



Selborne Brickworks Environmental Management Plan (Draft)

This document comprises the plans for the management of all aspects of the environmental impact at Selborne Brickworks.

The current version contains much draft planning, which is largely inevitable until the plant is built. All drafts will be complete to the satisfaction of the directors and the relevant authority before the anaerobic digester is operated.

This plan is primarily focussed on the anaerobic digestion plant. The operation of the brickworks is covered by its existing PPC permit.

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ODOUR CONTROL

1. Odour could arise at the plant from one of three sources:
 - a. Leaks from the biogas collection system.
 - b. Leaks from the feedstock handling shed
 - c. Further decomposition of the digestate once has passed through the plant.
 - d. A leak of digestate into the lagoon, arising as a result of mechanical failure of the digester.
2. The **Biogas Collection System** collects the gas created by anaerobic digestion, the vast majority of which occurs in the anaerobic digester. A small amount is produced in the feedstock storage tanks, which is also collected by the same system. The pressure in this system is monitored in several sectors.
3. Any leak would manifest itself in a loss of pressure, which would be detected immediately.
4. The leak location would be established shortly thereafter. The leaking pipe would be isolated, repaired or replaced and brought back into service as soon as possible. An investigation into the cause of the failure would be conducted concurrently.
5. The **Feedstock Handling Shed** operates at negative pressure. Leaks are only likely if the bio-filter drive motor fails. This would be obvious from warning lights etc on the motor's control panel.
6. If the failure is due to a loss of power, operations will cease until alternative standby power is provided. If it is a case of motor failure, then operations will cease until the motor has been repaired or replaced.
7. In normal operation the only time that the feedstock building's under-pressure is potentially compromised is when the delivery door is opened to allow the entrance or exit of a vehicle. If the door mechanism fails then it can be lowered manually, restoring under-pressure. The fault can then be found and rectified.
8. **Further Decomposition of the Digestate** on site is highly unlikely, as all the digestate has been pasteurised, killing the bacteria that perform the decomposition. The liquid digestate is stored in a sealed tank. The solid is in a special shed. It will be removed from site regularly and frequently, going into the manure and slurry handling systems of the farms that provide manure.
9. Should there be a problem it will be with the solid digestate. If such a problem occurs the immediate solution is to remove the digestate to a farm – where such odours are common.
10. **Mechanical Failure of the Digester.** If digestate leaks into the lagoon, the pH of the lagoon will change. Lagoon pH will be monitored continuously. Initially the likelihood of generating significant odour is small as the leak will be massively diluted by the water in the lagoon.
11. Once the leak location is identified, the affected tanks will be emptied of digestate [through the existing pipework]. And sent to a feedstock storage tank. The digester will then be repaired and tested prior to being re-commissioned.



PEST CONTROL PLAN

12. The primary method of pest control is to prevent their access to the feedstock, which is tipped on the floor of the feedstock processing building. This will be achieved through:
 - a. Structural integrity – the walls are steel and masonry.
 - b. Keeping doors shut.
 - c. Minimising the amount of feedstock on the floor and the quantity of time that it will be there.
13. The Structural integrity of the building walls, in particular below head height, will be checked weekly.
14. Doors will be kept shut, and fitted with self-closing devices. Their operation will be checked weekly. The doors also form a key part of the odour management plan.
15. In normal operation, food waste should be processed within a few hours of being tipped. Should this not be possible due to plant failure, the building will remain closed until the plant failure has been rectified. Further deliveries will not be accepted.

DETECTION

16. At the beginning of each working day a visual check of the feedstock handling area will be performed. This will be seeking evidence of the presence of pests.
17. Throughout the working day there will always be at least one worker in the feedstock handling area. He will, inter alia, be alert to the presence of pests. Should he spot any he will report these, and appropriate action be taken.

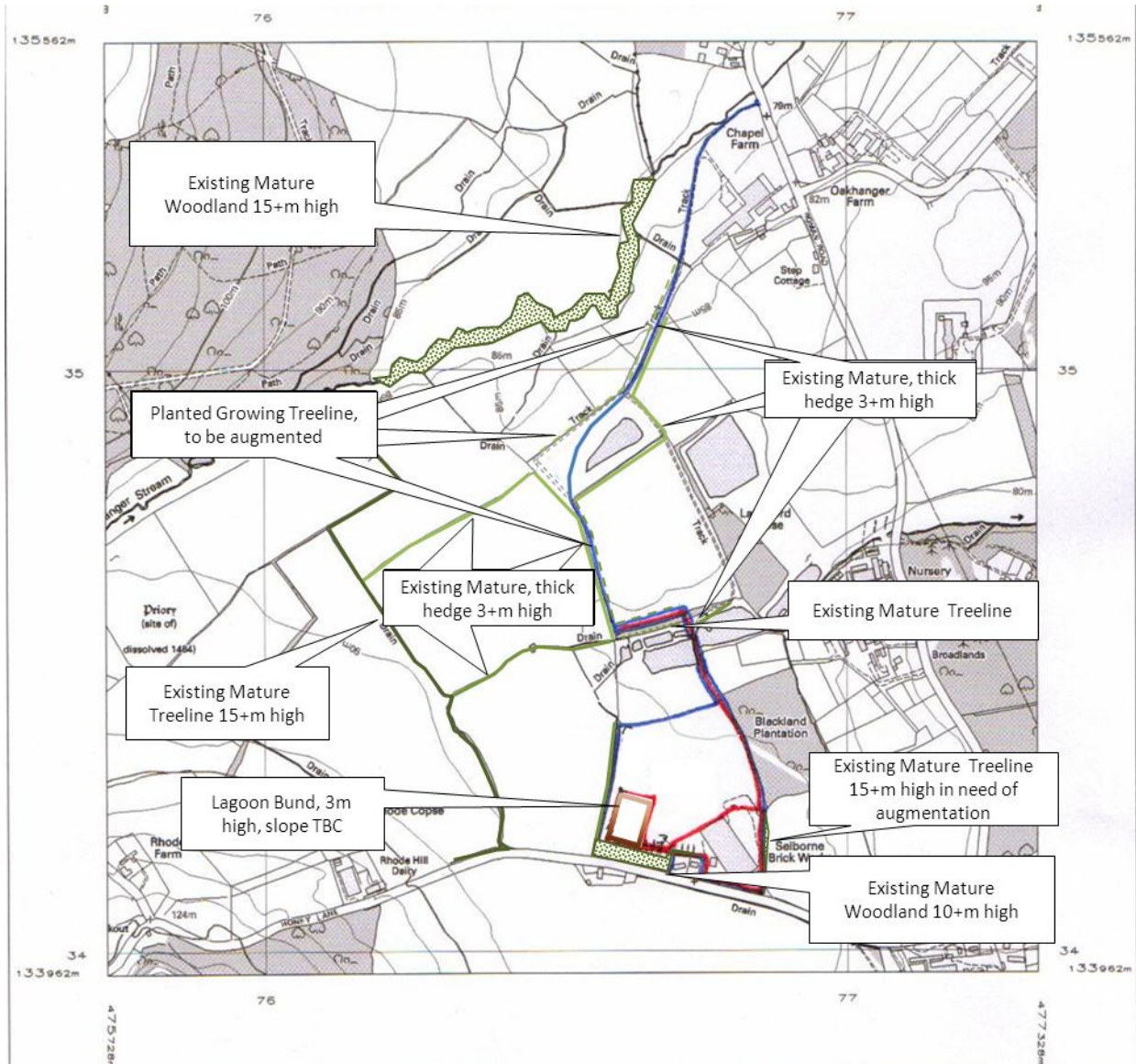
CONTROL

18. Should pests, or evidence of pests be seen appropriate action will be taken by contracted pest control consultants.
19. These consultants will also have produced the Pest Management Plan. This process will be started once site construction is under way, and will be completed before first operation of the plant.

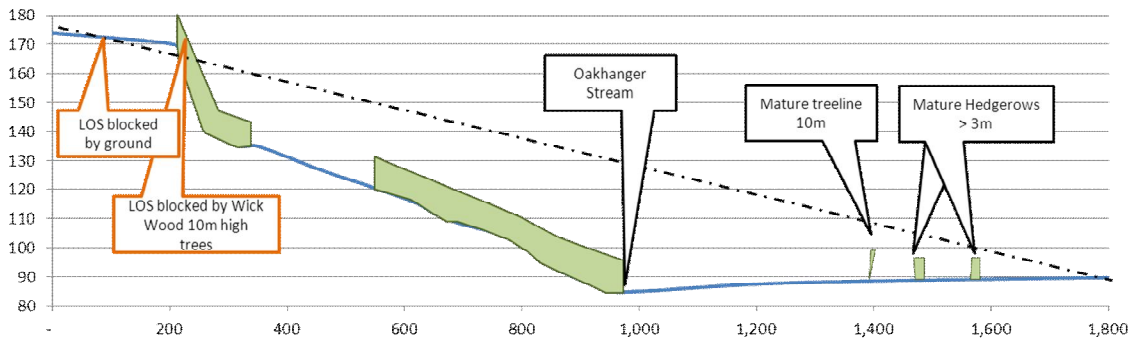


LANDSCAPING

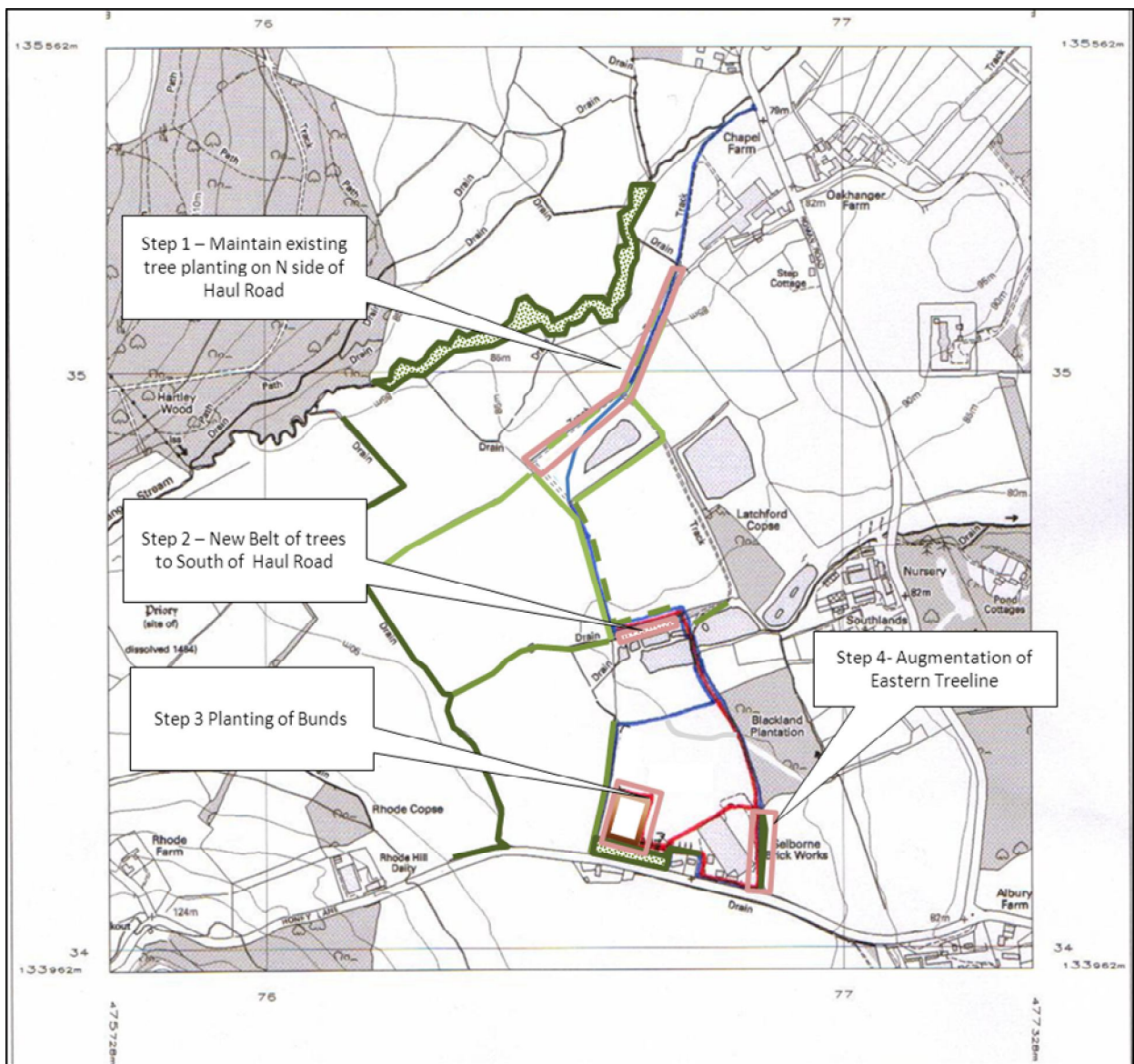
20. **Background.** This document outlines the steps that will be taken to landscape the digester installation and associated buildings in order to preserve habitat and minimise visual intrusion. Submissions have already been made on the visual intrusion, which identifies the major directions of concern as from the high ground to the North West, (i.e. the Hangars Way) and the land close to the East. Some landscaping work has already been started, as a part of the (granted) separate permission for the haul road. The current situation is shown below:



21. **Land Profile from the North West.** The diagrams below show the shape of the land from the Trig point on Wick Hill [grid 744357] to the lagoon location. As can be seen, there are no unobstructed lines of sight. Note that this is conservatively treating all the trees in Wick Wood as only 10m high.



22. **Proposed Mitigations.** The intention is to create a four step plan which will both preserve and improve habitat and further reduce visual intrusion of both the development and the existing works. The proposed work is illustrated below:





23. **Maintenance of the Existing Amelioration on the North Side of the Existing Haul Road.** The applicant will be responsible for maintenance of the haul road. Within this he will take on the responsibility of caring for the hedging planted on its north side. One metre whips were planted in 2008. This will comprise:
- d. **Visual Inspection.** Weekly. The state of the trees and planting will be inspected weekly as part of the inspection of the condition of the road. (In fact, an informal visual inspection will be performed daily, as the Haul Road lies on the applicant's route to work). The inspection will comprise:
 - i. **Tree condition** – visual assessment
 - ii. **Undergrowth** – visual assessment of whether undergrowth is harming trees
 - iii. **Fencing** – new plantings, if required, will be fenced using electric fencing to protect from livestock when they are grazing.
 - e. **Maintenance.** The maintenance will comprise:
 - i. **Undergrowth Control.** The undergrowth will be cut back regularly to prevent saplings from becoming overgrown for the first seven years since planting.
 - ii. **Fencing.** The integrity of the stock fencing (a combination of post and barbed wire on one side, and temporary electric on the other) will be maintained in conjunction with the farmer.
 - iii. **Watering.** Should there be a drought then the saplings will be watered regularly. This may be done in conjunction with field irrigation.
 - iv. **Replacement.** Any dead saplings will be replaced like for like, annually. If disease is suspected further advice will be sought.

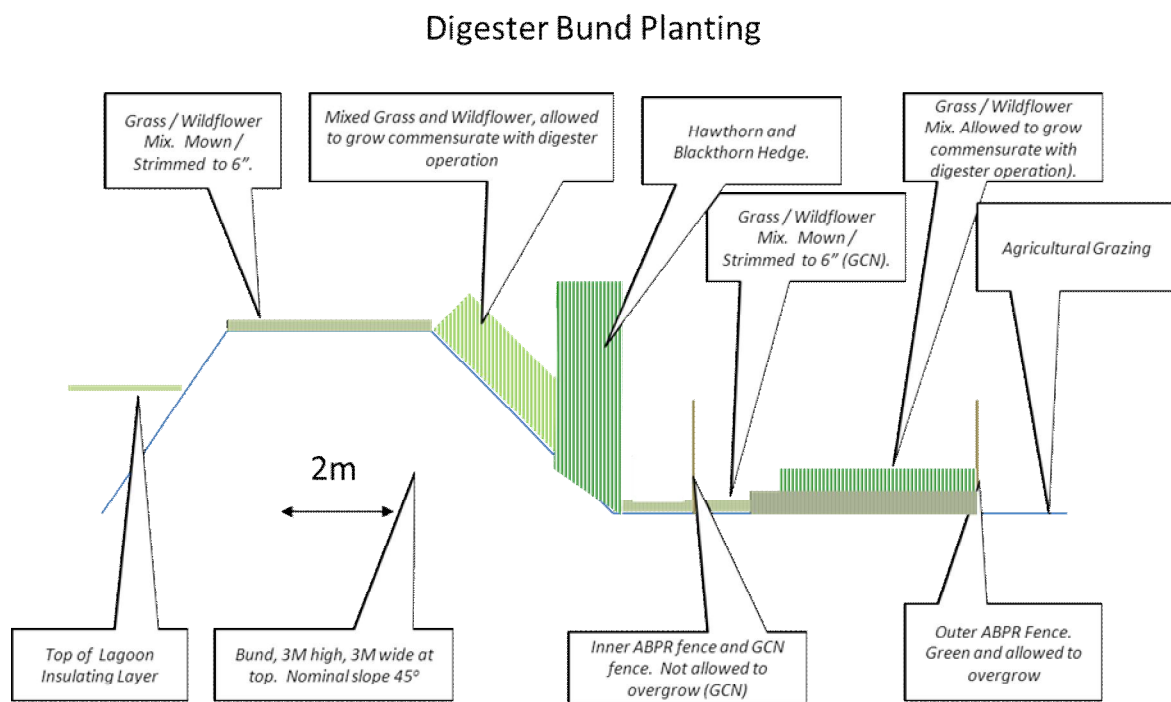
NEW PLANTINGS –PLEASE REFER TO ACCOMPANYING SELBORNE AD LANDSCAPE AND PLANTING MAP

24. **Planting One. A New Belt of Trees To the South of the New Haul Road.** A new plantation 130m long by 10m deep will be planted once the Haul Road extension has been completed. The precise details of the extent of this belt cannot be defined until the construction work has finished, and therefore the following numbers are indicative
- f. **Species.** Will comprise:
 - i. 42 Oak (*Quercus Robur*)
 - ii. 31 Ash (*Fraxinus Excelsior*)
 - iii. 31 Beech (*Fagus Sylvatica*)
 - g. **Density.** Trees will be planted at 3 m centres, in a staggered pattern.
 - h. **Planting.** Trees will be planted as 2m saplings. Planting shall take place in the close season, October to March, and not in times of frost or drought. Planting will be conducted after all road upgrading has been completed.
 - i. **Fencing and Protection.** The location is occasionally grazed by cattle. At such times the plantation shall be fenced with electric fencing. The 2m saplings are well enough established not to require deer / rabbit protection.



- j. **Soil Preparation.** The soil is currently well fertilised productive grassland. Saplings will be planted straight into it.
- k. **Maintenance.** The same schedule as for Step 1.
- l. **Replacement Planting.** Should any replacement be required, it will be *Fagus Sylvatica*.

25. **Planting Two – The Digester Bund.** The diagram below illustrates the likely profile of the bunds. Final detail on the angle of the slope cannot be provided until the geotechnical survey is complete. If necessary the Northern Bund, which is the most visible, can be smoothed at the cost of the less visible Southern one.



- m. **Planting.** The top and outside slope of the digester shall be planted with mixed grass and wildflowers, as will be the area between the outer fence and the base of the bund. The mix shall be Emorsgate EMI General Purpose Meadow Mix which is 80% grass, 20% wild flower, or similar approved. The planting shall be in the first September or March following completion of the excavation. The seed shall be sown at 5g/m² at a depth of 4 to 6 mm.
- n. **Hedging.** A hedge shall be planted at the base of the bund in the first planting season following completion of the excavation.
 - i. 160 No Blackthorn (*Prunus Spinosa*)
 - ii. 160 No Hawthorn (*Crataegus Monogyna*)
- o. **Spacing** – 1 m intervals.
- p. **Size.** The plants will be 1m whips. They shall be provided with rabbit guards, staked down with softwood stakes and earthed up at the base.
- q. **Fencing.** The digester lagoons will be fenced at the base of the bund, with two fences, 5m apart. This is a requirement of ABPR. The inner fence will include a CGN. The fences



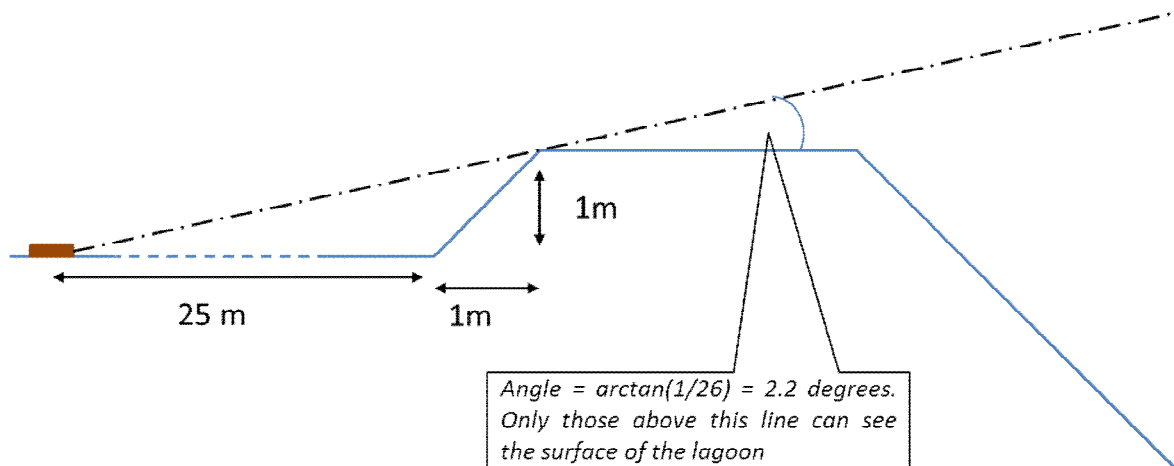
are 2m high. The lower 1m is mesh fencing, the upper 1m strands of barbed wire at 20cm spacing.

- r. **Maintenance.** The top of the bund will be mown or strimmed as required to allow operation of the digester. Similarly the inner fence will have a nominal 1m strip cut to 6" or less to maintain the integrity of the GCN fencing and to allow access. The rest of the inter-fence area will be allowed to grow, commensurate with maintaining the integrity of the fence. Outside the fence the field will eventually become agricultural [currently there is no grass ley there, and it is just self-seeded and grazed intermittently]. The sloped bank will be allowed to grow on, as will the hedging, although a clear path to the inside of the fence will be maintained.

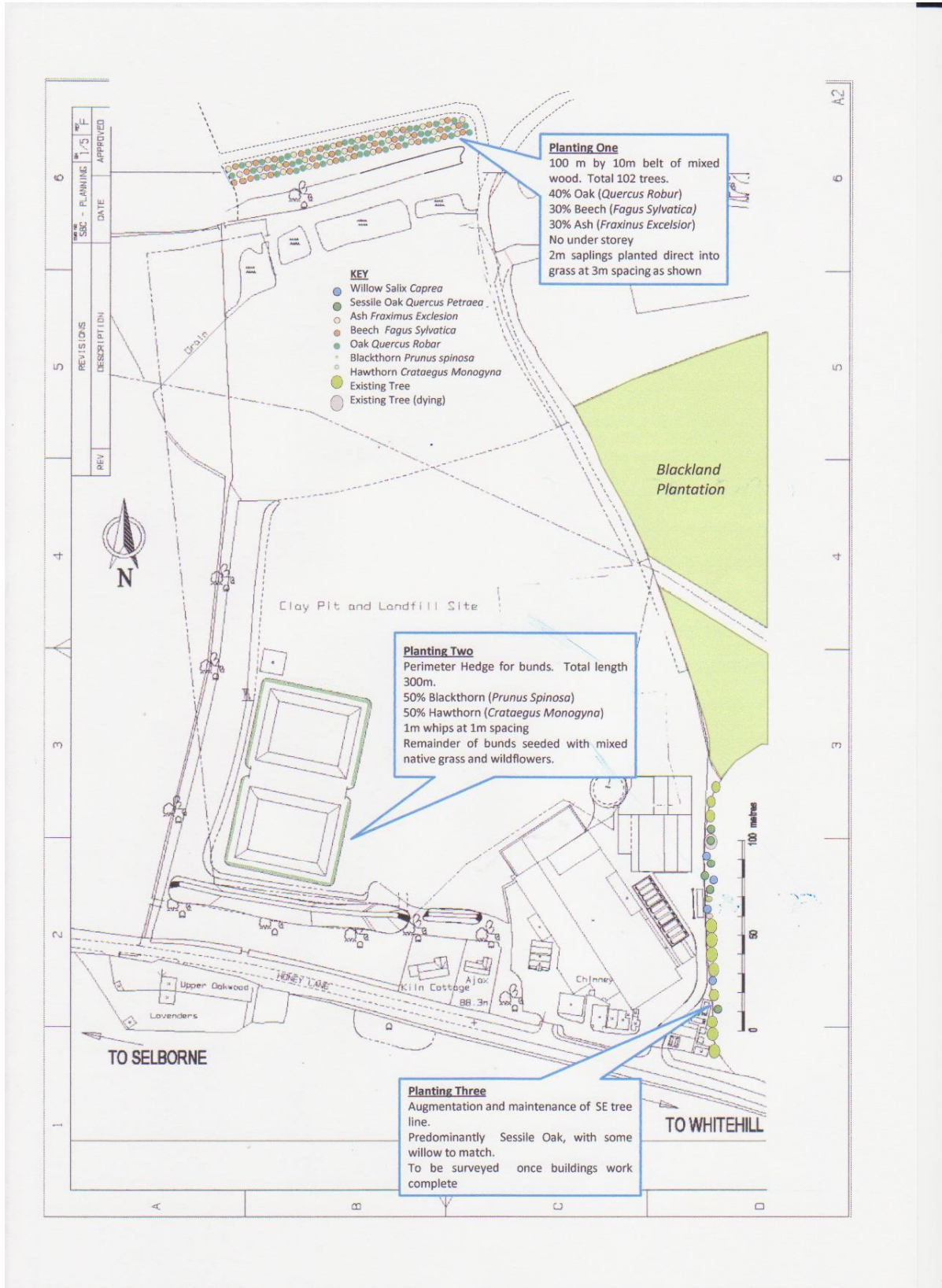
26. **Planting 3 – Enhancing the Belt of Woods to the East.** A thin row of Ash and Oak and Willow screen the site to the East, although other vegetation and the lie of the land block the view from any dwelling and most public rights of way. The trees, mostly Ash and Oak, are estimated to have a life of 5-10 years. .

- s. **Survey.** Upon completion of construction a survey of the tree line will be conducted. This will confirm numbers required and the condition of the existing trees.
- t. **Species.** The planting will be of 2m high saplings
 - i. 6 Sessile Oak (*Quercus petraea*)
 - ii. 3 Willow (*Salix Caprea*)
- u. **Spacing.** As shown on the attached map.
- v. **Fencing.** None. Saplings will be well enough established not to require rabbit or deer protection.
- w. **Maintenance.** The treeline will be observed monthly. In the close season, dead trees will be felled, and the resulting gap filled with replacement 2m saplings of similar species, planted at 3m intervals.

27. **The Lagoon Surface.** The lagoon surface will be covered in an insulating layer, much like a swimming pool cover – only more effective. The top coat of this will be a matt green coating, broadly similar to a shower matt. The digester tops will be brown GRP [or any other colour if required]. As the diagram below shows, even without planting, the bunds round the lagoon form a significant barrier blocking lines of sight. The surfaces will only be visible to locations that are above the 2.2 degree angle. This means at over 130m above sea level 1Km away, 170m at 2Km, 205m at 3Km and 245m at 4Km. Of course any such views will be degraded by any intervening foliage, and as the shrubs on the embankments increase in height and density, they will increase the angle.



28. **Summary.** The proposed planting will actually improve the ecology of the area, in as much as it will significantly increase the range and quality of habitats available to wildlife. 2,400m² of low quality habitat is being turned into a lagoon. This is augmented by:
- x. 1,280m² of grass / wildflower plantation on the lagoon bunds
 - y. 900m² of grass / wildflower plantation on the tops of the bunds
 - z. 1,500m² of grass / wildflower plantation between the fences
 - aa. 300m of new hedges.
 - bb. 1,300m² mixed woodland
29. The tree planting will also further diminish the minimal visual intrusion of the plant to current dwellings and public rights of way.
30. **Proposal Guidance.** This plan has been produced in accordance with *The Hampshire LANDSCAPE – a Strategy for the Future* printed by HCC in 2000. Species were selected from Appendix B to that document, using the guidance for land describes as “Pasture – Hangars Associated.”





NOISE

31. The brickworks operates under the following limits:

Operating Period	Noise Limit
07:00 to 23:00 (day time)	50dB L_{Aeq} or 5dB above background
23:00 to 07:00 (night time)	45dB L_{Aeq} or 5dB above background
	And 60Db L_{AMax}

32. Measured on the façade of adjoining buildings.

33. These limits will be changed to:

Operating Period	Noise Limit
07:00 to 23:00 (day time)	50dB L_{Aeq} when measured for an hour AND The L_{Aeq} (1 hour – plant operating) shall be no more than 5dB above the L_{Aeq} (1 hour – plant not operating)
23:00 to 07:00 (night time)	45dB L_{Aeq} when measured for a 5 minute period AND 60Db L_{AFMax} at any time AND The L_{Aeq} (5 minutes – plant operating) shall be no more than 5dB above the L_{Aeq} (1 hour – plant not operating)

34. The measuring point is now the site boundary.

35. The advice from Alan Saunders Associates, who performed the original noise survey, is that the brick plant will operate within the new limits, as it did within the old ones.

36. During commissioning noise measurements will be taken to ensure that the additional equipment being installed is sufficiently quiet to avoid a breach of the limits. If necessary additional sound insulation will be fitted to machines likely to cause a problem.

37. Explanatory note:

Measure	Explanation
dB(A)	The human ear is more susceptible to mid-frequency noise than the high and low frequencies. To take account of this when measuring noise, the 'A weighting scale is used so that the measured noise corresponds roughly to the overall level of noise that is discerned by the average human. It is also possible to calculate the 'A weighted noise level by applying certain corrections to an un-weighted spectrum. The measured or calculated 'A weighted noise level is known as the dB(A) level.
L_{eq}	The concept of <i>Leq</i> (equivalent continuous sound level) has up to recently been primarily used in assessing noise in industry but seems now to be finding use in defining many other types of noise such as aircraft noise, environmental noise and construction noise. <i>Leq</i> is defined as a notional steady sound level which, over a stated period of time, would contain the same amount of acoustical energy as the actual, fluctuating sound measured over that period (e.g. 8 hour, 1 hour, etc). The use of digital technology in sound level meters now makes the measurement of <i>Leq</i> very straightforward.
L_{max}	Because <i>Leq</i> is effectively a summation of a number of noise events, it does not in itself limit the magnitude of any individual event, and this is frequently used in conjunction with an absolute noise limit. <i>Lmax</i> is the maximum sound pressure level recorded over the period stated. <i>Lmax</i> is sometimes used in assessing environmental noise where occasional loud noises occur, which may have



	little effect on the Leq noise level
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38. X

DUST

39. There are two potential sources of dust, brick making operations and vehicle movement on the haul road.

Brick Making

- 40. Dust arises primarily from the movement of forklifts disturbing sand and dried clay particles.
- 41. There have been no complaints about dust since 2006, and possibly well before then.
- 42. The best treatment in cleanliness, and regular sweeping of the factory floor. This has worked well in the past.

Haul Road Traffic

- 43. It is conceivable that in dry periods traffic on the haul road will create dust.
- 44. This should not affect any neighbouring property, particularly as the hedging grows. It might affect walkers, although of course not at the weekends, which is when the majority of walkers use the paths.
- 45. The haul road will be finished in shavings, which are a low dust material
- 46. A speed limit of 15mph will be applied and enforced.
- 47. In extremis, if dust does become a problem, water will be sprayed onto the road.



LIGHT

48. The works produces no significant light at the moment, and none is planned as part of the conversion to Bio-Methane
49. The flare is shrouded, and as biogas burns cleanly in any event, it will not produce light.