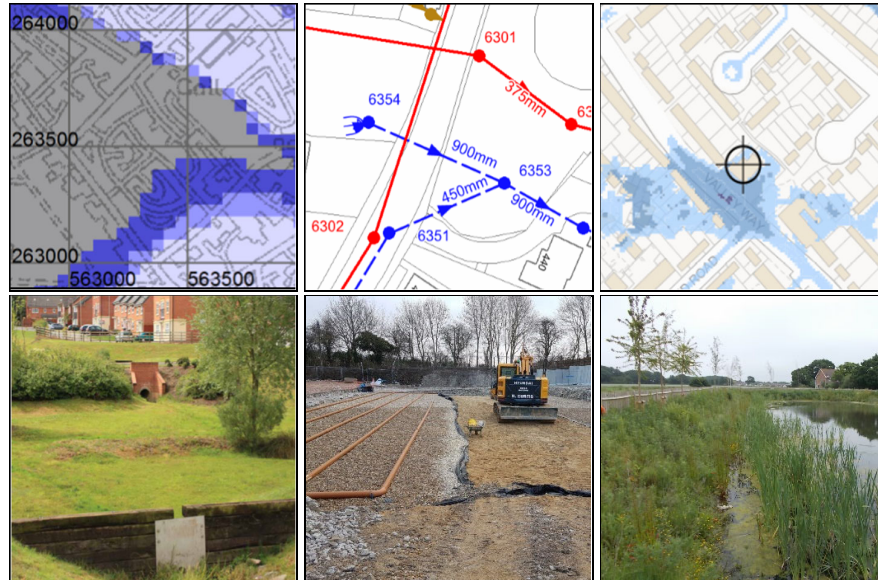




Nutrient Assessment & Budget

**91B The Crescent,
Eastleigh, Hants**

Reference: 25160

Issue: **Date:**

1 29/8/2025 *To NE 16/03/2022 methodology with
replacement NE calculator May 2024*

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1. Introduction

- 1.1 Instructions were received from Regal Homes to undertake an assessment of the nutrient impact for the proposed redevelopment of 91B the Crescent, Eastleigh, Hants for 6 dwellings.
- 1.2 This assessment has been undertaken by A P Traves BSc CEng MStructE MCIHT.
- 1.3 The client's attention is drawn to the conditions and limitations contained in Appendix D.

2. Development Description & Location

- 2.1 The site comprises an existing 0.08 Ha commercial urban fabric parcel at 91B The Crescent, Eastleigh, Hants. The site extents are indicated on ARC Architecture location plan 9908-100-C contained in Appendix A of this report.
- 2.2 It is proposed demolish the existing commercial buildings and to redevelop the site for 6 dwellings. The proposed layout is identified on ARC Architecture site plan 9908-100-C contained in in Appendix A of this report.

3. Background to Nitrogen Nutrient Assessment

- 3.1 The background to the issue is set out in current Natural England Advice note version 5 of June 2020 -Achieving Nutrient Neutrality for New Development in The Solent Region (NEv5). Reference should be made to NEv5 for a more in depth understanding which is summarised in the following paragraphs. Reference should also be made to Natural England- Nutrient Neutrality Generic Methodology dated 1 February 2022 (NE-gen1). Whilst NE-gen1 provides update on the calculation approach NEv5 is still current as this contains the catchment specific guidance on mitigation location. NE- gen1 was issued to LPAs on 16 March 2022 and the calculator has been replaced a number of time to address errors/omissions and in January 2024 to take account of upgrade of public Wastewater Treatment Works (WwTW) defined by the Levelling Up and Regeneration Act 2023. And was replaced again in May 2024 to reflect further scheduling to the Levelling Up and Regeneration Act 2023.
- 3.2 The Solent water environment is internationally important and is protected under the Water Environment Regulations and the Conservation of Habitats and Species Regulations, as well as national protections. There are high levels of nitrogen and phosphorus nutrients in these waters and the evidence indicates these nutrients are causing eutrophication of the waters (excess mats of dense green algae which deplete oxygen as these subsequently decay)
- 3.3 The total nutrient content comes from a number of component parts:
 - i. Agricultural use of fertilisers, particularly in the latter half of the 20th century
 - ii. General coastal background content
 - iii. Nitrate within final discharge from sewage treatment works
 - iv. Diffuse urban rainfall runoff from urban surfaces
- 3.4 Since the late 1980's and early 1990's the agricultural sector has reduced the nitrogen content in applied fertiliser by around 35%. However, the Chalk aquifers which underly the region and which are the dominant source of river flows into The Solent contain a massive amount of legacy nitrogen mainly in the form of soluble nitrate, from decades of previous agricultural practice. It is anticipated that it will take decades from now for the nitrogen content in groundwater to gradually reduce.
- 3.5 Nitrate in treated sewage is the natural product of the breakdown of ammonia contained in human waste. Historic practice was that the permitted concentration of ammoniacal nitrogen in the treated discharge was limited so that the ammonia to nitrate conversion

occurred at the treatment works and took up oxygen within the works and did not subsequently take up oxygen from out of the waters into which discharge was made to protect the receiving waters from deoxygenation ,ie that the discharge made would have a low Biological Oxygen Demand (BOD).

- 3.6 It has been recognised by the Environment Agency, water companies and OFWAT for some time that improvement of the Total Nitrogen (TN) content of discharge needs to be addressed. The water industry works in 5 year spending cycles/programmes referred to as Asset Management Plans (AMPs) and these three parties agree between them how much investment (which comes from increases in sewage bills) can be made in any AMP and what will be delivered in terms of improvement for the investment permitted (affordable). Since the beginning of AMP4 in 2005 Southern Water have begun to systematically upgrade existing treatment works to provide 'nitrogen stripping'. This process has to be artificially 'forced' by careful and continuous control of the treatment process to create a low oxygen environment which 'debonds' the oxygen from the nitrate and stimulates the emission of gaseous nitrogen into the atmosphere (which is 78% nitrogen). This nitrogen release is thus stripped from the effluent that discharges into the receiving waters. It is not practicable to strip 100% of the nitrogen from the sewage, and the upgraded treatment works typically operate to a new TN permit level of around 10 mg/L compared to typical value of around 27 mg/L for traditional works without TN permit limits.
- 3.7 Treatment works upgrades are difficult and complex to plan and deliver in the context of three of the main constraints:
- There is little space at most works for the finished new infrastructure
 - The existing works has to continue to operate during the upgrade and there is little room for this and the working space needed to construct the new infrastructure.
 - The investment cashflow is regulated by OFWAT against bill increases and notwithstanding this there are a finite number of specialists to plan and deliver this so there can only be a limited rate at which the upgrades are delivered.
- The economies of scale and immediate proximity to The Solent has dictated that it is the large coastal treatment works which have been prioritised by Southern Water in AMPs4-7 from 2005-2024.
- 3.8 The introduction of WwTW upgrades through the Levelling Up and Regeneration Act 2023 appears to have been programmed to match the AMP cycle in that the initial tranche of upgrades have been scheduled in January 2024 which coincides with Price Review 2024 (PR24) in which OFWAT and the water industry agree the AMP8 2025-2030 works programme. The initial tranche of upgrades now required have to be delivered by 2030 which coincides with the end of the AMP8 period. It seems likely that the Secretary of State would in future review and update scheduling in the year preceding the next PR ie in 2028 for PR 2029 as the Levelling Up and Regeneration Act requires a minimum period of 7 years allowed for upgrades from scheduling which would coincide with the period of the impending AMP at that time ie AMP9 2030-2035.
- 3.9 The NE-gen1 methodology is aimed at planning permissions for proposed developments and does not address agricultural practice or the water industry AMP process. The NE-gen1 methodology is built off a single fundamental premise. This assumes that persons at work or using non-residential offices and commercial/retail premises must also live in the catchment. In the round this is a reasonable basis on which to look at the total sewage volume. However in zero rating commercial development from nitrogen loading it inherently means that residential developers fund the nitrogen nutrient mitigation of all non-residential commercial development in the region.
- 3.10 As set out in paragraph 3.4 there is a massive amount of largely agricultural legacy nitrogen in the Chalk aquifer below the region which forms the base flow to the rivers flowing into The Solent. The drinking water supplies in southern Hampshire are drawn from this groundwater and these rivers, and this typically contains 7-8 mg/L of nitrogen that does not

stem from the proposed developments. The previous NEv2 methodology did not recognise that this represents around 85% of the nitrogen returned to the water environment from upgraded WwTWs and around 30% from traditional WwTWs. NEv5 gives a 2 mg/L allowance ie about 20% on upgraded WwTW effluent and 7% on traditional WwTW discharges. Whilst this is only partial recognition it is better than the previous NEv2 that made no recognition at all. In effect residential developers will therefore also be funding the mitigation of the unrecognised legacy nitrogen predominantly from historic agricultural practices. The 2 mg/L value is still contained within the NE-gen1 assessment spreadsheet but is no longer as transparent as it was previously.

- 3.11 Natural England nitrogen assessment methodology NE-gen1 considers nitrogen for:
- 1) Land use with regard to nitrogen contained in surface water run-off and infiltration.
 - 2) Sanitation with regard to nitrogen content in the final treated discharge from the WwTW serving the development.

The assessment compares pre and post development quantities on nitrogen for the land use (1) and sanitation (2) to establish a final figure and then adds a 20% buffer to this.

- 3.11 Natural England advise the NE-gen1 methodology is advised for all types of development that would result in a net increase in population served by a wastewater system, including new houses, student accommodation, tourism attractions and tourist accommodation.
- 3.12 The site lies within the Itchen catchment. In March 2022 Natural England added a phosphorus neutrality requirement to development affecting the freshwater fluvial Itchen catchment. Similarly to nitrogen nutrients, impact comprises (1) a land use/surface water runoff component and (2) a sanitation component. Increased phosphorus nutrient levels in these waters has potential to generate algal blooms which can reduce oxygen levels in the water and cause death of aquatic organisms. Similarly to nitrogen nutrients the two principal sources are agricultural fertilisers including a large agricultural legacy effect on the massive volumes of groundwater stored in the local Chalk aquifers which feed the local rivers; and human habitation discharges from WwTWs and PTPs.

4. Derivation of Sewage Load

- 4.1 The NEv5 methodology used a blunt 2.4 average household occupancy and 110 litres per person per day (LPD) for housing as a default.
- 4.2 NE-gen1 now recognises that water consumption on sites varies:
- Building Regulations maximum 125 LHD
 - Building Regulations higher standard 110 LHD
 - Higher standard by water efficiency calculation
- NE-gen1 directs that the level of proposed water usage is increased by 10 LPD *“to account for changes to less water efficient fittings through the lifetime of the development”*. This direction is contrary to the industry direction of travel, Southern Water’s own water supply policies which NE recognise in their February 2022 advice note regarding water neutrality within the Sussex North Water Supply Zone and associated Frequently Asked Questions document (December 2021) in which this demonstrates explicit awareness of Southern Water’s Target 100 *“to reduce water consumption in Southern Water’s whole water supply area in the long term (not just Sussex North), as set out in their Water Resources Management Plan.”* The evidence therefore points to a long term reduction in use NOT a long term increase.
- 4.3 There is a further fundamental error in that sewage load is less than not equal to water use. Water efficiency calculations include a 5 LPD for external use that is not returned to the sewer so does not form part of the sewage load. In water metered properties sewage bills are calculated at 95% of the water supply volume in recognition of this.

- 4.4 The calculations attached to this report have been undertaken on the basis of 110 LPD and the associated water efficiency calculation is contained in Appendix C. A +10 LPD has been added as directed by Natural England. The liability and accountability for the impact of this direction rest with Natural England as current evidence set out in 4.2 and 4.3 above indicates their current approach is unsound.

5. Wastewater Treatment Works

- 5.1 Foul water discharge from the site will outfall to the public sewer network and will be conveyed to Southern Water's Chickenhall Lane WwTW about 1.5 Km south east of the site. The WwTW undertakes traditional primary and secondary treatment. Chickenhall Lane WwTW does not have a Total Nitrogen permit limit and Natural England direct a value of 27 mg/L be used for assessment purposes. The WwTW and outfall location plans and works schematic are contained in Appendix B
- 5.2 Chickenhall Lane WwTW has a current Total Phosphorus permit limit of 0.6 mg/L
- 5.3 Chickenhall Lane WwTW has been scheduled under the Levelling Up and Regeneration Act 2023 (LURA) to implement upgrades of TN and TP performances to 10 mg/L TN and 0.25 mg/L TP by April 2030. The Minister for Housing, Planning and Building Safety issued a letter dated 19th December 2023 to LPAs identifying to them that LURA would come into force from 26th January 2024 and that *"The Act also requires planning decision-makers to consider these upgrades as certain for the purposes of an assessment under the Habitats Regulations."*

6. Land Use Component

- 6.1 The site comprises 0.08 Ha of existing commercial urban fabric. There will be some change in nutrient from the land use component as a result of the proposed development.
- 6.2 The applicant does not propose to use SUDS to provide a reduction in the post development figure (stage 3) from the base calculation load in surface water runoff to which 6.1 relates. This part of the calculator is therefore not applicable.

7. Nutrient Assessment

NITROGEN

- 7.1 The NE-gen 1 sewage loading, WwTW performance for TN and land use component are included in the calculations contained in Appendix C.
- 7.2 Due to the enactment of the **Levelling Up and Regeneration Act 2023**, the Secretary of State has set a default TN upgrade performance of 10 mg/L TN for Chickenhall Lane WwTW to be achieved by a default 1 April 2030 date.

The calculations therefore indicate two values one pre upgrade (notionally 2030) and one post upgrade.

	2025-2030 (5 years)	2030-perpetuity (∞ years)
TN	+19.62 Kg TN/yr	+6.14 Kg TN/yr

INFORMATIVE

1) There is no evident right of assignment or buy back for the 13.48 kg (approx. £40,000) that would no longer be needed come 2030 (or possibly before) from current existing schemes. This leads to an inference of not being able to sell back the 70% unused credits come 2030 (or before). It does not align with the new government move to delivering 1.5M new homes or to making these more affordable as at present come 2030 the applicant would otherwise be sat £40,000 out of pocket so will have passed this on to purchasers by

means of a larger sales price. It also does not make best use of the credits as 13.48kg would otherwise return to the credit pool come 2030, whereas at present the pool will be 13.48 kg short of what it would otherwise have had come 2030 (more so when all the other current sites are also included). Historically LPA responses on other recent assessments makes plain that LPAs are not currently proactive in promoting a pragmatic and sustainable long term approach but are currently sitting back and using NE as a political shield. Natural England are not a body with responsibility for planning decisions they are an advisory body.

2) At present most mitigation schemes only provide permanent credits. The need for temporary credits covering the short term differential until 2030 has just begun to be recognised by NE and LPAs, and Dorset Council have just opened the first temporary credits arrangement albeit for the Poole Harbour catchment. This provides a template approach for other LPAs to follow elsewhere around the UK. We recommend that you enquire with your case officer as to what progress EBC have made towards a similar mechanism for temporary credits for the Solent catchment.

- 7.3 For reference purposes for an in perpetuity lifetime with an assigned a value of 80 years. 75/80^{ths} of the lifetime require 0.91 kg TN/yr. 5/80^{ths} require 3.16 kg TN/yr. It is unreasonable for 3.16 kg TN/yr to be provided for the lifetime and it is impractical to sell back 70% of those credits in 5 years time for a dwelling built and sold 5 years beforehand. It would also make the dwelling less affordable in the first place. A pragmatic and practical approach is to provide an amount of mitigation now the offsets the lifetime impact over the lifetime ie all the post 2030 impact plus 5/80^{ths} of the interim difference 2025-2030:

$$6.14 + (19.62 - 6.14) \times 5/80 = \mathbf{6.98 \text{ kg TN/yr (to 2 decimal places)}}$$

PHOSPHORUS

- 7.4 The NE-gen 1 sewage loading, WwTW performance for TP and land use component are included in the calculations contained in Appendix C.
- 7.5 Due to the enactment of the **Levelling Up and Regeneration Act 2023**, the Secretary of State has set a default TP upgrade performance of 0.25 mg/L TP for Chickenhall Lane WwTW to be achieved by a default 1 April 2030 date.

The calculations therefore indicate two values one pre upgrade (notionally 2030) and one post upgrade.

	2025-2030 (5 years)	2030-perpetuity (∞ years)
TP	+0.45 Kg TP/yr	+0.21 Kg TP/yr

INFORMATIVE

1) There is no evident right of assignment or buy back for the 0.24 kg (approx. £12,000) that would no longer be needed come 2030 (or possibly before) from current existing schemes. This leads to an inference of not being able to sell back the 50% unused credits come 2030 (or before). It does not align with the new government move to delivering 1.5M new homes or to making these more affordable as at present come 2030 the applicant would otherwise be sat £12,000 out of pocket so will have passed this on to purchasers by means of a larger sales price. It also does not make best use of the credits as 0.24 kg would otherwise return to the credit pool come 2030, whereas at present the pool will be 0.24 kg short of what it would otherwise have had come 2030 (more so when all the other current sites are also included). Historically LPA responses on other recent assessments makes plain that LPAs are not currently proactive in promoting a pragmatic and sustainable long term approach but are currently sitting back and using NE as a political shield. Natural England are not a body with responsibility for planning decisions they are an advisory body.

2) At present most mitigation schemes only provide permanent credits. The need for temporary credits covering the short term differential until 2030 has just begun to be recognised by NE and LPAs, and Dorset Council have just opened the first temporary

credits arrangement albeit for the Poole Harbour catchment. This provides a template approach for other LPAs to follow elsewhere around the UK. We recommend that you enquire with your case officer as to what progress EBC have made towards a similar mechanism for temporary credits for the Solent catchment.

- 7.6 For reference purposes for an in perpetuity lifetime with an assigned a value of 80 years. 75/80^{ths} of the lifetime require 0.02 kg TP/yr. 5/80^{ths} require 0.07 kg TP/yr. It is unreasonable for 0.07 kg TN/yr to be provided for the lifetime and it is impractical to sell back 70% of those credits in 5 years time for a dwelling built and sold 5 years beforehand. It would also make the dwelling less affordable in the first place. A pragmatic and practical approach is to provide an amount of mitigation now the offsets the lifetime impact over the lifetime ie all the post 2030 impact plus 5/80^{ths} of the interim difference 2025-2030:

$$0.21 + (0.45 - 0.21) \times 5/80 = \mathbf{0.23 \text{ kg TP/yr (to 2 decimal places)}}$$

8. Mitigation

NITROGEN

- 8.1 NEv5 Figure 1 subdivides the overall Solent catchment into 6 sub catchments. A copy of this Figure is contained in Appendix C.
- 8.2 The site lies in the Itchen subcatchment. However NEv5 paragraph 5.28 states that it is appropriate to consider the River Test and River Itchen catchments as a single outfall location and acceptable mitigation catchment locations for Chickenhall Lane WwTW are; River Test and River Itchen.
- 8.3 Section 5 of NEv5 sets out various types of hypothetical mitigation. However most of these are impractical for modest numbers of dwellings in an urban context where served by the public sewer. These are briefly discussed below:
- 8.4 Chickenhall Lane WwTW is scheduled under the Levelling Up and Regeneration Act 2023 to be upgraded by April 2030
- 8.5 Installation of wetlands to treat foul and or surface water run-off from the site. Sites in urban catchments served by the public foul sewer network must connect to the public foul sewer unless this is too far away to be viable. In most urban contexts the sites are within viable distance of public sewer connection and application for an environment permit for private treated effluent discharge would be refused. Notwithstanding this treatment will not remove 100% of the nitrogen so whether by public treatment works or private treatment plant there will always be some residual nitrogen within the final treated foul water discharge.

The regulatory hierarchy for discharge of site surface water run-off requires that infiltration discharge (eg soakaways and permeable pavements) is provided where possible. Nitrogen treatment wetlands need to permanently retain water and are contrary to national drainage policy on permeable sites.

On non-permeable sites a proportion of the rainfall events that occur within a year are short showers that result in the ground being wetted but do not develop any run-off. The amount of annual run-off (Hydraulically Effective Rainfall, HER) is generally in the region of about 2/3 of the annual rainfall. The amount of annual surface water run-off for a site is therefore finite and limited by the impermeably surfaced area and site HER. Compared to foul water the nitrogen content is also much lower and NEv5 Appendix 2 indicates that 3mg/L is deemed representative. For crude general illustration purposes, assuming a positively drained area of say 200m² per dwelling and assuming an HER of say 500mm per annum with the prescribed nitrogen concentration of 3mg/L this would suggest the finite amount

of nitrogen within the surface water run-off to be around 0.3 Kg per dwelling. The nitrogen removal efficiency of stormwater wetlands varies and NEv5 Appendix 4 indicates a median removal rate from studies to be 37%. It is therefore implicit from this that the total mitigation potential for the illustration would be around 0.1 KgTN/yr. The corresponding illustrative buffered TN discharge for treated foul water effluent from 1 dwelling would be of the order of 2.9 KgTN/yr for traditional WwTW and around 0.8 KgTN/yr for a dwelling served by WwTWs with nitrogen removal technology. It is generally not possible to mitigate more than 3-12% of the residual foul water impact by treating 100% of the site surface water run-off, so other mitigation will usually be required anyway.

Notwithstanding this the design of wetlands is a specialist activity and is not usually cost effective on a modest site scale. There is also a significant land take for the wetlands and there would be a requirement to set up and maintain a secured maintenance programme for operation of the wetland in perpetuity.

- 8.6 Some urban city authorities (eg Portsmouth CC) have a retrofit mitigation scheme whereby the increase in foul water effluent conveyed to the public WwTW from the site is offset by reducing the discharge from older existing housing stock by retrofitting modern water appliances. Eastleigh BC are not known to be operating such a scheme.
- 8.7 The most common approach is one of land use offset whereby the increase in nitrogen at the site is offset by a corresponding reduction in nitrogen elsewhere in the subcatchment eg by change of use from farm land to woodlands or community open space etc. Some sites can achieve mitigation within their own site when farmland of relatively high existing nitrogen discharge is developed for housing such that the reduction in the nitrogen from the change in land use is greater than the increase from the new foul water loading. For all other developments the mitigation land and development land are at different locations. There are three potential approaches to securing the necessary mitigation land:
- i. The applicant already controls a suitable area of private land.
 - ii. Some LPAs already control such land and buy in to their scheme can be made.
 - iii. Buy in to a third party scheme

It is a requirement that the change in use at the mitigation site is legally secured in perpetuity and that necessary maintenance to ensure the new low nitrogen usage is also secured. Whilst hypothetically a suitably sized piece of land could be privately procured at a suitable location and taken out of farming use to provide an offset reduction in nitrogen on that land in perpetuity, the urban south Hampshire location of the site, means this may be difficult to find as much nearby local land is similarly earmarked for potential future development.

- 8.8 In March 2020 Eastleigh Borough Council cabinet agreed an initial charging policy for nitrogen credits offered by an EBC scheme. EBC have since acquired 78.5 Ha of land to generate these credits and on 29 March 2021 EBC cabinet sanctioned a credit charging policy of £3,000 +VAT per Kg for the credits. Eastleigh Borough is located in the Itchen catchment, which NEv5 paragraph 5.28 states is interchangeable with the Test catchment in which the site discharge would be made. The EBC 29/3/2021 nitrogen credit charging policy paragraphs 9 and 15 confirm that developers outside the Borough may purchase credits *“as long as it can be demonstrated that the relevant LPA [EBC for this site] has received a valid planning application and ultimately that mitigation is secure in an appropriate planning agreement.”*
- 8.9 The PfSH website indicates the point of contact for the EBC scheme to be nutrientoffset@eastleigh.gov.uk
- 8.10 The Roke Manor mitigation scheme also serves the Itchen catchment. The PfSH website indicates the point of contact for the Roke Manor scheme to be ollie@ovingtonpark.co.uk

- 8.11 The National Trust operate a mitigation site at Hinton Ampner that also serves the Itchen catchment. The PfSH website indicates the point of contact for the Hinton Ampner scheme to be George.upex@nationaltrust.org.uk
- 8.12 There is another mitigation scheme serving the Itchen catchment at Blackburn Farm. The PfSH website indicates the point of contact for the Blackburn Farm scheme to be hdavies@thrings.com
- 8.13 The Grange Estate at Abbotstone operate a mitigation site that also serves the Itchen catchment. The PfSH website indicates the point of contact for the Grange Estate scheme to be langridge.home@btinternet.com
- 8.14** In November 2023 the Government announced the creation of the Local Nutrient Mitigation Fund (LNMf) accessible to LPAs to *“enable LPAs to boost the supply of mitigation, by bring forward innovative mitigation schemes an providing mitigation credits. The funding will be recycled locally until nutrient mitigation is no longer needed, at which point is will be used for measures to help restore the relevant Habitats Sites.”* The ministers letter of 19 December 2023 confirm that **Fareham BC as lead for PfSH was awarded £9,600,000 from the first round of LNMf funding for use in provision of mitigation within the Solent and Itchen catchments. The PfSH meeting of 30 September 2024 (agenda item 12 refers) gives the first meaningful update on the roll out of mitigation from PfSH LNMf funding. This indicates:**
- 1.1-1.3 Stubbington agricultural reversion scheme is expected to have nutrient credits available from end of October 2024
 - 1.4 water efficiency mitigation is referenced but no details is provided. Contact your own LPA about such availability and currency.
 - 1.5 Winchester CC PTP upgrade mitigation credits scheme is expected to have credits available in the 2024 calendar year ie within the next 12 weeks from today. We suspect this would only be suitable for use in the Itchen catchment.
 - 1.6 Eastleigh wetlands mitigation credits scheme-is still in development, so minded that these would need to be constructed before any credits are generated it is implicit that no credits will be forthcoming from this scheme in the near future.
 - 2.1-2.4 It is intended to have an Inter Authority agreement (IAA) one benefit of which would be to remove the need for induvial s106 agreements-The tone of paragraph 2.4 is towards rapid signatories to an IAA but no determinate date/programme is set down. You will need to ask your LPA about their current position on this where relevant. It is also unclear if the IAA would just cover LPA LNMf schemes (1.1-1.6) above or would also cover other schemes, for Example HIWWT credits which are already widely accepted by a number of LPAs. You should ask your LPA about this as may be relevant

Given the poor availability of some credits it would be very useful if PfSH would update their mitigation provider list more frequently and expand it to include emerging schemes, the anticipated number of total credits, the currently available unallocated credits remaining and the currently anticipated date credits in new schemes are expected to become available at.

- 8.7 The applicant proposes to purchase nutrient mitigation credits to mitigate the impact.

PHOSPHORUS

- 8.15 Whereas the Itchen and Test catchments are interchangeable with respect to nitrogen nutrient mitigation as both discharge to the Southampton Water section of the Solent as the impacted receptor, for phosphorus the receptor is the Itchen SAC which would limit a phosphorus mitigation site to the freshwater fluvial catchment of the Itchen.

- 8.16 In July 2020 Eastleigh Borough Council extended their mitigation scheme to provide for a small number of phosphorus mitigation credits made accessible to small developments within Eastleigh Borough and we understand also elsewhere if these drain to Chickenhall Lane WwTW. The point of contact for the EBC Phosphorous mitigation scheme is also indicated to be nutrientoffset@eastleigh.gov.uk
- 8.17 We understand that a new mitigation scheme operated by Bio Diverse is due to become operational in the market in the next 2 weeks or so. For details contact martin@bio-diverse.co.uk
- 8.18 The applicant proposes to provide a financial contribution towards a strategic project off-site mitigation.

NOTE

Because both nitrogen and phosphorus credits are required you should check with mitigation scheme providers if purchase of one type of credit binds you to also purchase the other type of credits from the same supplier as this could limit overall mitigation options.

Appendix A

1. The contents of this drawing are copyright.
2. Planning drawings are only to be used for planning purposes & no reliance on compliance with building regulations should be assumed.
3. Drawings must be read as a complete pack and not individually.
4. Do not scale. Figured dimensions only to be used.
5. Contractors must verify all dimensions and report any discrepancies before putting work in hand or making any shop drawings.
6. All flat roofs to be fitted with a man safe system to satisfy CDMA 2015 regulations unless written confirmation from Principle Designer/ Principle Contractor is provided to show alternative compliance has been sought and approved.
7. Slab design to be independently checked by their fabricator for regs. compliance and slabs, prior to construction/ ordering. Dimensions to be checked before fabrication.
8. Mechanism waterproofing specialists (or similar company with relevant PI insurance) to be instructed and detail all basement waterproofing designs. - ARC carry no responsibility or PI cover for basement designs in terms of waterproofing or structure in any way.
9. A design and risk assessment should form part of our drawing package. If you have not received this from us by post, email or collection please contact us for a copy before moving forward with the project.
10. We take no responsibility for the depicted site ownership boundary. Clients must notify us if they feel the our plans do not accurately depict their ownership or area of control for planning purposes.
11. We do not take responsibility for meeting minimum space as set out in Government Technical housing standards - nationally described space standards document.
12. All Cladding & building attachments externally to be all A1 fire rated.
13. We do not take any responsibility and do not carry any PI cover in relation to any matter relating to the safety. Part 8 building regulations. BS 5991 for fire of EWS1 and drawings in no way form a fire strategy/ report. All design/ details relating to fire safety are shown for indicative purposes only and should be read in conjunction with the latest version of the Appointed Fire Consultant Fire Strategy Document/ Report - all information contained in such a report supersedes ARC drawings in all aspects. No assumption of any responsibility is accepted. If you are unaware who the appointed fire consultant is or don't have a copy of the latest version of the report please contact arc in writing immediately.
14. EWS1: an independent and an appropriately qualified and insured fire consultant/engineer should be appointed by the client/contractor to ensure the finished project is compliant. Some mortgage companies require EWS1's on buildings outside of the EWS1 standard criteria.
15. Part 8 & fire safety: An independent and appropriately qualified fire consultant should be instructed by the client/contractor at the earliest possible point in the design process to ensure compliance with Part 8 & fire safety. Please note that subject to a fire consultant confirmation/report the following points may be required in some or all areas of the building: 1) Sprinkler systems (Domestic or commercial) 2) Mechanical smoke extraction 3) Fixed shut fire safety glass 4) some sprinkler systems require large holding tanks 5) plan changes in relation to fire safety could result in loss of slabable floor area and potential requirement for additional planning applications. (This list is not exhaustive)

Windows forming the overheating strategy with a change in floor level exceeding 600mm between inside and outside require 1.1m guarding (APD O diagram 3.1).

PLEASE NOTE: A SPRINKLER SYSTEM MAY BE REQUIRED

LEGEND

SITE BOUNDARY

EXISTING BUILDING TO BE DEMOLISHED

INDICATIVE PLANTING

BIN STORAGE SLABS

PART R CONNECTION POINT

SITE AREA: 0.08 HECTARES / 0.19 ACRES

2 X 2 BED HOUSES

4 X 3 BED HOUSES

6 X PARKING SPACES (1 PARKING SPACE PER UNIT)

2 X CYCLE SPACES PER UNIT WITHIN STORES

TOTAL PROPOSED GIA ON SITE @ 544.2 SQM

C	BOUNDARY REVISED.	19.08.25	JA
B	ADDITIONAL DIMS ADDED.	04.08.25	JA
A	BOUNDARY REVISED.	01.08.25	JA
AMENDED ROOF PLAN SHOWN.			

No.	Revision.	date	by
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PROPOSED DEVELOPMENT,
91B THE CRESCENT,
EASTLEIGH,
HAMPSHIRE,
SO50 9BJ.

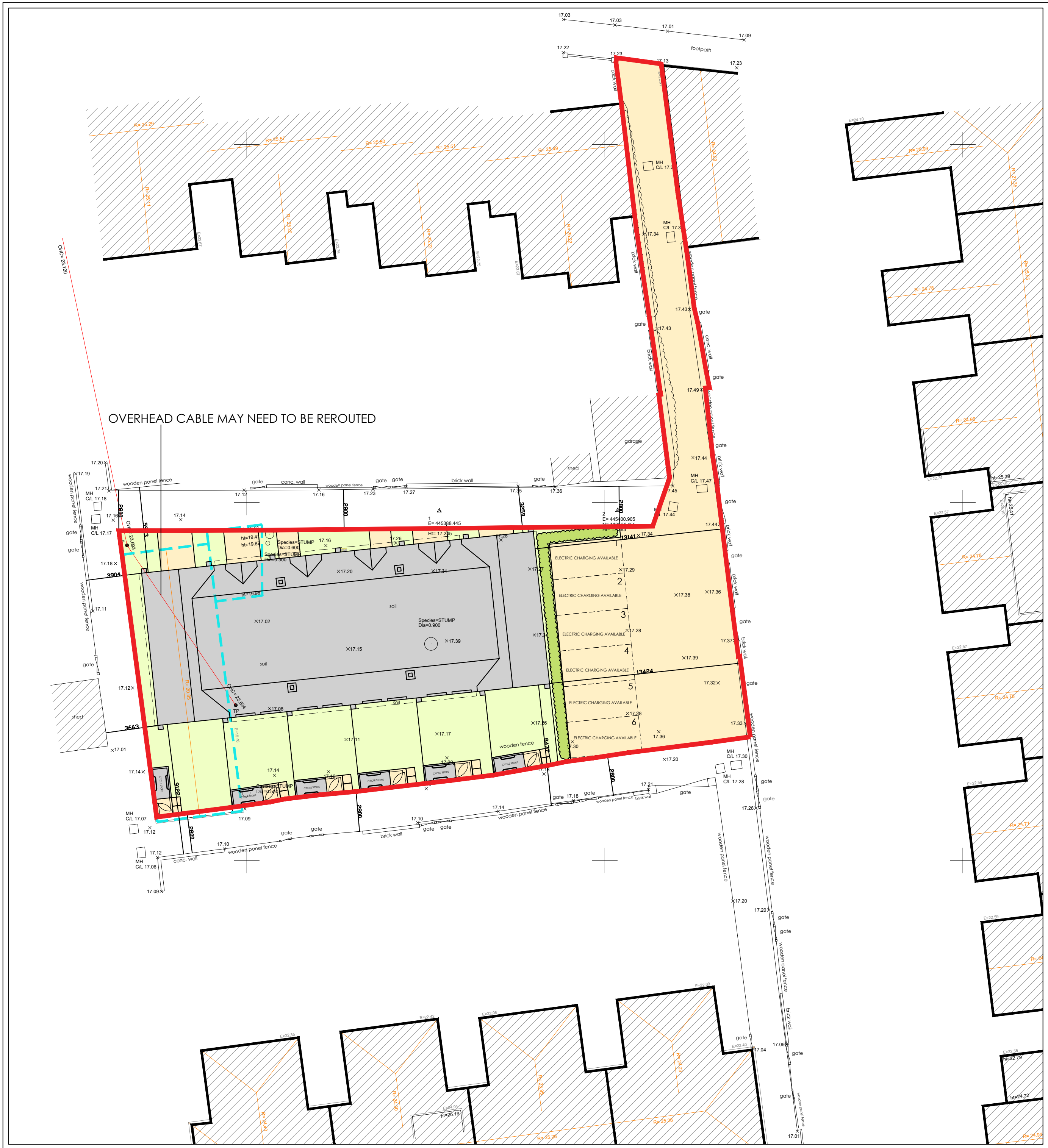
SITE, BLOCK AND LOCATION PLAN

scale	AS SHOWN @ A1	checked	
date	JULY 2024	drawn	JA
9908 / 100		A	B C

ARC Architecture Ltd.

Chapel Studios, 14 Purewell,
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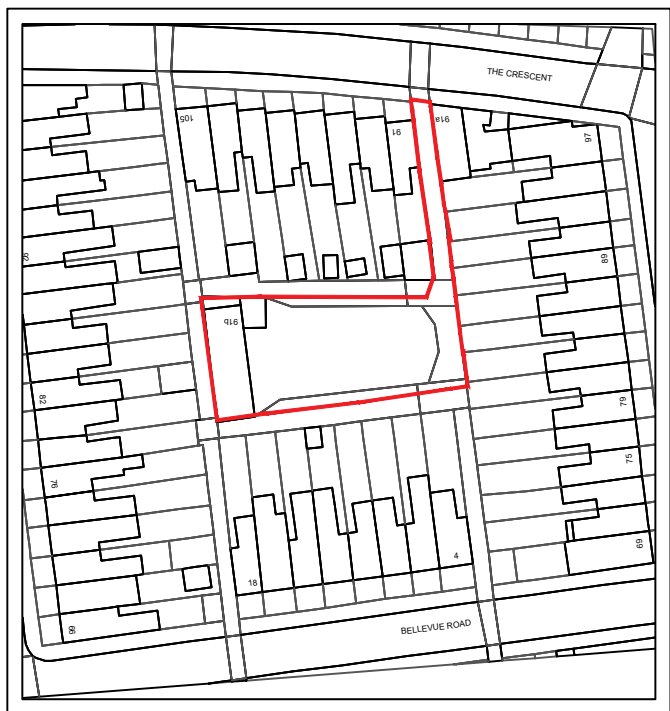
Tel: +44 (0)1202 479919
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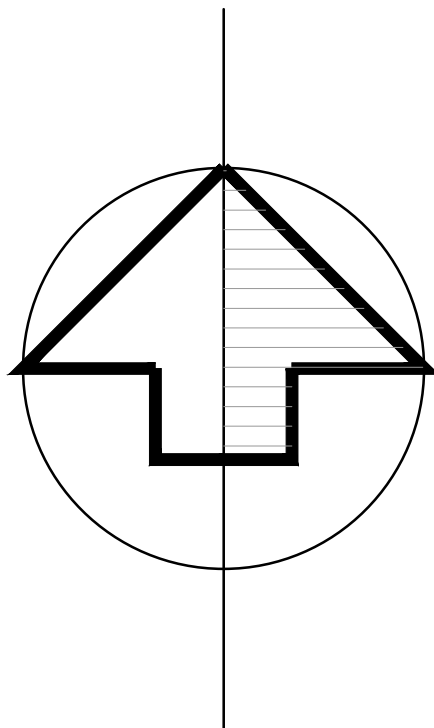
SITE PLAN
SCALE 1:200
BASED ON TOPO INFORMATION



BLOCK PLAN
SCALE 1:500
BASED ON O.S INFORMATION
O.S LICENCE NUMBER 100007080



LOCATION PLAN
SCALE 1:1250
BASED ON O.S INFORMATION
O.S LICENCE NUMBER 100007080



DESIGNERS RISK ASSESSMENT

Building Products and Construction Execution Hazards

The design team have highlighted unusual and significant risks only that may not be obvious to a competent contractor. They are to assist with risk reduction only and are not necessarily comprehensive. It is assumed that all works will be carried out by a competent contractor following good site management, site practice procedures, to an approved method statement (where appropriate) and in accordance with HSE guidance.

The proposed works are designed on a well established method of construction which can be carried out by a competent contractor. However, should the contractor find any area of concern he must inform the designer in order that appropriate action can be taken.

For significant hazards specific to this project see the following:

GENERAL NOTES:

- Principal Contractor to provide method statements for the safe working practice for: demolition, excavations, cutting of materials, support of adjacent structures, protecting personnel, neighbours & the public, working at height including crash bags & fall restraint systems.
- Principal Contractor to ensure Temporary Works Designer and Coordinator appointed for all propping works for structural alterations of existing building, including temporary guardrail and edge protection around voids and stairwells.
- This Designers Risk Assessment should be passed on to the Appointed Principal Designers and/or Principal Contractor carrying out the next phase of works on this site.

INFORMATION

CDM - PRE-CONSTRUCTION INFO FROM CLIENT

- 1) Topographical Survey
- Outstanding CDM information remains as residual risk, please request ARC appendix C for full list requested.

DESIGN INFORMATION

Further design info to be provided at subsequent stages of design / building regulations process

CONSTRUCTION RISKS

- MANUAL HANDLING
- USE OF MACHINERY
- DUST POLLUTION
- LOUD OR EXTENDED PERIODS OF HIGH NOISE LEVELS
- STORAGE OF MATERIALS
- STRUCTURAL STABILITY OF INCOMPLETE WORKS
- BURNS - HEAT AND CHEMICAL
- PROPOSED BUILDING IN CLOSE PROXIMITY TO BOUNDARY
- WORKING AT HEIGHT
- CONSTRUCTION ACCESS
- PROXIMITY TO HIGHWAYS / FOOTPATHS
- ACCESS ARRANGEMENTS FOR MEMBERS OF PUBLIC DURING CONSTRUCTION
- LARGE / HEAVY GLAZING UNITS

UNKNOWN UNDERGROUND SERVICES

Location and nature of all existing underground services to be ascertained and mitigation / plan of works to be devised by specialist prior to commencement.

FLAT ROOF ACCESS

Roof access for construction to be undertaken by specialist using specialist equipment. e.g. scaffolding, appropriately designed and installed man safe system by specialist designer.

MAINTENANCE RISKS

CHANGING LIGHT BULBS

No lighting or electrical fixtures or fittings to be positioned above or close to double height space.

or

lighting or electrical fixture above double height space to be maintained by specialist contractor using safe method e.g. scaffolding or lowering light fitting.

CLEANING WINDOWS

Windows and balcony glass above ground floor level to be cleaned from ground level by specialist using specialist equipment. e.g. long reach and clean systems.

CLEANING GUTTERS

Gutters to be cleaned from ground level by specialist using specialist equipment. e.g. long reach and clean systems where possible. Parapets and valleys to be accessed when required via scaffolding - to be assembled by a specialist.

FLAT ROOF ACCESS

Plant or apparatus on the roof to be kept to a minimum and positioned away from edges/ potential falls.

Roof access for maintenance to be undertaken by specialist using specialist equipment. e.g. permanent guarding / scaffolding / appropriately designed and installed man safe system by specialist designer.

IN - USE RISKS

FLOOD RISK

SUDS plan to be designed at building regulations phase to provide excess surface water drainage

GAS PRESENCE

Potential for presence of Gas (various types) to be investigated. If present, specialist to provide design to negate.

INTERNAL GUARDING

To be provided where openable window cills are set below 1100mm

END USER GUIDANCE FOR FUTURE WORKS

End user manual to ensure an awareness of any construction that must not be breached i.e. fire line to metal or timber frame buildings, in the event of future building works.

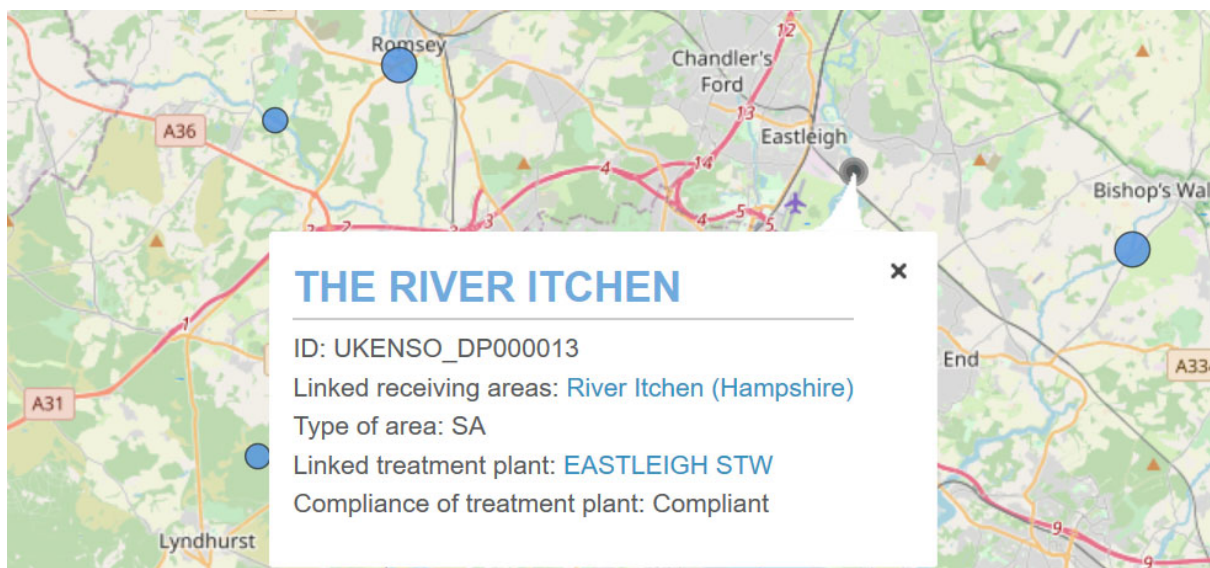
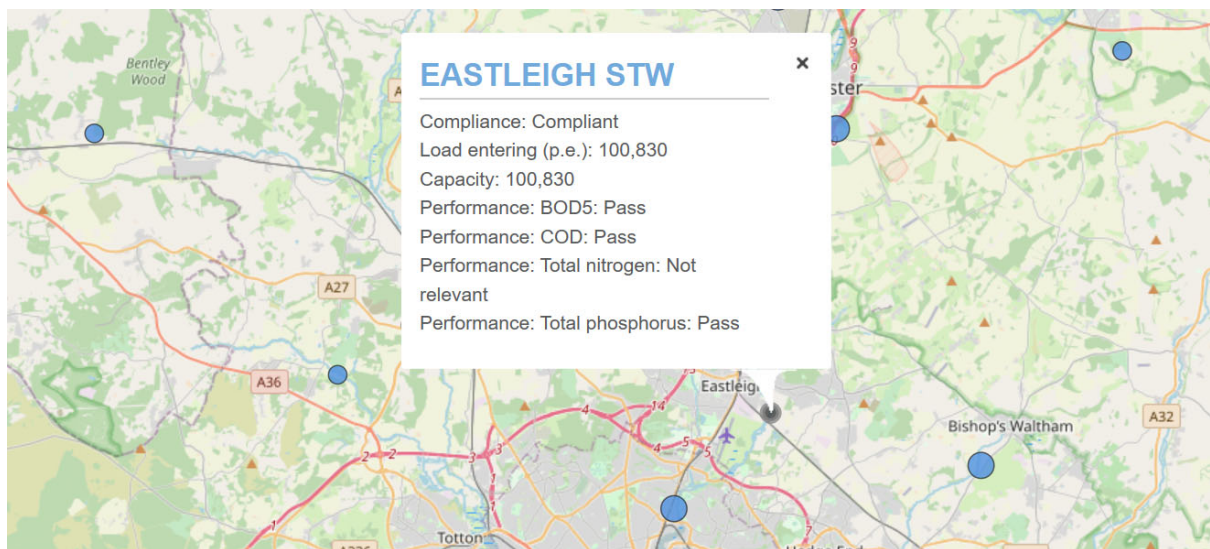
DEMOLITION RISKS

REFURBISHMENT AND DEMOLITION SURVEY

Hazardous material survey to undertaken prior to any on site works commencing - including stripping out.

- UNKNOWN OR UNIDENTIFIED SERVICES
- MANUAL HANDLING
- USE OF MACHINERY
- DUST POLLUTION
- LOUD OR EXTENDED PERIODS OF HIGH NOISE LEVELS

Appendix B



Agglomerations : 1



Appendix C

Water infrastructure information			
Description of required information	Data entry column - user inputs required	Additional data entry column - user inputs may be required	
Date of first occupancy (dd/mm/yyyy):	01/07/2026		
Average occupancy rate (people/dwelling or people/unit):	2.40		
Water usage (litres/person/day):	120		
Development Proposal (dwellings/units):	6		
Include deductible acceptable loading?	Yes		
Wastewater treatment works:	Chickenhall Eastleigh WwTW		
Current wastewater treatment works P permit (mg TP/litre):	0.60		
Current wastewater treatment works N permit (mg TN/litre):	25.00		
Not applicable	Not applicable		
Not applicable	Not applicable		
Post 2030 WwTW P permit (mg TP/litre):	0.25		
Post 2030 WwTW N permit (mg TN/litre):	8		
Final calculation of nutrient load from wastewater			
Description of values generated		Values generated	
Post-2030 wastewater nutrient loading			
Additional population (people):	14.40		
Wastewater by development (litres/day):	1728.00		
Annual wastewater TP load (kg TP/yr):	0.14		
Annual wastewater TN load (kg TN/yr):	4.54		
Pre-2030 wastewater nutrient loading			
Annual wastewater TP load (kg TP/yr):	0.34		
Annual wastewater TN load (kg TN/yr):	15.78		
Not applicable			
Not applicable	Not applicable		
Not applicable	Not applicable		

Current land use information				
Description of required information	Data entry column - user inputs required			
Operational catchment:	Itchen			
Soil drainage type:	Freely draining			
Annual average rainfall (mm):	800.1 - 850			
Within nitrate vulnerable zone (NVZ):	Yes			
Current land uses				
Existing land use type(s) - user inputs required	Area (ha) - user inputs required	Annual phosphorus nutrient export (kg TP/yr)	Annual nitrogen nutrient export (kg TN/yr)	Notes on data
Commercial/industrial urban land	0.08	0.10	0.66	Not applicable
		0.00	0.00	Not applicable
		0.00	0.00	Not applicable
		0.00	0.00	Not applicable
		0.00	0.00	Not applicable
		0.00	0.00	Not applicable
		0.00	0.00	Not applicable
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		0.00	0.00	Not applicable
		0.00	0.00	Not applicable
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		0.00	0.00	Not applicable
		0.00	0.00	Not applicable
		0.00	0.00	Not applicable
		0.00	0.00	Not applicable
Totals:	0.08	0.10	0.66	

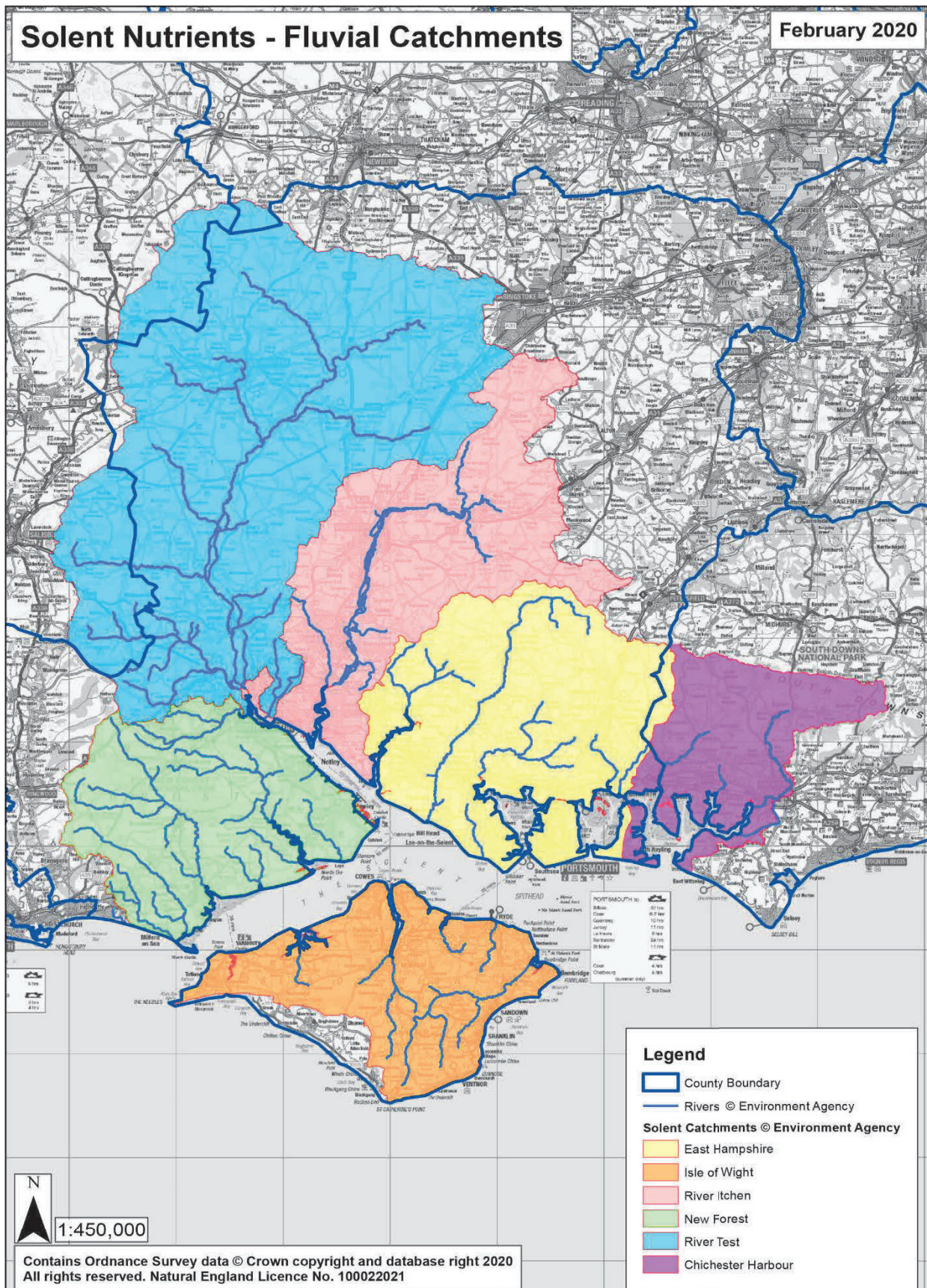
Future land uses			
New land use type(s) - user inputs required	Area (ha) - user inputs required	Annual phosphorus nutrient export (kg TP/yr)	Annual nitrogen nutrient export (kg TN/yr)
Residential urban land	0.08	0.13	1.23
		0.00	0.00
		0.00	0.00
		0.00	0.00
		0.00	0.00
		0.00	0.00
		0.00	0.00
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		0.00	0.00
Totals:	0.08	0.13	1.23

SuDS information										
New land use type(s) within SuDS catchment area - user inputs required	SuDS catchment area (ha) - user inputs required	Percentage of flow entering the SuDS (%) - user inputs required	Annual phosphorus inputs to SuDS feature(s) (kg TP/yr)	Annual nitrogen inputs to SuDS feature(s) (kg TN/yr)	Name of SuDS feature(s) - user inputs required	TP removal rate for features - user specified (%) - user inputs required	TN removal rate for features - user specified (%) - user inputs required	Annual phosphorus load removed by SuDS (kg TP/yr)	Annual nitrogen load removed by SuDS (kg TN/yr)	Notes on data
Residential urban land			0.00	0.00				0.00	0.00	Not applicable
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			0.00	0.00				0.00	0.00	Not applicable
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			0.00	0.00				0.0		

APPLICANT DOES NOT SEEK ANY DISCOUNT TO THE FUTURE LAND USE IMPACT (STAGE 3)

Total nutrient budget calculations	
Description of values generated	Values generated
Wastewater TP load (kg TP/year):	0.14
Net land use TP change (kg TP/year):	0.04
P budget (kg TP/year):	0.18
P budget + 20% buffer (kg TP/year):	0.21
Wastewater TN load (kg TN/year):	4.54
Net land use TN change (kg TN/year):	0.57
TN budget:	5.11
TN budget + 20% buffer:	6.14
Annual nutrient budget	
The total annual phosphorus load to mitigate is (kg TP/yr):	0.21
The total annual nitrogen load to mitigate is (kg TN/yr):	6.14
Pre-2030 nutrient budget	
The total annual phosphorus load to mitigate is (kg TP/yr):	0.45
The total annual nitrogen load to mitigate is (kg TN/yr):	19.62
Not applicable	
Not applicable	Not applicable
Not applicable	Not applicable

Figure 1 Solent Catchment Area Contains public sector information licensed under the Open Government Licence v3.0



Appendix D

CONDITIONS AND LIMITATIONS OF NITROGEN NUTRIENT ASSESSMENT

May 2020

Aqua Callidus Consulting Ltd is constituted as a limited liability company in accordance with the Companies Act 1989 (with registered number 11390910 and with its registered office at Kintyre House, 70 High Street, Fareham, Hants, PO16 7BB).



1. The report is confidential to the clients stated in the report and has been prepared to their instructions for their own purposes and it is not permitted to disclose this report to other parties (except NHBC, Local Authority, the Client's own Solicitors and Professional Advisers) without the prior consent of Aqua Callidus Consulting Ltd.
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4. Aqua Callidus Consulting Ltd disclaims any responsibility to the Client and others in the respect of any matters outside the scope of this report.
5. No liability for the contents of this report is accepted to any parties other than the client stated in the report.
6. Unless stated otherwise the nitrogen assessment is based on site specific information provided by the client and manufacturers and wastewater companies public information on the performance of wastewater treatment plants and works. No liability is accepted for the accuracy of such third party information.
7. Unless stated otherwise the nitrogen assessment is undertaken as a desktop assessment and no site visit has been made.