mint (*Mentha aquatica*)  
 Lesser spearwort (*Ranunculus flammula*)  
 Greater spearwort (*Ranunculus lingua*)  
 Brooklime (*Veronica beccabunga*)

**Free floating and bottom rooted**

Rigid hornwort (*Ceratophyllum demersum*)  
 Soft hornwort (*Ceratophyllum submersum*)  
 Frogbit (*Hydrocharis morsus-ranae*)- only good surface flowering floating species tolerable- spreads fast but controllable  
 Spiked water milfoil (*Myriophyllum spicatum*)- tends to spread fast  
 Whorled water milfoil (*Myriophyllum verticillatum*)- tends to spread fast  
 Amphibious bistort (*Polygonum amphibium*)  
 Broadleaved pondweed (*Potamogeton natans*)  
 Fennel pondweed (*Potamogeton pectinatus*)  
 Water crowfoot (*Ranunculus aquatilis*)

***Species to avoid (at all costs)***

Anything capable of regenerating and perpetuating itself (very quickly) from small fragments, such as

- Elodea water weeds
- Crassula species (pygmy weeds)
- Water fern (*Arolla*)

Fast growing species that extend by rhizomes or runners, or that seed prolifically

- bur reed species
- common reed (*Phragmites*)
- reedmaces (commonly known as bulrushes)
- water lilies (these are too vigorous for most ponds- though widespread, naturalized but not native)
- stronger growing sedges and rushes
- Japanese knotweed species

Even if the centre of the pond is very deep, some of these species trap silt so well in a fibrous root system that grows near the water surface, that they can extend a blanket of vegetation across the top of the pond whilst leaving a void beneath. This is the basis on which most bogs work. Though the mat of vegetation can be cut back, it is better to avoid species that do this.

Do not accept gifts from people with ponds who are taking material out when maintaining their ponds. Donations from such people can introduce species you do not want- greatly increasing the risk of undesirable species getting into the pond that is already higher than it should be because of transmission of plant material by birds.

***Sources of plants***

Peter Golding Ltd, Barton Stacey  
 Artsapes Aqua, Whitchurch

It is illegal to take plants from wild sources without permission. Anyone who has access to desirable species that may be acquired legally can of course assist in the stocking- but bearing in mind what I said about well-meant donations. Some of these species could be started from broadcast seed.

### **Aftercare in the first year April to November 2010**

Aftercare is relatively simple, and responds to the growing conditions of the year, from 2010 onwards.

#### ***Monitoring***

Monitoring is a process of checking up on the pond, seeing and recording what is going on- keeping a record.

Ecological monitoring looks at the interaction of the physical elements of landscape with the living systems they support.

It may be rather early in the rehabilitation of this pond to start ecological monitoring.

Though no reason not to start the groundwork on some forms of monitoring such as fixed point photography. There ought at least to be some record of the process of making this pond work again.

General monitoring would be applied to the practical establishment of the pond and the aftercare.

Good general monitoring would gather enough observations and information to establish what needs to be done in response to what has been observed.

It would look at

- the condition of the planted trees and shrubs and determine whether weed control is required, or watering
- how the pond planting is doing and whether other plants, desirable or undesirable, are colonising
- how works done the previous autumn are holding up
- if the dredged material is holding to the banks and working as expected
- if the silt trap is working

#### ***Protecting the planting on land***

Trees and shrubs and land planting are subject to competition from plants previously established there, and to lack of rain causing drought stress- weakening the vigour of the plant and thus ability to compete- or in the worst case, causing death.

Monitoring how the planting is doing- amongst other things. It is better to respond to the circumstances of the year and how things are actually to be doing, than bunging dates into the diary and looking at the pond only on these dates.

With monitoring taking into account the variability in growth and other responses induced by the nature of the year, what you need is a flexible ability to address and solve (where possible) any problems seen to be developing. Hopefully the solutions will be routine, and none of the problems beyond solution.

The need to counter weeds might be as much as a couple of times during the growing seasons in the first couple of years. Watering is less predictable and does depend upon the rainfall and temperature profile of the particular year. You might have to constantly dance attendance, or do nothing at all.

#### ***Protecting the pond planting***

Ponds being wet, planting can be done at almost any time during the growing season in water. Since water is usually abundant in ponds, there will be no need to water when it doesn't rain. Unless the pond goes dry... in which case you may have a problem!

If planting is done in spring, it may be necessary to add straw to the water (10<sup>th</sup> of a small bale per time) during the spring to absorb excess nutrients and prevent algal blooms upsetting the planting. The blooms flourish on free nutrients, and the straw absorbs free nutrients and takes them out of circulation. The strewn straw could be netted off the water after a few days, or allowed to sink to the bottom. It will add relatively little to the detritus on the bottom of the pond. Strewing might have to be repeated several times during spring. By the end of the first growing season the planting should be well enough established to be starting to control the nutrient levels of the pond. Using straw to control nutrient excess should become increasingly rare. Bloom periods in newly established ponds partly depend on warm periods. No warm periods and there will be few blooms. Lots of heat-waves and they may be common.

This process of watching the progress of land planting and water planting continues until the end of the growing season.

***Autumn- mid October to early November 2010***

This would normally be the time when the pond is put to bed. If the pond was sufficiently vegetated, or more than sufficiently vegetated, growth above the water surface would be scythed down and removed. Plants within the water might be removed as well, roots and all. To achieve a sort of rule of thumb guide to a healthy pond- a third marginal vegetation, a third emergent vegetation and a third open water clear to some depth.

The pond is unlikely to have reached a state of vegetation that would require any work at the end of the first year of growth. It could take several years before any serious work has to be done on pond vegetation.

But as with the welfare of the land vegetation, it is difficult to be precise. Each pond is different, and the response should be informed by monitoring and flexible.

This would be the last maintenance work to be done on planting done the previous spring. It would be a little too early for the second phase of tree and shrub planting unless a cold winter had set in.

***Autumn- late November to early December 2010***

The right period for a second phase of tree and shrub planting. From the same list as used for the first phase of planting, and carried out in the same way.

***Thereafter***

Save for making good any losses from the planting phases, if required, this would be the end of the creation of the habitat surrounding the pond.

**Aftercare in subsequent years and the transition to routine management*****Aftercare of the land around the pond***

Aftercare of the planted trees and shrubs could continue as long as 2014. By this time they should be well enough rooted to be able to out-compete any threat to them.

From 2015, the land around the pond could be considered to be subject only to routine maintenance, plus micromanagement scale additions.

***Climbers and ramblers***

By 2015, it will be possible to consider introducing ramblers and climbers, since there will now be a framework on which to support them. Avoid very rampant climbers such as wild clematis. But honeysuckle, raspberry, blackberry and most of the wild roses would be acceptable- thorny and prickly perhaps, but possible to manage. Don't go over the top though. Look at how these species behave when well established (as in local examples), and plant or don't plant according to whether you think you can cope with this or not.

The advantage to the climbers and ramblers is that they are, with some of the berried ground shrubs, the plants on which many woodland creatures feed- from nectar or fruit. Bramble is a principal food source for dormice. Whilst it may be ambitious to consider getting dormice here, I use the point to illustrate the value of such plants as additions to the nascent spinney (very small copse) being created.

Around 2020-22, the planted trees and shrubs may reach a size enabling the first phase of management by selective coppicing. Ramblers and climbers growing on the worked trees would be managed along with the trees. They usually regrow even if cut back to the roots.

***Aftercare of the pond***

The pond plants would be monitored annually, and if necessary managed every autumn to remove excess vegetation.

Plant biomass in the pond would increase each year, until a sort of balance was reached between biomass (growth) put on and biomass (material) removed from the pond in autumn.

Remove material from the pond on a rotation (divide the pond into compartments and clear one or more compartments in rotation until the whole pond has been done. How long the cycle is depends on the particular pond. By this form of management the pond could be maintained almost indefinitely.

Concrete lined ponds have the advantage over butyl lined ponds that you can be quite rough with hand tools without fear of puncturing the water retentive lining.

It should be possible to pump out even consolidated sediment to prevent a slow detritus build-up that displaces water and leads to the sort of shallow pond over thick sediment that we have at present through many years of neglect.

Taking out a relatively small amount of sediment year upon year reduces disturbance to the pond to an acceptable minimum- 'acceptable' in that the disruption to life in the pond is not so much as to cause serious and prolonged damage to the ecology. Little pond life will be killed at the time of the disturbance, and by the following spring, the pond is ready to function as if nothing had happened to it.

As with vegetation clearance, removing silt by increments defers the need for drastic activity like that undertaken in 2009, almost indefinitely.

As such, the pond could be considered to be manageable by routine management techniques from the year it is first planted up- in 2010.

The only additions to routine management would be occasional addition of species.

***Emptying the silt trap(s)***

Monitoring will determine how often the silt traps need emptying. This frequency is built into routine maintenance, Empty at the beginning of wet seasons to ensure plenty of capacity.

***Monitoring***

By the time establishment is complete, monitoring ought to be changing to ecological monitoring.

This need not be carried out by those who have constructed or thus far maintained the pond, though some person or organisation should be responsible for oversight and record keeping. Schools could be involved or other community groups.

A parish for which I serve as conservation and management advisor has established a very pro-active Wildlife Recording Group, and I know that Oliver's Battery has in the past undertaken similar projects.

**Micro-management**

Once the broad structure of the pond and its environs is up and running, projects to enhance the structure can be undertaken- bat, bee and bird boxes, habitation creation for small mammals, etc.

This form of management will respond to how the pond evolves within the landscape and the community, and to the imaginativeness of those managing it.

## **TO BE DONE BY THE COMMUNITY, CONSERVATION VOLUNTEERS AND OTHER CONTRACTORS**

### **Money**

Before thanking the developer on completion of his involvement and taking his leave, there is the issue of money to undertake:-

- further stages of development up to full establishment of the structure of the site
- aftercare of the establishment
- regular and irregular ongoing (routine) management
- community development work leading to the adoption of the pond as a community site

I am not proposing that the developer leave a pile of blank cheques to fund development and management for ever.

I am just highlighting that, in addition to the practical work needed to rehabilitate the pond, there will be future work and future costs, and these have to be met jointly/ singly/ ?

It is for those who consider they are involved/ ought to be involved, to resolve ongoing finance- not for me to say who pays what and who does what.

### **Getting the project known**

Publicise. Get the pond known, discover and publish its history in the community, and make the intent of the work understood. Silence the critics by demonstrating a sound basis for what is being done.

Yew Hill Pond, Port Lane Pond or whatever it comes to be called, ought to be a community pond. It is one of the last surviving old ponds of the Oliver's Battery civil parish corner of the ancient ecclesiastical parish of St Faith with St Cross.

Access will have to take account of the potential hazards of the pond, and be restricted. This would be good for the wildlife of the pond in any case. But access ought to be possible at times, a just reward for calling upon the community looking after the pond in the future when work needs to be done.

These sections do not amount to practical work on the pond, but ought to be under consideration as the balance of the development work is undertaken.

### **Management plan**

The document I have written does not constitute a management plan, but indicates the stages needed to develop and manage the pond, with as much information included as is relevant at this time.

I am not sure that any more than this is required for the pond and its environs, though I shall of course continue on here to explain the second phase of development, with necessary advice included- beyond the developer so to speak.

Within which will be the management formula to maintain the pond and the landscape around it. To be applied to the pond with the timing that will be derived from monitoring pond and landscape.

What the pond does need is oversight. This need not be by a dedicated pond oversight group, but as part of a parish wide remit by whichever group considers that remit to be part of what it does. That group should embrace (represent) all who have a duty of care of the pond, or an interest in the care of the pond, and be able to co-opt as necessary.

It may be that something amounting to a small management plan is written in the future.

At the present, I think that, in addition to my advice, the main work ought to be sorting out how the parish regards this pond and arranges for the reintegration of it with the community & for the care of it.

## **HISTORY**

Being background to the pond beyond analysis of the present day feature and surrounding environment.

I returned to Hampshire Record Office to establish more recent events/ the history of features as small as a single pond.

In the course of landscape research, I have already looked at the development of the local landscape, though specifically from earliest times rather than more recent centuries. Rather more people study recent history.

It appears that there is more to this pond than now meets the eye!

### ***Sources***

All from Hampshire Record Office

#### Ordnance survey maps

OS 6" County Series (1" edition) sheet 49 (section)

#### St Faith's parish

Tithe Map and Apportionment (1845)

21M65/F7/260/1·2 (listed under Winchester parishes)

Thurmond Manor estate map 1639

11M59/E2/8078

#### Hursley parish

Tithe Map and Apportionment (1845)

21M65/F7/124/1·2

Enclosure Maps (1812)

30M67/1 and Photocopy 236

Manor of Merdon estate map: copy of 1588 map

Photocopy 390

Silkstead Manor estate map 1601

145M86W/1·2

Silkstead Manor estate map 181h century

145M86W /3·5

### ***Location***

The pond lies against the parish boundary dividing the ancient ecclesiastical parishes of St Faiths, and Hursley, with the ancient parish of Compton a presence not far to the east. That boundary ran down the western side of Port Lane from Lent Hill (where it meets Badger Farm Road), to the south side of the land once called St Faith's Down or Baggers Down (not badger) at the closest pass of the copse on Yew Hill

The ancient ecclesiastical parishes were established around a network of churches laid out across the landscape so as to ensure that no one was more than 3 miles from a church and thus had any difficulty in demonstrating their adherence to Christianity. Since these churches were not necessarily near settlements but could stand alone in the landscape, they were called field churches. But as the landscape became administered in detail at a secular and ecclesiastical level, it was partitioned into manors and parishes. The field churches became parish churches.

Though the 'ancient' parishes continued to be created until 1550-65, it is assumed that the Hampshire landscape was apportioned amongst the oldest tiers of field churches by no later than AD 800.

That the parish boundary, established by AD 800, runs along Port Lane, attests only to the antiquity of the Lane and not the pond.

The Lane- as can be seen by the width of it between hedges southwards from the pond- was a drift way. A drift way was a route through which livestock were drifted. They have since become called drove ways, but droving was the art of drifting livestock. Drifting was what the drovers did.

Drift ways had to contain grass and have access to water, as well as getting from a to b relatively directly. Grass was usually contained within the width of the drift. Hurdles would be used to pen in the stock between whatever defined the boundaries of the drift way. The more important drifts might be hedged or railed, but some appear to have been bounded with temporary structures of hurdles and 'penny hedges' put up at the drifting seasons.

That water was needed in or near drifts, and that there was a pond at this place, would seem more than coincidental.

Port Lane uses the Pitt-Otterbourne valley for access through the landscape. It does not lie at the bottom of the valley anywhere except from Down Farm upstream to this pond.

Port Lane was a drift route of local significance connecting

- southwards with drift ways to Hurslev, Sharland, Slackstead, Silkstead and Compton, and from these, east and west in the clay vale below Hursley
- northwards with Whiteshoot (Whiteshute), St Faith's/ St Cross and Painters Fields

At the pond, it divides.

Millers Lane crossed it from west to east, though both arms of the lane may have been open tracks through downland.

Ernenhall Lane (now Enmill Lane) ran from Farley Mount ridge along the base of the dry valley through Pitt to this crossroads, joining Millers Lane to the western side of the pond. The portion of Emehall Lane from Pitt Farm (Manor) across the gold course 'disappeared' from the road network: before 1600 as a result of land use changes. It would have afforded a route onto the Farley Mount or Sarum Ridge. Road 'improvements' of the time probably replaced it with the Port Lane ascent of Lent Hill, picking up Pitt Lane (Sarum Lane) at the summit.

What is now Old Kennels Lane only approximates to the Port Lane ascent of what was recently Sheephouse Down or Shepherds Down to that portion of the Stanmore Ridge called Lent Hill.

Although the parish boundary continues the line of Port Lane to Lent Hill and beyond, there is no evidence the Lane had any physical boundaries defining the section north of Millers Lane.

The route of the lane is dearly ancient (and indeed far older than the parish boundary), but it may have been the drift itself that was used for the parish boundary (as in the line drifted by tradition) and not a physical feature of the drift.

Old Kennels Lane (named after a much more recent 'landmark') has 'drifted' east of the old line of Port Lane. Even in my time, the connection with Lent Hill has been obliterated by the construction of Badger Farm Road, the Battery end of it being cast into obscurity.

As I said earlier, the west side of the pond lay right against the parish boundary.

That was fortuitous, rather than suggesting that the pond site itself might be ancient.

The location is a good one for an ancient pond. Many ancient ponds lay within the width of roads rather than to the side of roads, later forms of the road tending to contract away from the ponds rather than anything else happening.

Ancient ponds have also tended to contract in size. Latterly as a result of disuse, lack of maintenance and transience to dry hollows as a result. But in earlier times contracting as a consequence of a slowly dropping water table.

I would expect the parish boundary to have either-  
- bulged around the pond to enclose it to one parish

- or to have bisected the pond if the waters were to be allocated between two parishes.

This pond occupied about half the width of the Lane as mapped in 1871 (Ordnance Survey 6" to the mile County Series edition 1869-73, sheet 49).

Given that the Lane appears to have had no bounds north from Millers Lane, and that the parish boundary does not deviate as if around anything, there is a possibility that a pond here, around when the parish boundary was laid out, was bisected, so as to allocate its waters to both parishes. The pond has since 'migrated' and possibly contracted, to leave it wholly within St Faiths ecclesiastical parish.

### ***Landscape and settlement***

Until 400 years ago, the land around here was managed as permanent downland, allocated between Hursley, Compton and St Faith's parishes. Some of the downland was very old. Even 125 years ago, much of it remained, though large areas had been broken up on a temporary or permanent basis into arable farmland.

There had been a very large block of 'woodland' (wood-pasture forest) west of this downland (reaching within a quarter mile of Romsey Road), called Ernenhall Forest, but this had 'eroded' away over many centuries to disappear almost entirely by the 17<sup>th</sup> century.

Prior to the appearance of Yewhill and Down Farms, any 'farming' of the landscape done was handled from the very much older complexes at Upper & Lower Sharland and Lower Silkstead towards Hursley, and Pitt Farm in Pitt.

The nearest settlement was the hamlet of 'Pitt'. Pitt is a semi-derogatory name for the valley it lay in, and the earlier name of this community may have been Kellham.

Pitt has contracted considerably over several centuries, losing a street from the western end of the village back to Romsey Road (or the precursors of that road), and a number of cottages extending down the valley onto what is now the golf course. One of these may have been the local manor house. Later the eastern end of Pitt was taken up by the Manor Farm, later Pitt Farm, later the Clubhouse. The Farm was re-designed several times.

There were no buildings nearer to the pond than Pitt Manor and Farm to the NNW and Upper and Lower Shorland to the south, until the breaking up of the permanent down.

This began slowly (hereabouts) in the 17<sup>th</sup> century at the margins of the land anciently farmed, but gathered pace and acreage from the late 18<sup>th</sup> century and early 19<sup>th</sup> century, driven not only by the agricultural revolution accompanying the Industrial Revolution but because of the particular crisis about self-sufficiency in food attending the French Revolution and Napoleonic War.

With the earliest clearances, there was no infrastructure save upland barns for holding machinery and gathered-in crops.

Down Farm originates as an upland barn in the 17<sup>th</sup> century, that barn being sited in a much older clump of furze called Barton Bushes on Hursley Down (attested by manorial maps of Silkstead Manor, 1601, 18<sup>th</sup> century).

Sadly there are no such early maps for what was to become Yewhill Farm, of which all that remains today is Old Kennels Cottage, the thatched & lime-washed building across Millers Lane from the pond.

The pond and Yewhill Farm were in Pitt Manor in Hursley parish for administrative purposes. There are no early maps of Pitt Manor in the Record Office collection.

Whilst Thurmond Manor in St Faith's parish held Port Lane and the land east of the Lane, down to the Itchen, There is a 1639 manorial map of Thurmond Manor that contains enigmatic detail about this site.

The 1812 enclosure map for Hursley parish covers the Hursley side of Port Lane and also offers enigmatic information about the pond and land around it.

### ***Yewhill Farm***

Yewhill Farm is shown on the OS County Series map of 1871 as buildings occupying the N, W and S sides of a quadrangle, lying from outside the western parochial boundary of Port Lane across the western half of the Lane. The pond lay to the north of the farm across Millers Lane, in the same western part of the Lane as blocked by the farm.

The Farm is also shown on the 1812 map, as is the pond, with the same shape and location as presently. ↵

But the pond is not shown on the St Faiths tithe map of 1845 despite lying in the parish

Nor is it shown on the margins of the Hursley tithe map of the same date. Hursley had no obligation to show it, but features on the edge of parishes often were shown, or at least roughed out. The farm is shown as the western part of it lay in Hursley parish.

That the pond escapes the tithe maps is probably oversight. It was on the edge of both parishes.

That it is shown on the very good Hursley Enclosure Maps of 1812 is good enough evidence that it existed at the time. Hursley was a very important parish administered from Hursley Parle, and the owners of the park could afford to commission a series of remarkably good maps from 1588. (None of the earliest Hursley maps reach out this far.) There was a sequence of 4 enclosure maps detailing parliamentary enclosures in the parish, and these represented the parish field by field, including buildings, wells, ponds ...

The Hursley map also shows that Port Lane had already contracted away from the old western edge by this time. The builders of Yewhill Farm did not simply stick it into the Lane and ignore all the abuse!

The 1639 Thurmond map hints at a pond site here. It could be a spot on the map, which is very primitive, compared with the 1812 Hursley document. But the pond that the Thurmond map may indicate lies to the NW of the present pond, about 20 yards out into the golf course. About the same size as the present pond, but presumably clay lined or natural.

Should this be a real pond, it is the only evidence of there possibly being an ancient pond here. The site is on the valley floor, where a higher water table may once have sustained ponds more readily, or even a seasonal bourne (winterbourne).

Were there a pond here in 1639, in much earlier times there may have been a larger pond lying at the junction of Port Lane, Ernenhall Lane and Millers Lane. Wide and shallow, a typical watering place on drift ways. A similar pond lay in Pitt across all roads passing through it.

This low on the Upper Chalk, there is little doubt that there would once have been ponds in the valley, and at some time a flowing watercourse. Only a transect across the valley floor could prove it (electronic remote sensing). Excavation would be needed to provide dating evidence for features detected.

With the exception of the Thurmond map that may put a pond in the landscape in 1639 before any nearby buildings, Yewhill Farm and a pond on the present site are first mapped in 1812.

Down Farm is also present on its site, but without a pond. The range of buildings with the farm extended across the pond site shown in 1871, and the farm was still surrounded by Barton Bushes, a patch of scrub on the Down centuries older than the Farm. But it had a well. The pond appears before 1845.

Pitt Farm was shown in 1812. Without the pond it had in 1871, because there was in 1812 a substantial pond lying across the whole width of the Romsey Road between the then buildings of the farm, and cottages set back from the western side of Romsey road to accommodate the pond. There were several old ponds of this date in the village. Only one of them still existed by 1871. The pond across Romsey Road had presumably been drained and filled in. By 1871, Pitt Farm had been completely re-modelled and it acquires a square mist pond. A second is built across the road, north of where the natural pond used to be.

Yewhill Farm has the look of a 'standard' Georgian small farm, put into the local landscape to work ground newly taken into cultivation. North, west and south ranges, open to the east, pond to the north. Not seemingly a residential farm at first but all barns and service buildings. Tithe maps distinguish between inhabited and service buildings.

Old Kennels Cottage stands on the site of the eastern end of the north range of Yewhill Farm.

At the site meeting, it was mentioned that the cottage was thought to have a 17<sup>th</sup> century origin. The title deeds of the property would probably clarify the supposed date of construction, but the low proportions and the eyebrow dormers 'permit' the building to be as old as this. The pitch of the roof is rather steep, and the height of the building to the apex of the roof is 'tall' for an old cottage. -

A 17<sup>th</sup> century date is a little surprising, since the site of the cottage would have been prone to flooding- at one time. Floods were admittedly accepted as part of daily life in the past, but even so, cottages were not built in sites prone to regular flooding. It must be supposed that the risk was known to be very low, or had diminished. Or that, despite the risk, there was a good reason for building on this site. Down Farm was set dear of the valley floor. There is no evidence from maps or on the ground that Old Kennels Cottage was protected in any way-by a ditch to carry away waters, or by a culvert beneath.

#### *Site*

The pond lies on the narrow floor of a dry valley extending down from the Farley Mount ridge through the hamlet of Pitt, continuing on into Compton Street.

Port Lane dropped slowly into the valley floor as it approached the pond, and occupied most of the width of the valley floor when it reached the pond. I assume that in recent centuries the valley was dry and unlikely to contain even a seasonal flow of any kind; and that Port Lane dropped into the bottom of the valley to connect with other routes rather than to access any other feature.

But there is a possibility that when water did flow down the valley, livestock using this section of Port Lane would have had the opportunity of drinking here. It seems a likely place.

Ernenhall or Enmill Lane continued up the floor of the valley towards Pitt.

Old Kennels Lane/ Port Lane made an oblique ascent of Fore Down to access the Stanmore-Farley Mount ridge west of Winchester and the Whiteshoot descent into St Faiths, Winchester, and fords of the Itchen at Bull Drove.

It is safe to say that save for the site of the pond itself, the whole landscape in the immediate vicinity has been altered by later development, isolating the pond from its surrounds.

This includes-

- 'splashing' the slope north of the pond to produce additional steepening and elevation of ground that would have climbed away from the pond with a moderate slope in any case
- cutting the pond off from the valley floor west of it by the digging of a deep ditch around the SE extremity of the Golf Course, presumed to act as a soak away for storm water collecting here from the adjacent slopes of the Golf Course, preventing flooding of the crossroads and the cottage
- raising of the ground surface around the pond and road junction by the removal of material from the roads when metalled, and from the pond over years of maintenance

The valley is cut into solid chalk. This chalk seems to contain spectacular 'fissures' which have shown up on aerial photographs of the district. It is to be presumed the solid chalk is more deeply masked by fill in the valley, this fill being a residue of terminal glaciation deposits, soil from downwards creep, and material washed in by storms.

As mentioned above, archaeological techniques could establish the depth of fill, and whether the valley at any time since the end of the Devensian Glaciation contained a flowing bourne. Hitting a pond site would be fortuitous.

If water had flowed in sufficient volume to cut a channel, this channel would have been entirely submerged by soil creep and land disturbance in the time since it last flowed.

(In a similar valley near Bishops Waltham called Stoneydean (Duncombe, Dundridge Vale), 15-16<sup>th</sup> century material was coming out from 10 feet below the present field surfaces, without any sign of reaching the hard geology of the winterbourne channel known to have once been present.)

There is little doubt that the present pond itself sits in the fill layer, possibly only the top of it.

It may be one in a succession of ponds on or around the spot, rising up as the fill rose up. But this involves speculation about the amount of water coming down the valley only capable of proof or disproof by calling in archaeologists. The documentary record is insufficiently old or comprehensive to indicate with certainty that there was a natural pond here before the mist pond was constructed.

### **Structure**

The present pond has the structure of a concrete lined mist pond. The square shape is very characteristic.

Within the 3 square miles surrounding this pond, shown on my fragment of the 1871 map, are 6 ponds of this form and construction, in addition to 6 'ancient' ponds and 5 farm ponds associated with old farms.

The mist ponds are in areas previously lacking ponds, including new farms to which they are attached.

Mist pond is the correct term for what is popularly known as a dew pond. Those who made and used these ponds called them mist ponds. Antiquarians wrote them up as dew ponds.

3 of the 6 square mist ponds in the district lay on hilltops.

Yewhill Pond and 2 ponds at Pitt Farm lay on or near the valley floor.

Valley floor locations mean that ponds fed by groundwater (natural ponds), or clay lined ponds could have preceded the mist ponds here. The two ponds at Pitt Farm were likely to be new because the farm was new- in the sense of an old farm rebuilt. An earlier pond at the Yewhill Farm crossroads may have gone dry or otherwise become unsatisfactory.

Mist ponds work by condensing water out of the air in addition to holding any precipitation that falls. Calling them dew ponds is technically inaccurate because dew is condensation onto surfaces as a result of temperature differential and a surface onto which water can nucleate- and that is not how mist ponds are considered to work.

There was for a long time doubt- amongst those writing up these ponds when most of them had gone out of use- that ponds would work in this fashion. That was in part because people expected ponds brim full of water. Mist ponds had only to accumulate enough water for livestock to drink. The stock was mostly sheep, with a small appetite for neat water: very seldom came- that can drink considerable amounts at a time. The largest demand for water would tend to be when livestock was being drifted from upland to lowland or to market. But since the drifting periods were in May and November, traditionally wetter periods, ponds would seldom have been taxed.

Mist ponds could be made of a variety of fabrics.

The early ones were 'clay' lined. Clay lining was shorthand for a sandwich up to 3 feet thick. Between clay top and bottom layers were intermediate layers of stone, vegetable fibre and neat lime, plus additives as plasticisers. The amount of clay concentrated in one spot made a cold mass within generally warmer soil and chalk rubble.

Given the amount of material involved, lining such a pond was not easy, and hence mist ponds were quite rare in the landscape.

This pond would have required on the order of 400 tonnes of lining materials if 'clay' lined.

Many of the 'natural' ponds on the chalk were human made but held water naturally because they lay on clay-with-flint drift deposits or some similar impermeable material. It was far easier to exploit such deposits to get a pond at the end of the extraction process.

The immense weight of lining material required for day lining urged the making of mist ponds from other materials, such as concrete, where the total weight of ingredients was lighter and easier to procure, and not likely to 'go off- as with clay. (You had to keep clay damp. This imparted a certain urgency to the lining process.)

In 1796, James Parker patented 'Roman cement', having 're-discovered' how the Romans made their cement. 'Portland' cement was patented by Aspdin in 1824, though only one of a number of cement formulae then being evolved. With no other connection to Portland than that the end product had the finished texture of Portland stone. The first bulk manufacture of Portland cement was at Swanscomb in 1845.

Concrete- made as a mix of cement, aggregate and water- was in general use from 1838. A number of inferior 'concretes' were around from earlier times, used as harling and screeds, but these would not have been up to making watertight ponds.

I am probably a bit out in my estimate of the establishment of this pond in concrete as a consequence. It would probably not have been concrete lined until near the mid 19<sup>th</sup> century.

But my documentary sources assure me there was a square pond on the same site in 1812. This pond was clearly artificial because of its shape, and must have been natural or clay lined. I would admit that it is unlikely it was a mortared pond or made of an local non-patented early concrete.

In any case, once concrete was used, the problem of it setting without stress cracks must have led to a period of experimentation before standard designs were formulated. Most of the Wessex mist ponds I have seen were constructed in slabs, with caulked and pitch joints to relieve stress and accommodate a degree of movement. The likelihood is that this pond was lined a number of times from 1812 to the present, one of those linings casing it in concrete perhaps 40 years after it was known to have been constructed.

At least one renewal of the lining of this pond is known.

A succession of re-linings could have led to the rather unusual internal profile the pond now appears to have, partially filling in the original profile.

Concrete ponds little amended usually have lips around the edge, ranging from steep to near vertical- made from shallow slabs set on edge. These were presumably to prevent material falling into the pond. The basin of the pond is made from slabs laid into the centre- usually four, tapering in width to the centre, and sloping downwards. Presumably to concentrate a depth of water at the centre, should there be only a small amount of water in the pond.

Mist ponds continued to be made until the Second World War. But by then livestock numbers, particularly of sheep, were in free-fall. They bottomed out in 1949. The need for mist ponds was probably at an end. Water troughs on mains supply and mobile water bowsers now suffice.

### **Summary**

The earliest evidence for a pond could be 1639, but to the west of the present site and slightly north. This would seem to be a natural pond and could indicate the end stages of a sequence of ponds within this part of the Pitt valley. There was no evidence of a watercourse at that time, though the location of the early pond could reflect as former water course.

There was a pond on the same site, and of the same shape by 1812. Maps by this time show that Port Lane has been pushed in from the bounds on which the parish boundary ran, though not all maps agree on there being buildings to the south of Millers Lane. Yewhill Farm was shown on the relevant tithe maps (1845), and also by the County Series OS map of 1871. As of 2009 the buildings on site correspond to the north range of the Farm exists, though under the name and form of Old Kennels Cottage and ancillary buildings.

The pond shown in 1812 is unlikely to have been concrete lined, though certainly a mist pond. Were the cottage or any of the buildings to be older than 1812, it is almost certain that the pond would originate from this date.

The concrete lining must correspond to one of the refurbishments of the pond, though such a refurbishment would have entailed draining the pond. Concrete may have been laid over the previous lining material, though this would have

involved some reshaping and cleaning out. But if the present pond is 9 feet deep or so at the centre, it seems improbable that an earlier clay lined pond would have been. An excavation of this depth would have cut through any previous lining. Almost the only natural feature that could have been lined to this depth would be a swallet hole. Church Pond in Blendworth is in excess of 12 feet deep (excavation made into material accumulated in the pond).

***Old Kennels Cottage, Old Kennels Lane, and the Old Kennels***

Kennel derives from the Norman French form of *chenil*, itself derived from the Latin *canis*, a dog.

Was this name much older in the landscape than it appears to be, there is a possibility of a derivation from the Middle English word *canel*, meaning channel- from which canal derives.

I am afraid that I have no trace of the kennels.

There is no doubt that kennels were established somewhere in the locality, but the date of establishment and location of the kennels is not known.

It is to be presumed that the kennels were for a pack of hunting dogs.

Hunting with dogs had been the sport of kings and aristocrats up until mediaeval time, though not the fine jacketed hunting to hounds of popular imagery. It had died out entirely by the 16<sup>th</sup> century- regarded as unfashionably brutal for renaissance monarchs and aristocrats.

Since there was no class of people without these scruples to replace the monarch and aristocrats, hunting with packs of dogs disappeared. Dogs were still used to hunt, but on the lines of lamping. And there were other forms of 'blood' sports.

Hunting to hounds was literally reinvented for the new landed gentry in the 18<sup>th</sup> century, along with country houses and parks around these houses great enough to hunt in. In the years since, those who maintain the sport have tried to create the impression that hunting was always there in the countryside and a sort of inalienable right of the country person- or at least of those persons who could afford to hunt to hounds.

I would presume that the hounds were those of the Hursley estate, one of the more prominent packs, but there may have been others in the locality.

If the kennels concerned were old before 1871, it is possible that Yewhill Farm may have originated in kennels. Kennels would have been unlikely before 1720. By 1790 the local downland was being broken up fast to increase arable acreage during the Napoleonic blockade, restricting the hunting landscape.

The kennel phase was clearly very temporary. Save for the cottage, and the lane, there were no field names, no other mark in the landscape. The lane was not anciently recorded as Old Kennels Lane, though no name for this section is given on any of the maps, the lane section being an unbounded track across For (Fore) Down.

Because the resurgence in hunting coincided with the development of mapmaking, amongst a class of people who commissioned maps and influenced the mapping process, maps made at the end of the 18th century froze into perpetuity names in use at the time. And thus the kennels were commemorated, where the people, the pond, the use of the land for centuries before, landscape features and practices that had vanished from the landscape but not from memory, were not.

As for unearthing the location and duration of the old kennels, I recommend the County Museum Service, a local historian or the tide deeds of the Cottage.