Thames Farm Action Group

Representations re: Amended Planning Applications P24/S2642/FUL, P24/S2652/S73, P24/S2651/DIS Submitted 09/01/2025

A disaster waiting to happen?

Representations re: Amended Planning Applications P24/S2642/FUL, P24/S2652/S73, P24/S2651/DIS Submitted 09/01/2025

1. **Summary**

- These Planning Applications, arise solely because of Taylor Wimpey's desire to develop c 95 or slightly less houses on an unsuitable site, that requires the Applicant to undertake very costly, and, potentially very dangerous/risky groundworks, before they are able to develop the site with houses.

- There is NO extant Planning Permission permitting these groundworks to be undertaken, hence SODC is completely free and unfettered to find that the proposed risks involved in carrying out these groundworks, and the consequential surface water drainage scheme (driven by the application for consent to grout the site), outweigh the potential benefits by a very significant margin.

- The Environment Agency has objected to the proposals (dated 20 November 2024), and their grounds for objection have not been addressed. The SoS has required the application to contain an EIA, and this has not been produced

- The Applications should be rejected due to the unacceptable risk that the developer seeks to take with the entire regions potable water supply, and also with the local surface water drainage regime, consequent upon the proposed grouting works.

  Thames Water's web site refers to this region as comprising some 50,000 people.

- It is important to note that this region has no backup piped water supply unlike many other regions.
  The impacts upon this sole supply of potable water therefore, could be catastrophic!

- The Applicant provides no concrete evidence, only opinion, that it's proposals can be undertaken safely and without compromising the underground aquifer, or upsetting the current natural state of surface water flows in the immediate locality. The only conclusion we can come to, given the absence of such evidence/proof, is that it does not exist, or, that it does not prove the case! Why else would the Applicant not produce such evidence.

If it does not exist as we believe is the case, then this is a key issue that decision makers should understand at the point that a decision is to be made.

- The Applicant has produced a defective, and biased environmental statement, (it is not an Environmental Impact Assessment as required by the SoS).
  Despite an EIA, now being a requirement as part of it's proposals, the document submitted, fails to address all significant environmental impacts of its proposals.

- Moreover, the ES submitted, fails to consider alternatives. The applicant has doggedly pursued its original vision for development of this site, despite now being required to consider alternatives by the EIA legislation/statutory guidance. It has simply turned its back on the alternatives, no doubt because they are less profitable, and for no other reason whatsoever. In EIA terms this is wrong!

- The applicant fails to explore less invasive stabilization techniques or a much lower density of development that it could choose, to reduce risks to groundwater and flood safety. No alternative layouts or site density reductions are considered, despite the fact that this would dramatically reduce the environmental and other consequences of what after all, is a development in the rural countryside.

- The Applicant has failed to explore other development sites in the region, because, it has purchased this site. That is not sufficient reason to give the developer the right to ignore other less intrusive, or risky development options elsewhere, when analysing matters for the purpose of an EIA. An EIA is there to ensure that alternatives are considered, irrespective of how well or badly they may suit the Applicant. A similar example of an applicant's failure to consider alternatives, including completely different development sites is referred to in the Nocton Dairies case (v. North Kesteven District Council) 2011/12

- This developer has a disastrous track record of negatively impacting locations with its schemes, particularly with flooding and surface water discharge problems; and then walking away, leaving others to sort out the problems it has created.

- The developer has caused numerous problems already, with its works to Reading Road, including that of regular flooding, and the inundation of nearby residents properties. Four years later, it has failed to achieve

'sign off' of its works or to satisfy OCC's roads and drainage departments that the works may be signed off as complete and acceptable. Even in January 2025, OCC were carrying out works to try and rectify the problems caused; and, it is notable that it is OCC, not Taylor Wimpey doing this.

2. **Summary of Findings of JBA Technical Note – 'Review of Drainage and Hydrogeological Impacts Feb 2025 v2.**

A copy of this report can be found at Appendix 1 of this document, and below is set out (verbatim) its summary findings:

Start of extract

"....Conclusions

5.1 Hydrogeological impacts

The revised documentation submitted in January 2025 significantly reduces the risk of contamination of the aquifer, by removal of Pulverised Fuel Ash (PFA) and additives to the concrete within the grouting mix. However, concerns remain regarding the proposal to maintain a minimum of 1m between the bottom of the grouting and the water table, due tothe absence of long-term groundwater monitoring to demonstrate fluctuations due to seasonality and to pumped abstractions at the public water supply borehole. Consequently,the applicant has not adequately demonstrated that disturbance to the aquifer can be avoided. The proposal does not, therefore, meet the requirements of the Environment Agency Groundwater Protection Principles and Practices position N8 for work within an SPZ1. Ultimately, responsibility lies with the Environment Agency to regulate these activities through the Environmental Permitting Regulations 2016. It would therefore be recommended that planning permission should be conditional upon confirmation from theEnvironment Agency that either they consider that permitting is not required for the proposed works, or that works must not proceed until such a permit has been issued.

5.2 Drainage strategy

The December 2024 Flood Risk Appraisal and Drainage Study remains some way from adequately demonstrating that the drainage strategy is appropriate, in line with planning policies

and design good practice, and that it will not increase flood risk. Particular attention is drawn to the following points:

- The reliance on pumping to a high-level infiltration basin on the west side of thesite makes this a carbon-intensive design. If adopted, the high operating costs would be passed on to water company bill payers or council taxpayers.
- Several design issues are highlighted by the drainage model, including velocitiesbelow the self-cleansing velocity for pipes, 30 Hydrobrake controls below the recommended minimum orifice diameter, and steep (1 in 3) side slopes on the basins.
- Exceedance scenarios have not been considered for blockages and for a failure of the upper basin to infiltrate at the stated rate. The consequence of a failure of thisupper basin would potentially be very serious, given that it lies at the upper part of the site, so any water which overtopped would be expected to run through the site. This risk should be assessed and accounted for in the drainage design, site layout and finished floor levels.
- The infiltration rate applied to the upper basin needs to be reassessed if compaction and/or grouting works are planned within the basin's footprint. The latest design does not account for any potential loss of infiltration capacity as a result of compaction and/or grouting. The surface water drainage of the whole siterelies upon the ability of this basin to effectively infiltrate.
- Conversely, it is not clear whether the deep-seated void identified in the area of the upper basin has been fully investigated and will be stabilised, and whether therisk of collapse beneath the basin due to high ground loading and scour of voids has been adequately considered. Consequently the long-term stability and safety of this basin, through which the entire site’s surface water drainage will pass, has not been demonstrated.
- The result of the 'Groundwater Risk Screening', a risk screening approach requiredby the EA for medium hazard sites as described in CIRIA SuDS manual, based on the submitted data, was equal to 245, which

estimates the groundwater risk of thespecific infiltration basin is 'High', requiring a detailed risk assessment and potentially an environmental permit to discharge. Such an assessment has not been submitted.

The applicant does not provide both a realistic assessment of the risk to the water supply or a proposed development commensurate with the constraints of the site. Theproposed development remains therefore unsympathetic to the nature of the site, the local area and its designation as an Inner Source Protection Zone (SPZ1)….."

End of extract

JBA has also undertaken the application of a risk screening analysis, alarmingly in default of one that should have been prepared by the developer, which is shown on pages 10 and 11 of their Technical note.

Its findings are:

TABLE 26.5 Risk matrix (from Highways Agency, 2009, after Scott Wilson, 2010)

Risk element (RE)		Risk score (RS)			Weighting factor (WF)
Element number	Element description	Low risk (score 1)	Medium risk (score 2)	High risk (score 3)	
1	Pollution hazard Traffic density	All standard urban land use types (excluding high hazard and trunk roads/motorways)			15
2	Standard Average Annual Rainfall depth	< 740 mm	740–1060 mm	> 1060 mm	15
3	Type of SuDS	Continuous unlined linear collection and conveyance components (eg filter strips, swales)	Shallow soakaway (eg infiltration basin/ trench, permeable pavement) draining < 5000 m2 runoff area		15
4	Unsaturated zone depth (ie depth of between infiltration surface and groundwater table)	> 15 m	5–15 m	1– 5 m	20
5	Predominant flow type through soils between infiltration surface and groundwater	Intergranular flow (occurs in unconsolidated or non-fractured consolidated deposits and fine or medium sands)	Mixed fracture and intergranular flow (occurs in fractured consolidated deposits and medium or coarse sands)	Fractured flow (occurs in heavily consolidated sedimentary deposits, igneous and metamorphic rocks and very coarse sands)	20
6	Unsaturated zone material: clay content	> 15% clay	1–15% clay	< 1% clay	5
7	Unsaturated zone organic carbon content: soil organic matter (SOM) content	> 15% SOM	1–15% SOM	< 1% SOM	5
8	Unsaturated zone material: soil pH	> 8	5–8	< 5	5

TABLE 26.6 How to interpret the groundwater risk screening results

Total risk score	Risks to groundwater	Interpretation
< 180	Low or medium	Use simple index approach Note: For discharges to protected groundwater bodies, implement an upstream treatment component that will provide groundwater protection in the event of an unexpected pollution event or poor system performance
180–250	High	Discharges may require an environmental licence or permit. Obtain pre-permitting advice first from the environmental regulator. Risk assessment likely to be required
> 250	Very high	Unacceptable

Table 4-1: Groundwater risk screening matrix

Element Number	Risk Score (RS)	Weighing Factor (WF)	RSxWF	Comments
1	1	15	15	In the current drainage statement (A253-R001 Drainage Statement v17.pdf) figure 9, 'Medium pollution hazard level' - 'Commercial yard, parking with frequent change, other roads' Land Use is referred.
2	2	15	30	SAAR above 740mm (specifically 757 mm).
3	3	15	45	Attenuation basin with infiltration blanket sitting in an area of deep voided ground in the chalk and shallow relaxed ground.
4	3	20	60	Hydrogeological Impact Assessment December 2024.pdf, Appendix C, Figure 1
5	3	20	60	Fractured flow.
6	2	5	10	<1% clay as we refer to chalk.
7	3	5	15	<1% SOM as we refer to chalk.
8	2	5	10	4072A - Thames Poultry Farm geotech rev4.docx, section 4.40, ".. the pH values were sufficiently near to neutral.."
Total:			**245**	

The Conclusions from this analysis are:

"…We note that the score is close to being unacceptable, so there should be an onus on the applicant to further assess any risk posed by this discharge route to the aquifer and public water supply. We recommend that a detailed risk assessment, as describedin the CIRIA SuDS manual (26.7.3 Detailed Risk Assessment, pages 573-574) should be undertaken to provide quantitative findings for the said risk. The current HIA does not

assess the risk of infiltration from the SuDS to the water supply and only deals with risks from the grouting operations…."

3. **Other Hydrogeological Issues**

a. The (HIA) asserts that risks to the public water supply (PWS) are negligible. However, the analysis itself reveals critical flaws, meaning that in essence, the applicant simply does not know. No attempt has been made to provide specific quantative or qualative evidence of the likely impacts.

b. The HIA acknowledges the presence of voids and fractures in both unstructured and structured Chalk, and which could act as conduits for grout migration. Despite these admissions, the document downplays the likelihood of grout or turbidity reaching the PWS. They state this as a matter of unsupported opinion only with no supporting evidence.

c. While the HIA claims turbidity will not occur, it concedes uncertainty regarding whether grouting could generate suspended particles. This undermines the conclusion of "negligible risk" to groundwater quality. Again, no proof of opinion or supporting research/evidence is provided

d. A 50 m grout exclusion zone is insufficient given the stated proximity (130m) to the Harpsden Water Treatment Works and the unpredictability of groundwater flow in fractured Chalk.
NB. In any event, the stated distance of 130m to the works (without reference to the starting point) is patently inaccurate. A figure of half would be more accurate.

e. If there is to be a 50m exclusion zone, surely this should also work vertically as well as horizontally. The applicants own consultants acknowledge and indeed suggests such a zone, so what is the reason for this not applying vertically? Both vertical and horizontal planes occour underground in dense soils, so there is no logical reason for any distinction

f. Groundwater levels are inconsistently reported, with depths, ranging from 0.5–5m in some areas and 12–22m in others. These discrepancies undermine the reliability of the entire groundwater model.

g. The Flood Risk Assessment (FRA) and associated drainage strategy are riddled with contradictions and misrepresentations

h. The surface water drainage strategy relies on an assumed infiltration rate of 1.52×10^{-5} m/s, while earlier tests showed significantly lower

rates, as low as 4.71×10^{-7} m/s. This discrepancy raises major doubts about the feasibility of the drainage strategy. The 1:3 side slopes, and the existence of poor ground beneath the proposed detention pond also undermine this strategy and its safety/efficacy

i. The critical storm storage requirement is estimated at 4012 m^3, but the proposed bunds provide minimal freeboard. This leaves the system vulnerable to overtopping during extreme or successive rainfall events, and thus localised flooding of properties and roads

j. Reading Road already floods on a regular basis since the developer has undertaken its road widening realignment relevelling and surfacing works. OCC know this and have over the last 4 years taken action and undertaken improvement works as recently as January 2025 to alleviate this.

k. The Applicants proposals in relation to short term mitigation of flooding, and long term revisions to ensure no significant effects from the altered ground conditions are therefore once again not acceptable and are simply making vague promises of future unknown actions should the need arise.

l. As the applicant has failed to rectify problems in the last 4 years, this proposed approach is simply not acceptable again. This applicant cannot be trusted to achieve such results. It must specify exactly what are its solutions, and undertake to do whatever is necessary, whenever it is necessary to achieve that solution. It cannot be permitted to simply do works and then walk away, as it has a history of doing, throughout the county and also nationally. The applicants proposals are as set out below, and are weak promises, which SODC does not have the resources to police and secure action over.

Controls to Protect the Environment

3.283.29 The environmental controls (or mitigation measures) to eliminate, reduce or offset likely significant adverse effects on the environment are identified below. It is anticipated that these controls will be secured by appropriately worded planning conditions or obligations:

- Implementation of a Construction Management Plan (CMP), which would consolidate the various mitigation measures identified in this ES and would be agreed with SODC and relevant statutory bodies. The CMP will be secured by an appropriately worded planning condition;
- Requirement to comply with the CMP included as part of the contract conditions for each element of the Works. All contractors tendering for work will be required to demonstrate that their proposals can comply with the content of the CMP and any conditions or obligations secured through the planning permission;
- In respect of necessary departures from the above, procedures for prior notification to SODC, as appropriate, and affected parties will be established;
- Establishing a dedicated point of contact and assigning responsibility to deal with construction related issues if they arise. This will be a named representative from the construction team; and
- Regular dialogue with SODC and the local community.

These promises are meaningless attempts to satisfy and pacify objectors and the LPA. Actions, and a history of in-action, by this developer, cannot be permitted to continue, nor can the use of defective and incomplete/inadequate due diligence information

m. The temporary drainage measures during grouting operations rely on bunds and conveyance systems, which are unlikely to handle sudden surges in runoff. It is essential that greater detail of design parameters is provided.
Again meaningless promises as below are not sufficient

Drainage

3.273.28 Temporary drainage infrastructure will be installed to manage and regulate surface water run-off during the Works. To ensure that the Works does not have any adverse off-site impacts or increase flood risk elsewhere, surface water will be managed and disposed of using sustainable drainage system (SuDS) techniques. The drainage solution for the consented residential development will be amended via a revised section 73 application to ensure no significant effects from the altered ground conditions.

n. The HIA seeks to emphasize the safety of grouting operations. However, it omits to mention examples of success, or nor does it even try to quantify key risks. Playing ‘fast and loose’ in this way when the consequences could be disastrous is unacceptable

o. The injection of grout in karstic chalk is inherently unpredictable due to the presence of voids and fractures. This after all is the entire purpose of grouting, however stopping the grout spreading through those same voids and fractures is hardly mentioned at all. The report minimizes these risks by focusing on idealized scenarios, ignoring historical failures in similar geological conditions, and providing no evidential proof of performance. It is quite illuminating that the applicant brings forwards absolutely no evidence apart from its opinion as to the robust nature of

such measures in this specific and very unusual environment! The quote from their report confirms the lack of supporting evidence.
It is notable also that Stantec are paid for by Taylor Wimpey, however they are only liable to Taylor Wimpey for errors and omissions. It is hard to imagine, that its views are therefore not biased.

Assessment Methodology

Technical Scope

5.4 The technical scope of the assessment has considered the following, based on professional judgement, the consultation responses and risks identified in the various investigation reports:

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p. The temporary drainage system may allow contaminants, including grout particles and sediment, to enter run-off. Mitigation measures, such as geotextile filtration, are insufficient to address this risk.

q. The proposed monitoring measures (only now included for the first time) aim to detect issues after they occur, rather than preventing them. This approach is insufficient and unacceptable for protecting highly sensitive groundwater resources and human receptors.

Scale of Effect Criteria

5.10 Impacts have been assessed on the basis of the value/sensitivity of receptors against the magnitude of impact to determine the scale of effect as presented in **Table 5.3**.

Table 5.3: Significance Criteria

Magnitude	Sensitivity of Receptors		
	Low	Medium	High
Very Low	None	None	Negligible
Low	None	Negligible	Minor
Medium	Negligible	Minor	Moderate
High	Minor	Moderate	Major

5.11 Based on professional judgement, moderate and major effects are considered significant in EIA terms.

r. Grouting on this scale could, and indeed is more likely to than not, to alter the natural hydrodynamics of the chalk aquifer, potentially redirecting groundwater flow and increasing flood risks in neighbouring areas.

In contrast, the National Planning Policy Framework, December 2024 says:-

187. “Planning policies and decisions should contribute to and enhance the natural and local environment by e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land

instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans"

There can be no reasonable doubt, that this development will NOT enhance the natural environment, and, it will contribute to the environment being put at unacceptable risk from being adversely affected by, unacceptable levels of soil, air, water, noise pollution or land instability

Future Baseline

5.32 In the absence of the Works the baseline condition of the Site would remain largely unchanged. However, over extended periods of time it is likely that the solution features at the Site will worsen, with collapse of the ground surface likely at random, unpredictable intervals. Collapse may also be likely in the short term following significant rainfall events.

4. General Environmental Impacts

a. As previously stated, the applicant's submissions down play the broader impacts of the proposed development and simply state that if this becomes problematic they will do something about it. This is a complete abrogation of responsibility and attempt to circumvent the requirement that now exists for a comprehensive risk based Environmental Impact Assessment to assess the likely situation and to do something about it in advance if necessary. 'On the hoof' possibilities for mitigation again are not acceptable and no doubt would not occour or occour inadequately. An EIA should identify the impacts and address them at this stage.

b. The Environmental Statement minimizes the effects of prolonged noise, vibration, and traffic from construction activities, which will significantly disrupt the Shiplake community for at least eight months. This will be followed by a further 2 years of disruption during the build out phases hence an aggregation of on-going disturbances. An EIA's should fully highlight and reflect and address aggregation factors.
Had the original application for development on this site fully explored the sites problems, the entire development and not just the groundworks, would no doubt have been required to produce an EIA statement

c. The site lies within an Air Quality Management Area, however the Applicant simply dismisses without adequate reason this factor, and makes no attempt at proposing monitoring, base line calculations, assessment of impacts of the very significant quantity of HGV movements that it proposes.

d. The Applicants Traffic Assessment is deficient and arrives at an incorrect answer (relating to a single time comparison in June 2024). It refers to the increases in HGV volumes as negligible. 52 movements every day is not negligible, and no account has been taken of peak time increases in flows nor other season impacts and consequences. Equally, site workers will not travel by the very limited means of public transport (hourly bus service) nor can they carry equipment and the like on a bus service.

5.C ompliance with Policy

The applicant claims compliance with planning policies, environmental guidance and statute etc, but key gaps remain, risk analysis in particular, Sequential and Exception Tests: Despite the site's location in a SPZ1, the FRA **dismisses the need for these tests, contravening national planning policy guidelines and other EA guidance.**

6. Claims and Omissions

The reports contain several unsubstantiated or misleading assertions: "Negligible Risk" Statements: Risks to groundwater and flood safety are repeatedly described as negligible despite significant data gaps, risk analysis gaps and uncertainties regarding turbidity, grout migration, and infiltration capacity as detailed above.

7. The Purpose of an EIA?

When an EIA is to be produced - as a mandatory requirement for a development proposal, it is required because there are major concerns that the proposal may cause harm to the environment and any of a number of nearby 'receptors' that may be impacted by the proposals. The threshold for requiring such an assessment is therefore quite high, in order to avoid unnecessary delay and expense in the approval process; and, to avoid delaying smaller developments where harm is clearly not going to arise, but also, where there is no RISK of causing such harm.

What is patently clear, is that the entire purpose of producing an EIA is to place the onus of proof of safety, onto the Applicant, and not upon the LPA and its consultees. They are in place to check the accuracy and voracity of the Applicants submissions.

The Government in the form of the Secretary for State, has determined that this proposal is required to prepare such an assessment, despite the stringent

efforts of the applicant to avoid preparing one, and countless arguments specifying that one is not necessary or that issues are 'out of scope.'

Since acquiring this site, the owner Taylor Wimpey has implemented a strategy to avoid (almost at all cost), submitting a planning application for its proposed 'remediation' of the ground conditions, and also therefore to avoid the preparation of a comprehensive EIA.

One's initial reaction to this approach, is why? If the proposal is patently safe and will not put the environment and receptors at risk of harm, why spend countless thousands of £'s and many years of delay (outline consent was in 2018) in doing this? What is the concern and what is there to hide? Now that the applicant has finally submitted these Applications, it is clear that they recognised that there was a huge risk of a refusal, notwithstanding that the site had been purchased at full development value.

8. **The current amendments to the August 2024 Applications submitted on 9 January 2025.**

The applicant states that the Applications should be dealt with in a specific sequence. This is because there are contingencies in the Applications, where one is contingent upon the outcome if approved, of another, and thus any conditions (if attached) upon others.

In our view, that means, that in fact the DIS and S73 Applications are premature and defective. In short they should not have been registered when submitted but instead rejected as being premature, and incapable of proper consideration and determination at that time or in that format.

The LPA however, states that its intention is to consider all 3 Applications at the same time.

It is hard to understand how this can take place, given that additional requirements and conditions may be imposed by the LPA or be required by the Statutory Consultees.

We believe therefore that there are grounds to challenge this decision, and would urge the LPA to think again, and reconsider its position.

9. **An opportunity to think again!**

Taylor Wimpey purchased this site with the benefit of its outline Planning Permission, and assumed, wrongly, that the site had normal ground conditions. Nothing could be further from reality as the many years of subsequent debate and uncertainty demonstrate, and also do the extreme

measures that the applicant has gone to, to avoid full disclosure and the full and proper consideration of its intentions and proposals.

Thames Farm is not by any stretch of the imagination, a 'normal' residential development site, displaying the normal characteristics of such a site - far from it.

The site is unsuitable for use as a medium density residential development site.

Had the nature of the ground conditions been known, it is highly likely that the OPP would not have been granted by the Secretary of State at Appeal

When the 'base' Planning Application was referred to the Planning Inspectorate for approval of an OPP, the Inspectorate, the LPA, and the other consultees all considered the matter in ignorance of the underlying ground conditions.

As such, what was clearly a finely balanced decision which ultimately hinged upon whether SODC had met its housing targets over the prior years (by a matter of as little as one or two units) became the 'swing' factor upon which the Inspector decided to make his decision, by ignoring the Local plan and the wishes of SODC, the local Councils and local residents.

In essence the Planning Inspectorate were handed the (incomplete) information they needed to grant permission, and at the time, there was no compelling reasons to not approve the development, despite it being 'unallocated' land that had been rejected for development by SODC on many prior occasions over very many prior years.

The site was granted outline consent, and was subjected to a whole raft of conditions to safeguard against the lack of full information about the site. Despite these conditions, the developer was later permitted to undertake works, that effectively gave them the right to build 95 houses.

Under the above highly unusual circumstances, and with the huge risk to which the developer is proposing to both the entire regions drinking water supply and the local surface water drainage regime, **it is absolutely for the developer, to provide cast iron and categoric proof that its proposals will do no harm to either.**

Opinion and speculation are not sufficient, nor are statements that 'we think the risk is low'; nowhere has the applicant nor their advisors provided cast iron proof that their 'opinions' are fully supported by evidence based material eg.

- case studies where the site of an aquifer has in fact been grouted to such depths; materials testing examples showing that the 'mix' does not in fact move under pressure underground by more than a few millimetres?

- a specific action plan to actually address an escape of the material into the aquifer.

- an action plan to address any failure in the SW discharge design/strategy/built situation.

- modelling of the underground flow patterns to demonstrate their not being impacted or diverted by the mass pumping of tens of thousands of tonnes of underground material at 6m centres, across, as the applicants advisors says…. "the majority of the site".

These Applications provide an opportunity for the regulatory bodies to think again, and if they agree with us to reject these harmful and risky proposals!

It is not for the LPA, its consultees, statutory or otherwise, to prove the case. It is entirely for the applicant to do so; and, with such important risk factors, this must be in a robust and evidence based fashion. Otherwise, the risk to drinking water and the local hydrogeology are <u>too great a risk</u> to/for the local environment and population.

Taylor Wimpey submitted its screening Application for EIA purposes. It was then not prepared to wait for a decision from the LPA and asked the SoS for a determination, despite the LPA being unable to determine the application due to inadequate feedback from the EA. Again the developer has tried to avoid full and proper scrutiny.

They subsequently submitted their application for Planning Permission for the proposed groundworks, and submitted with it what they described as an ES purporting to be a 'precautionary' statement in case they were later asked to submit an EIA.

The submitted statement does its best to argue against the need for Environmental investigations by essentially 'minimising' and 'playing down' the items that it believes might have a significant adverse impact.

That approach was/is clearly woefully deficient and unrealistic. Now that the SoS, has determined that a comprehensive EIA is indeed required, the ES submitted is therefore invalid and a full scoping assessment should be undertaken between the Applicant and the LPA. We have seen no evidence to

suggest that this has happened, and as such the Applicants ES is meaningless and prepared in a vacuum. For the main part, the current version shows no changes in a number of key environmental areas compared to the original.

For the Applicant to say in Stantec's Technical Note (ref. 332610422*, (9th January 2025) that refers to noise and vibration that:

"An Environmental Statement (ES) has been produced which sets out the environmental impacts. The ES concludes that there are no significant impacts as a result of the proposal." This is entirely misleading, since noise and vibration aren't covered in the ES and are scoped out!

Confusingly, a very similar document is submitted with the P24/S2651/DIS application that goes by the same ref 332610422. This version, however, provides the following response to the comments referring to noise and vibration:

"Please refer to the detailed consultee responses submitted on applications P24/S2642/FUL and P24/S2652/S73." This again, is misleading since detailed responses are not provided!

To resubmit that same documents with very little update / amendment in respect of the primary environmental issues is woefully inadequate and fails to satisfy the requirement of now producing a comprehensive EIA. It reflects the developers entire attitude to the impacts that it's proposals may have on local people and the local environment, and, as on previous occasions, leaves interested parties to 'drag' out of them, sufficient data and due diligence information to be able to determine the real underlying impacts and consequences.

The Applicant has not sought to address the genuine environmental concerns highlighted, and simply pays lip service to such issues with the following statement:-

Noise Mitigation

~~3.26~~3.27 The Works may give rise to noise. Where possible, plant and equipment utilised in construction works, will be deployed with suitable noise mitigation (if necessary) or specification (i.e. the quietest plant or construction method feasible).

The constant noise vibration and other effects from daily working over an initial period of 35 weeks (for the groundworks) and then potentially for a further 2 year period of phased construction works will be very significant, and have major impacts on local residents. To initially 'screen out' these effects in their earlier screening application is one thing, but to now seek to do the same when they have been specifically required to produce a comprehensive EIA is quite another.

10. Responsibility for damages, and our overall conclusions.

The developer fails to acknowledge that it may bring about disastrous consequences to this region and to local residents. There are no statements about what it will and can do if things do not pan out as predicted; what remedial actions might be taken, how would it make things right, and how will it compensate those affected.

It's advisors reports are designated as being for the benefit of the commissioning party only, without any responsibility taken or accepted for 3rd party damage/impacts.

There are major shortcomings in the applicants submissions, not least being the absence of the recommended risk based analysis, for which JBA has sought to provide answers/such analysis, clearly demonstrating that the risks in respect of this one measure/analysis alone are borderline to absolutely unacceptable. Taken together with the other uncertainties, inadequacy of data, holes in the data and a woefully deficient and biased assessment, there is really only one conclusion that can be reached. This is a cynical and inadequate approach to what is a hugely risky proposal, and the Applications should be rejected as such.

TFAG
26 February 2025

Appendix 1

JBA Technical Note
‘Review of updated evidence submitted in January 2025’

TECHNICAL NOTE

JBA Project Code	2023s1304
Contract	Thames Farm Planning Application
Client	Thames Farm Action Group
Date	February 2025
Author	Dimitrios Goukos, Benjamin Brière De L'Isle
Reviewer / Sign-off	Paul Eccleston
Subject	Review of updated evidence submitted in January 2025.

1 Introduction

A Planning Application (P24/S2642/FUL) was made to South Oxfordshire District Council (SODC) by Taylor Wimpey West London (TWWL) for engineering operations associated with ground stabilisation works (as amended by plans and information received 9 January 2025) to support the development of land at Thames Farm, Shiplake (RG9 3PH).

Updates to the planning application (P24/S2651/DIS) for the site drainage, the associated roads and landscape management and the planning application (P24/S2652/S73) relating to the proposed development layout were also submitted to SODC on 9 January 2025.

Thames Farm Action Group requested JBA (email dated 28/01/2025) to review the technical documents submitted as part of the above planning applications.

The proposed development has a long history of unsuccessful planning applications due to the hydrogeological sensitivity of the site, i.e. located within the Source Protection Zone 1 of the Harpsden Water Treatment Works, a set of public abstraction boreholes. The abstraction boreholes abstract unconfined groundwater from the local Chalk which is prone to dissolution features and the applicant requires ground stabilisation for some of the proposed planned infrastructures.

2 Documents reviewed

JBA reviewed documents submitted from September 2024 to January 2025 either as an update to previously submitted reports in relation to the "new" overall grouting and ground stabilisation strategy proposed as part of the planning applications above, and which is now subject of a wider Environmental Impact Assessment. The review also focused on the proposed water management strategy dealing with surface water and foul water management.

The objections raised for the previous drainage strategy submission (August 2024) are summarised in the 'Consultee Comments on Engineering Operations Associated with Ground Stabilisation Works' Table[1], focused on:

- Carbon-intensive approach - Objection Remains - Comment num. 19 PLUS Comment 26.
- Flaws of the drainage model - Objections Remain - Comment num. 18 PLUS Comment 25.
- Flawed rainfall boundary delineation/Assessment of offsite flows - Objection Dismissed after updated submissions - Comment num. 47.
- Failure modes and consequences - Objections Remain - Comment num. 47.
- Assessment of the infiltration rate used in the drainage system design - Objections Remain - Comment num. 49.

[1] 2025-01-09 Covering letter including applicant response to consultee comments & amended plans schedule.pdf

- Assessment of the basin sitting on top of a deep voided ground in the chalk and shallow relaxed ground - Objections Remain - Comment unnumbered, between Comment 24 and Comment 25, PLUS Comment 25, 27, 28, 35, 50, 51, 52, 53, 54.
- Assessment of the hydrogeological impact assessment - Objections Remain.

3 Hydrogeological Impacts Considerations

The sections below provide a technical review of the Hydrogeological Impact Assessment (December 2024). The objectives stated by the HIA is to "*assess the potential impacts of the grouting operation on groundwater abstraction at the PWS abstractions, and on the potential to increase flooding at the site.*" The Environmental Statement only review activities associated with grouting operations.

3.1 Potential impact of the grouting operation on groundwater abstraction

Changes presented in the documents submitted in January 2025, when compared to previously presented grouting operations, appear to address most risks of contamination to the water supply, principally by removal of Pulverised Fuel Ash (PFA) and additives to the concrete within the grouting mix.

The monitoring and mitigation measures provided by the applicant could provide a satisfactory framework for the grouting operations. Further comments could be made following the submission of the Construction Management Plan (CMP) and Source Protection Strategy, and that needs to be secured as part of planning application conditions to establish monitoring and mitigations measures proposed are effectively implemented.

The role of the Environment Agency to protect the environment and of Thames Water to ensure the supply of water remains wholesome will be critical for accepting additional planning conditions (CMP) and ensuring their implementation. Responsibility lies with the Environment Agency to regulate groundwater activities through the Environmental Permitting Regulations 2016. Planning permission should, therefore, be conditional upon confirmation from the Environment Agency that either they consider that permitting is not required for the proposed works, or that works must not proceed until such a permit has been issued.

We note that the Environmental Statement Non-Technical Summary A (Reference 332610422A5/NTSA dated December 2024) states that *"to ensure that the Works does not have any adverse off-site impacts or increase flood risk elsewhere, surface water will be managed and disposed of using sustainable drainage techniques."* No further information on the management and disposal of surface water is provided.

In addition, the Cumulative Effects Section 2.4 (Reference 332610422A5/NTSA dated December 2024) is inadequate while referring to adjacent planning applications (P18/S0951/O, Wyevale) and (P21/S4616/FUL, Land West of Reading Road) with no details provided other than the presumption of an absence of significant cumulative effect. No details are provided from these developments which could affect the works and vice-versa, e.g. overall reduction in the permeability of the abstraction recharge area or combined leaching or sealing of underground strata following grouting.

Overall, if the updated grouting operations appear satisfactory, these operations are intrinsic to the depth of the water table level, which remains poorly defined. The operations as set out rely on ensuring a minimum of 1m between the bottom of the grouting and the water table, however no specific depths of the proposed grouting are presented. The lack of evidenced groundwater monitoring, i.e. seasonal variation or changes in elevation due to pumping operations, provides little confidence that grouting operations will not reach groundwater, resulting in a restriction of the flow in a Principal Aquifer. This is in opposition to the Environment Agency Groundwater Protection Principles and Practices (updated 2nd October 2023) position N8 – "Within SPZ1, the Environment Agency will normally object in principle to any planning

application for a development that may physically disturb an aquifer". Further work is therefore required to demonstrate to what depths the grouting will reach and show this in relation to observed evidence of seasonal groundwater level fluctuations.

3.2 Potential increase of contamination sources

The application P24/S2651/DIS provides further details for surface water and foul water management compared to previous planning applications. New concerns arise from both, and which were not previously discussed due to the lack of information from the applicants.

In relation to surface water management, further details are provided in Section 4. It is noted that the origin of the surface waters to be infiltrated through SuDS are contrary to current guidance in SPZ1 in that the applicant propose to discharge waters from the access roads, which may introduce pollutants into the water supply. The Environment Agency's approach to groundwater protection[2] states that *"Where infiltration SuDS are proposed for anything other than clean roof drainage … in a SPZ1, a hydrogeological risk assessment should be undertaken, to ensure that the system does not pose an unacceptable risk to the source of supply."*

In relation to foul water management during the grouting and compaction works, the applicant proposes the building of foul water storage, a cesspit, within the source protection zone, prior to disposal off-site by tanker. There are limited details regarding the design of the storage, permitting and sustainability of these operations. However, as this practice is restricted to the construction stage, this could be acceptable pending clearer details of the planning of the works over the 8 months grouting works are scheduled. We would expect the Site Waste Management Plan to be following The Site Waste Management Plans Regulations (SI/2008/314).

The Drainage Statement (reference A253-R001v17 dated 18 December 2024) in Section 5.7 reports that, if infiltration is not an option, Thames Water recommended discharge to the River Thames. This option was discounted on the ground that it would take too much time and the provision of a 1km sewer system would be detrimental to the wider area of Shiplake. It is not clear if these impacts have been balanced within the EIA and compared to the risks from potential contamination of the sole water supply of the area.

4 Drainage strategy

The updated, current drainage strategy proposals (December 2024) involve the utilisation of a basin in the upper, western part of the site, which will dispose surface water through infiltration to the aquifer. Surface water will be pumped to the upper basin from two collecting basins located in the lower, eastern side of the development. These two lower basins will receive and store, temporarily, the sum of the development's surface water volumes before they are pumped to the aforementioned higher level infiltration basin. A drainage piping arrangement including intermediate SuDS features (i.e. permeable paving on parking areas) will conduct surface water from its source locations to the two temporary storage basins.

4.1 Carbon-intensive approach

The proposed design, in relying on surface water pumping, will be a carbon-intensive approach to managing surface water on the site. If adopted, this carbon and economic cost will have to be met by water bill payers (if adopted by Thames Water) or council tax payers (if adopted by OCC), and is contrary to national and local guidance on low-carbon and energy efficient design, e.g.:

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[2] https://assets.publishing.service.gov.uk/media/5ab38864e5274a3dc898e29b/Envirnment-Agency-approach-to-groundwater-protection.pdf

- National Planning Policy Framework: "The planning system should support the transition to a low carbon future"
- SODC Local Plan, Policy DES8: Promoting Sustainable Design: "All new development … should seek to minimise the carbon and energy impacts of their design and construction"
- OCC Local Standards and Guidance for surface water drainage on major development in Oxfordshire: "SuDS should be designed to provide an effective 'whole life' sustainable solution, by ensuring that … where possible, natural resources are reused and energy efficient products, processes, operation and maintenance are possible."

4.2 Drainage model

The results of an updated drainage model (Causeway Flow) have been included in the latest submission. Having reviewed this model, we conclude that the following issues require addressing:

- Pipe velocity for the 30y and the 100y+40%CC scenario is in many pipes significantly below 1m/s, set as the minimum self-cleansing velocity for a full pipe in the water industry's "Design and Construction Guidance"[3]. This will increase the risk of sedimentation and blockage, given the fact that most of the pipes for the 30y+25%CC and all of them for the 100y+40%CC are surcharged.
- The design incorporates 31no. Hydro-Brakes at the outflows of the permeable paving and parking spaces. 30no. of those, fail to abide by the minimum acceptable opening recommended in the SuDS Manual[4] of 75mm. and consequently represent a risk of of blockage, as well as an unprecedented large number of respective assets to maintain.

  It must be stressed that the Hydro-Brake Unit Outlet Diameter is indicated by the first numerical reference in the product's number, in millimetres (e.g. 64mm for CTL-SHE-0064-2000-1254-2000).

  The 'Min Outlet Diameter', set to a value of 0.075m or 0.100m in the latest submitted drainage model (Causeway Flow) is seperate to the outlet diameter of the control device, and is referring to the opening of the outgoing pipe, but not to the Hydro-Brake Unit Outlet Diameter.
- The attenuation basins located at the east side of the site have a total depth of 2.3m (SOUTHERN BASIN 1 and SOUTHERN BASIN 2, respectively), while the infiltration basin on the west is 1.5m deep. It is a matter of good practice, relevant to H&S concerns (i.e. it makes it easier for people and wildlife to climb out if they fall in) that a side slope equal to 1 in 4 or less steep be used in basins of such depths, instead of the 1 in 3 which is set in the model.

4.3 Failure modes and consequences

No consideration is given to modes of failure including:

- Blockage within pipes or permeable paving systems. This can be properly addressed through a 2D model that is incorporating the post-development layout, the drainage system and its operation. Therefore, 2D surface water modelling of the post-development drainage system is required.

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[3] Water UK (2021) Design and Construction Guidance https://www.water.org.uk/wp-content/uploads/2021/07/SSG-App-C-Des-Con-Guide.pdf

[4] CIRIA (2015) Report C753 The SuDS Manual-v6

- The potential for the upper infiltration basin to not achieve it's designed rate of infiltration. By placing this key asset at the top of the site, the housing below it would be at risk of flooding in the event of infiltration rates significantly below those modelled. The issue of infiltration rates from the basin is considered further below.

4.4 Assessment of the infiltration rate used in the drainage system design

The latest Drainage Statement[5] provides evidence of an infiltration rate for the upper basin equal to 1.52×10^{-5}m/s (0.054m/hr), which for context, is considered a good infiltration rate typical of a sandy loam. This is the value utilised in the drainage model.

The remaining concern is that the impact of potential grouting and compaction works (see paragraph below) on the infiltration rates of the site have not been accounted for. The 2020 HIA[6] completed by H Fraser Consulting includes a calculation of the potential impacts of the compaction, by calculating a 5% reduction in ground porosity and an 18% reduction in the rate of infiltration. An updated HIA would be needed for the proposed grouting and updated drainage scheme impact on the infiltration rates' values, as suggested in the 2021 JBA[7] Grouting and Compaction Review.

As described in the 2024 HIA, *"Following ground stabilisation work, but prior to further development, permeability underlying the site will have decreased, leading to more surface water run-off and less immediate infiltration. However, temporary drainage structures across the stabilised but undeveloped site will act to capture and hold this water following large rainfall events to remove any increased flood risk. This holding of water will allow recharge to the underlying aquifer, although infiltration rates and recharge are likely to be reduced in comparison with the greenfield site. "*. No quantified reduction of the infiltration rate is suggested.

4.5 Assessment of the basin sitting on top on top of a deep voided ground in the chalk and shallow relaxed ground

The 2019[8] Geotechnical Investigation mapped the location of voided ground in the chalk and shallow relaxed ground, as depicted in Figure 4-1, which depicts the deep seated voids stretching across this site in green and the loosened or relaxed soil areas shaded yellow or purple.

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[5] ALP (Dec 2024) Drainage Statement

[6] H Fraser Consulting (2021) Hydrogeological impact assessment for proposed development works at Shiplake

[7] JBA Consulting (2021) Grouting and Compaction Review.

[8] Zetica (2019) Geotechnical Investigation

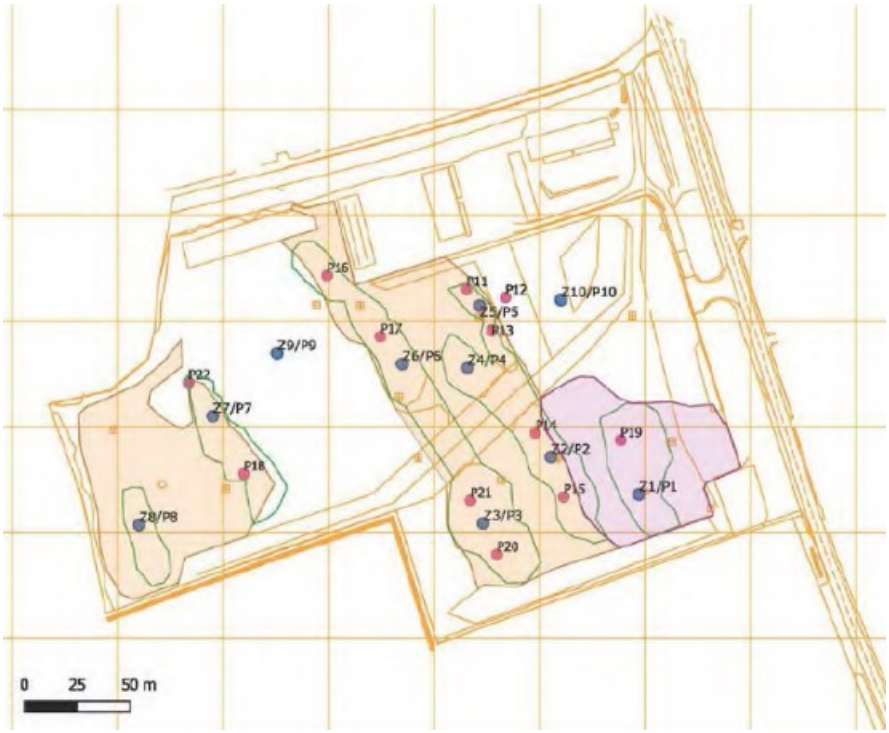

Figure 4-1: Deep voided ground in the chalk and shallow relaxed ground, 2019 geotechnical investigation © Zetica

The same conclusions were reached by the 2019[9] Terramech Ground Investigation, as shown in Figure 4-2. It is not coincidental that Terramech's Ground Investigation utilises Zetica's map of deep voided ground in the chalk and shallow relaxed ground, as their conclusions coincide.

2019 Terramech GI, as shown in Figure 4-2, suggests that "*Areas of ground softened by collapses of nearby voids (shaded yellow on Zetica Drawings). When the voids collapsed they have loosened or relaxed a wider area of ground above. Compaction grouting would be favoured in these areas to recompact these soils*" and "*Areas where deep seated voids are present at depths of between 9m and 13m (cross hatched in green on Zetica Drawings). The voids may be water or chalk slurry filled. Pressure grouting of these deep features would prevent further collapse*".

[9] Terramech (2019) Geotechnical Investigation

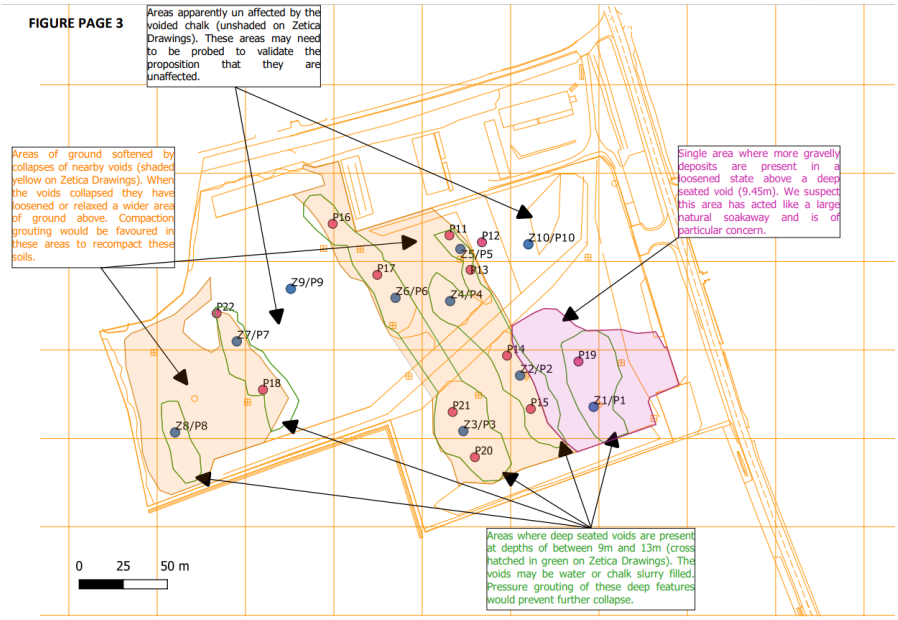

Figure 4-2: Mapped voids, 2019 geotechnical investigation © Terramech

2019 Terramech's GI referring to the above figure, mentions that "*The plan shows the five linear deep seated voids stretching across this site outlined in green and the loosened or relaxed areas shaded orange or purple. Collapsing of the deep seated voids has already affected large areas of the site and the potential for underground collapses to migrate to the surface has been proven by the appearance of two swallow holes.*

We suspect that further collapses at this site are inevitable. The drainage of rainwater over the years has resulted in a tentative equilibrium and stability. Our six trial pit soakage tests were sufficient to upset this equilibrium and cause two collapses that migrated to the surface.

The site has now been significantly disturbed by the archaeologists trenches, installation of a five metre deep soakaway, various drainage trenches and chambers (presumably backfilled with gravel), and excavation of a road formation. These man made features may now be re-directing water into areas where new collapses could be initiated."

The deep-seated void area in the western part of the site coincides with the proposed location for the infiltration basin (Figure 4-4[10]). However, the 2024 drilling and grouting plan (Figure 4-5[7]) shows only minimal works in this area.

Figure 4-5, which argues that the soil beneath the area where the basin sits has no deep voids in the chalk and is not an area of shallow relaxed ground, appears to be based on an interpretation of the 2020 Stantec[11] (On behalf of Vertase FLI Ltd) "Ground Stabilisation by Compaction Grouting Specification", where a considerable portion of the implemented dynamic probe results, of the area where the infiltration basin is planned to lie, were characterised as "Shallow Refusals" (Figure 4-3), denoting that probing did not proceed to the planned depths due to encountering significant resistance at shallower depths. Nevertheless, these areas have been interpreted in the drilling and grouting plan as areas not requiring any intervention.

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[10] ALP (Dec 2024) FRA and Drainage Strategy

[11] Stantec on behalf of Vertase (2020) Ground Stabilisation by Compaction Grouting Specification

The same document mentions that "*As discussed in Section 5.2.3, there is an area towards the west of the site where ground conditions are currently undetermined after 66 no. locations recorded shallow refusals, likely associated with large flint cobbles. Due to the size of this area and the understanding that dissolution features may be present in this area, it is recommended further investigation, through the use of rotary or cable percussive boreholes is carried out to confirm the ground conditions in this area*", and continues "*The adoption of the infiltration drainage at this site will need to take into consideration the ground conditions identified in this report. Shallow soakaways are not recommended for drainage discharge into the ground because of the potential for destabilising existing solution features.*

Where the ground is scheduled to be stabilised, consideration should be given to the depth of drainage discharge below the zone of treatment, for example, by means of deep bore soakaways. Infiltration drainage at the site should be undertaken in accordance with CIRIA C574, and any testing required, for example soakaway testing, or falling and maintained head infiltration tests, should be carried out in accordance with Building Research Establishment DG 365 and BS 5930:2015 respectively".

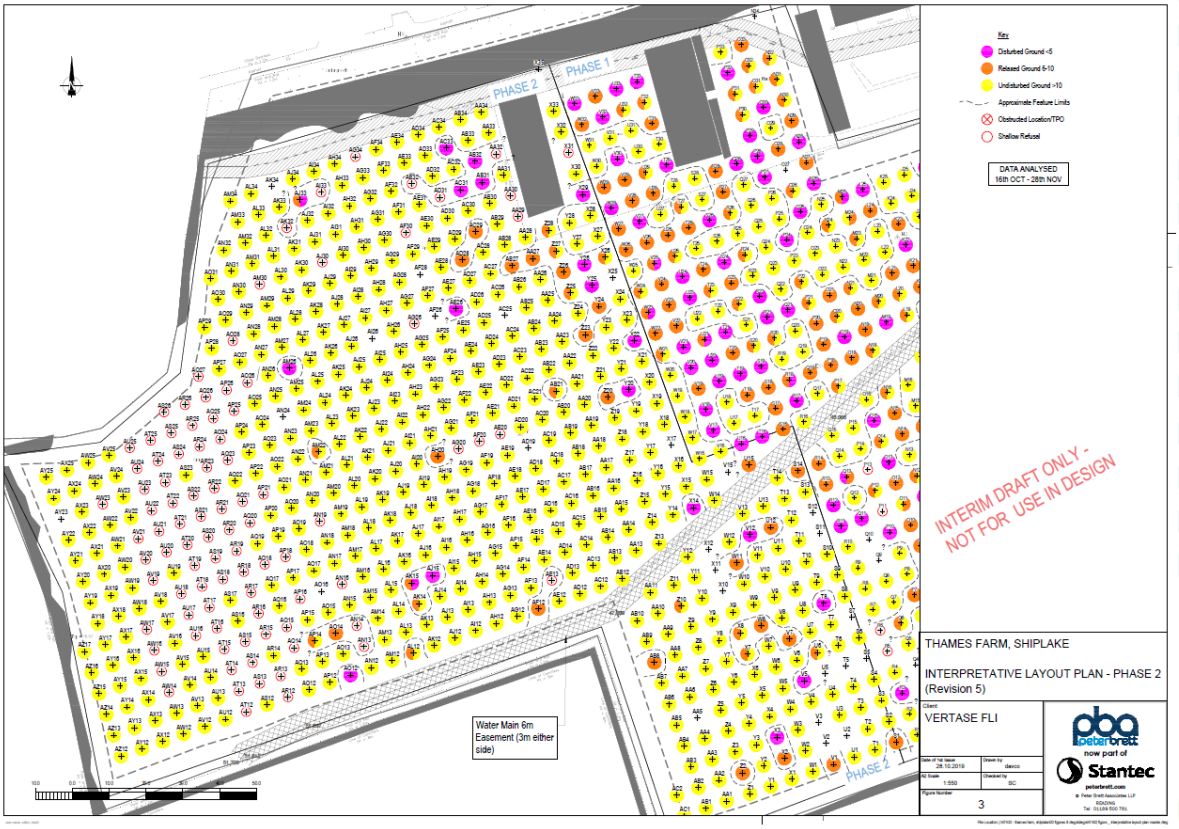

Figure 4-3: Interpretative layout plan © Vertase FLI

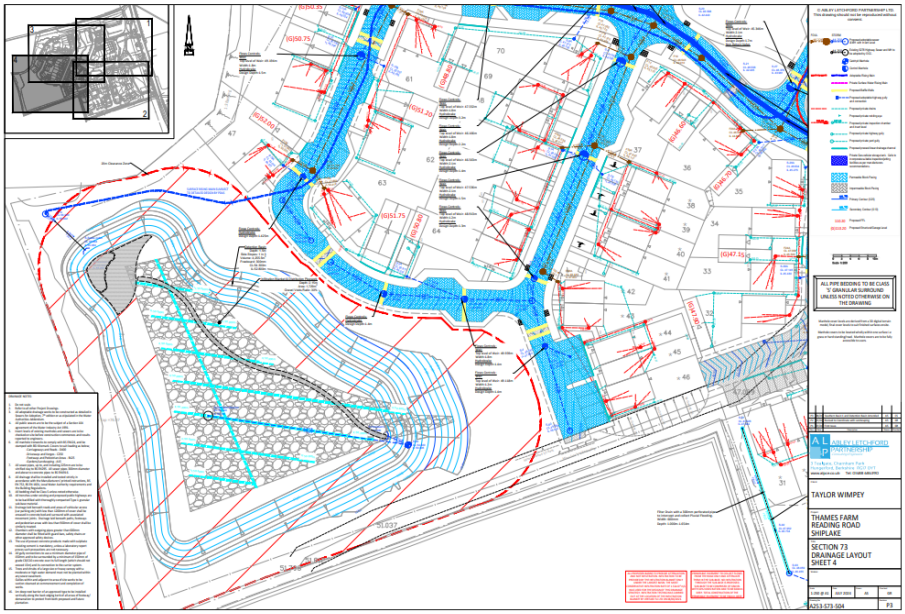

Figure 4-4: August 2024 drainage layout plan 4 © Taylor Wimpey

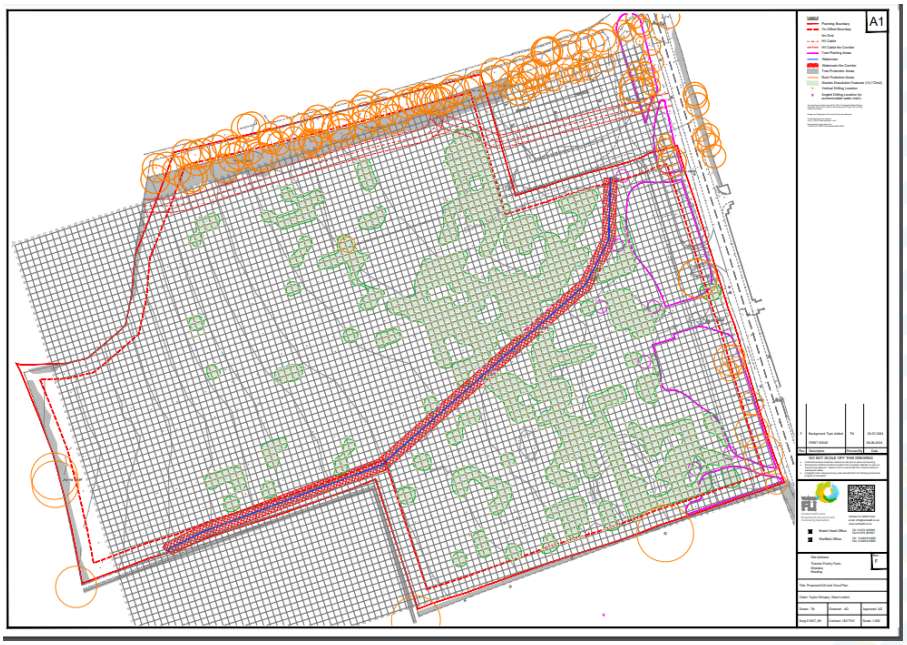

Figure 4-5: 2024 drilling and grouting plan © Vertase FLI

Considering the above it is evident that the 2024 proposed drainage system's sole disposal feature (the upper infiltration basin) is potentially sitting above an area of a deep voided ground in the chalk and shallow relaxed ground. Therefore, explanation is required as to the reason for limited grouting works in this area, and for not having undertaken the further investigations using rotary or cable percussive boreholes as recommended in the 2020 Stantec report. When storing up to 1.5m (basin) + 3.6m (infiltration blanket) of water, there would be significant ground loading and potentially rapid scour of existing voids if these are not stabilised prior to construction of the basin. If they are treated, as discussed above, the infiltration rate needs to be adjusted, and preferably reconfirmed after the grouting works, to ensure that it is adequate to safely discharge the site's surface water to the ground.

Further to the above we have applied the 'Groundwater Risk Screening', a risk screening approach required by the EA for medium hazard sites described in the CIRIA SuDS manual (26.7.2 Groundwater Risk screening, pages 571-573). We have not been able to identify evidence of such a test having been undertaken by the applicants.

The result, based on the submitted data, was a score equal to 245, which estimates the groundwater risk of the specific infiltration basin as 'High', which may require an environmental permit to discharge.

The risk matrix and the respective interpretative table are shown below.

TABLE 26.5 Risk matrix (from Highways Agency, 2009, after Scott Wilson, 2010)

Risk element (RE)		Risk score (RS)			Weighting factor (WF)
Element number	Element description	Low risk (score 1)	Medium risk (score 2)	High risk (score 3)	
1	Pollution hazard Traffic density	All standard urban land use types (excluding high hazard and trunk roads/motorways)			15
2	Standard Average Annual Rainfall depth	< 740 mm	740–1060 mm	> 1060 mm	15
3	Type of SuDS	Continuous unlined linear collection and conveyance components (eg filter strips, swales)	Shallow soakaway (eg infiltration basin/ trench, permeable pavement) draining < 5000 m2 runoff area		15
4	Unsaturated zone depth (ie depth of between infiltration surface and groundwater table)	> 15 m	5–15 m	1– 5 m	20
5	Predominant flow type through soils between infiltration surface and groundwater	Intergranular flow (occurs in unconsolidated or non-fractured consolidated deposits and fine or medium sands)	Mixed fracture and intergranular flow (occurs in fractured consolidated deposits and medium or coarse sands)	Fractured flow (occurs in heavily consolidated sedimentary deposits, igneous and metamorphic rocks and very coarse sands)	20
6	Unsaturated zone material: clay content	> 15% clay	1–15% clay	< 1% clay	5
7	Unsaturated zone organic carbon content: soil organic matter (SOM) content	> 15% SOM	1–15% SOM	< 1% SOM	5
8	Unsaturated zone material: soil pH	> 8	5–8	< 5	5

TABLE 26.6 How to interpret the groundwater risk screening results

Total risk score	Risks to groundwater	Interpretation
< 180	Low or medium	Use simple index approach Note: For discharges to protected groundwater bodies, implement an upstream treatment component that will provide groundwater protection in the event of an unexpected pollution event or poor system performance
180–250	High	Discharges may require an environmental licence or permit. Obtain pre-permitting advice first from the environmental regulator. Risk assessment likely to be required
> 250	Very high	Unacceptable

Figure 4-6: Groundwater risk screening method in SuDS Manual (© CIRIA)

The respective individual risk scores and the Total Risk Score, are shown below:

Table 4-1: Groundwater risk screening matrix

Element Number	Risk Score (RS)	Weighing Factor (WF)	RSxWF	Comments
1	1	15	15	In the current drainage statement (A253-R001 Drainage Statement v17.pdf) figure 9, 'Medium pollution hazard level' - 'Commercial yard, parking with frequent change, other roads' Land Use is referred.
2	2	15	30	SAAR above 740mm (specifically 757 mm).
3	3	15	45	Attenuation basin with infiltration blanket sitting in an area of deep voided ground in the chalk and shallow relaxed ground.
4	3	20	60	Hydrogeological Impact Assessment December 2024.pdf, Appendix C, Figure 1
5	3	20	60	Fractured flow.
6	2	5	10	<1% clay as we refer to chalk.
7	3	5	15	<1% SOM as we refer to chalk.
8	2	5	10	4072A - Thames Poultry Farm geotech rev4.docx, section 4.40, ".. the pH values were sufficiently near to neutral.."
Total:			**245**	

We note that the score is close to being unacceptable, so there should be an onus on the applicant to further assess any risk posed by this discharge route to the aquifer and public water supply. We recommend that a detailed risk assessment, as described in the CIRIA SuDS manual (26.7.3 Detailed Risk Assessment, pages 573-574) should be undertaken to provide quantitative findings for the said risk. The current HIA does not assess the risk of infiltration from the SuDS to the water supply and only deals with risks from the grouting operations.

5 Conclusions

5.1 Hydrogeological impacts

The revised documentation submitted in January 2025 significantly reduces the risk of contamination of the aquifer, by removal of Pulverised Fuel Ash (PFA) and additives to the concrete within the grouting mix. However, concerns remain regarding the proposal to maintain a minimum of 1m between the bottom of the grouting and the water table, due to the absence of long-term groundwater monitoring to demonstrate fluctuations due to seasonality and to pumped abstractions at the public water supply borehole. Consequently, the applicant has not adequately demonstrated that disturbance to the aquifer can be avoided. The proposal does not, therefore, meet the requirements of the Environment Agency Groundwater Protection Principles and Practices position N8 for work within an SPZ1. Ultimately, responsibility lies with the Environment Agency to regulate these

activities through the Environmental Permitting Regulations 2016. It would therefore be recommended that planning permission should be conditional upon confirmation from the Environment Agency that either they consider that permitting is not required for the proposed works, or that works must not proceed until such a permit has been issued.

5.2 Drainage strategy

The December 2024 Flood Risk Appraisal and Drainage Study remains some way from adequately demonstrating that the drainage strategy is appropriate, in line with planning policies and design good practice, and that it will not increase flood risk. Particular attention is drawn to the following points:

- The reliance on pumping to a high-level infiltration basin on the west side of the site makes this a carbon-intensive design. If adopted, the high operating costs would be passed on to water company bill payers or council taxpayers.
- Several design issues are highlighted by the drainage model, including velocities below the self-cleansing velocity for pipes, 30 Hydrobrake controls below the recommended minimum orifice diameter, and steep (1 in 3) side slopes on the basins.
- Exceedance scenarios have not been considered for blockages and for a failure of the upper basin to infiltrate at the stated rate. The consequence of a failure of this upper basin would potentially be very serious, given that it lies at the upper part of the site, so any water which overtopped would be expected to run through the site. This risk should be assessed and accounted for in the drainage design, site layout and finished floor levels.
- The infiltration rate applied to the upper basin needs to be reassessed if compaction and/or grouting works are planned within the basin's footprint. The latest design does not account for any potential loss of infiltration capacity as a result of compaction and/or grouting. The surface water drainage of the whole site relies upon the ability of this basin to effectively infiltrate.
- Conversely, it is not clear whether the deep-seated void identified in the area of the upper basin has been fully investigated and will be stabilised, and whether the risk of collapse beneath the basin due to high ground loading and scour of voids has been adequately considered. Consequently the long-term stability and safety of this basin, through which the entire site's surface water drainage will pass, has not been demonstrated.
- The result of the 'Groundwater Risk Screening', a risk screening approach required by the EA for medium hazard sites as described in CIRIA SuDS manual, based on the submitted data, was equal to 245, which estimates the groundwater risk of the specific infiltration basin is 'High', requiring a detailed risk assessment and potentially an environmental permit to discharge. Such an assessment has not been submitted.

The applicant does not provide both a realistic assessment of the risk to the water supply or a proposed development commensurate with the constraints of the site. The proposed development remains therefore unsympathetic to the nature of the site, the local area and its designation as an Inner Source Protection Zone (SPZ1).