

Site:	York Road, Block J
Client:	Chichester Greyfriars HA
Job Number:	784-B064952
Report Type(s):	Nutrient Balancing Assessment
File Location:	M:\784-B046978_Bognor_Road__Chichester\60 Project Output\63 Published\

INTRODUCTION

Tetra Tech was appointed by Chichester Greyfriars HA on the 17th January 2024 to calculate the change in nutrient outputs from existing to future use associated with the proposed development on York Road.

The proposed development comprises the construction of two 1-bedroom residential flats, landscaping, parking, drainage, and associated works. Refer to Appendix C for the proposals used for this assessment.

The calculations are required in response to recent consultation with Natural England on residential projects in the vicinity of the Solent following the findings of the Integrated Water Management Study for South Hampshire, published by the Partnership for Urban South Hampshire¹. The calculator was used to establish the Total Nitrogen (TN) for the proposed development and also the maximum TN load as a result of land use changes associated with the development proposals.

Due to the uncertainty over whether new development can be accommodated by existing wastewater treatment infrastructure without causing harm to coastal European sites, Natural England advise that all residential development should achieve nitrogen neutrality.

This report has been prepared by Consultant Ecologist Chloe Mockridge and the conditions pertinent to it are provided in Appendix A.

METHODOLOGY

To make the assessment, the following guidance documents were used:

Advice for development proposals with the potential to affect water quality resulting in adverse nutrient impacts on habitats sites (Natural England, 16th March 2022);
Nutrient Neutrality Generic Methodology Edition 1 (Natural England and Ricardo Energy and Environment, November 2022);
Nutrient Budget Calculator Guidance Document (Natural England and Ricardo Energy and Environment, March 2022); and
Solent Nutrient Budget Calculator Version 2.4 (Natural England and Ricardo Energy and Environment, January, 2024).

¹ PUSH, (2018), Integrated Water Management Study, [online] Available at <https://www.push.gov.uk/wp-content/uploads/2018/07/IWMS-Appendix-1.pdf>, Accessed February 2024.

ASSESSMENT

The assumptions relevant to this this project in addition to those included in the updated Natural England methodology are provided in Table 1.

Despite the proposals of two one bedroom units, Chichester District Council request that the occupancy rate be based on the adopted methodology which is an occupancy rate of 2.4 persons per dwelling, regardless of bedroom site.

The annual average rainfall was obtained using the National River Flow Archive² and the results can be viewed in Plate 1.

Table 1: Project Assumptions

Number of proposed units:	2
Occupancy rate based on Southampton occupancy rates:	2.4
Water consumption:	120 l/person
The total site area:	0.09 ha
The current land uses are:	0.09 ha – Residential urban land
The future land uses will be:	0.09 ha – Residential urban land
The wastewater from the site will be treated at this wastewater treatment works (WwTW):	Chichester
The consent limit for the WwWT is:	7 mg/l TN
Surface water catchment:	Western Streams
Standard annual average rainfall:	800.1 - 850 mm
Soilscape category:	Naturally wet
Nitrate Vulnerable Zone:	Yes

² UK Centre for Ecology & Hydrology. National River Flow Archive.
<https://nrfa.ceh.ac.uk/data/station/spatial/42019>. Accessed February 2024.



Plate 1: Results of average rainfall using National River Flow Archive, site is denoted by red x.

The results using the method for determining the nitrogen budget for the proposals are provided in Table 2.

Table 2: Summary of the results

Calculating Total Nitrogen (TN) Load From Development Wastewater (A)	Calculating TN Load From Current Land Use (B)	Calculating TN Load From Future Land Uses (C)	Calculating Net Change in TN From the Development (A-B+C) x 1.2
Stage 1	Stage 2	Stage 3	Stage 4
1.33 Kg/TN/yr	1.47 Kg/TN/yr	1.47 Kg/TN/yr	1.60 Kg/TN/yr

The calculations show that the development would result in an increase in nitrogen load of 1.60 Kg/TN/yr.

Due to the small size of the site, lack of land available for SuDS or land to offset, it is proposed that the predicted increase in TN output is offset through an appropriate scheme which is currently to be confirmed. Currently, Chichester District Council have no mitigation scheme running to offset Nitrogen. As of January 2024, Partnership for South Hampshire list one potential mitigation scheme, Chilgrove Farm for Western Streams, which the applicant will purchase credits from to secure mitigation.

It is therefore considered that in the absence of mitigation or amendments to the scheme, the development proposals would still have the potential to result in an adverse effect on the integrity of the Solent European sites. The approach to mitigation will be to offset this increase in TN using nutrient credits provided by a suitable identified mitigation site to provide a net decrease in TN output. Provided this is secured, this will result in a net decrease in TN and avoid an adverse effect on the integrity of the Solent and Southampton Water SPA.

The Solent Nutrient Budget Calculator has been added to the report under Appendix B.

Document Control			
Revision:	2	Status:	Final
Date:	13/02/2024		
Chloe Mockridge Consultant Ecologist	Trish Holden Principal Ecologist	Danny de la Hey Principal Ecologist	
Summary of changes: n/a			

Document Control			
Revision:	3	Status:	Final
Date:	11/03/2024		
Chloe Mockridge Consultant Ecologist	Trish Holden Principal Ecologist	Danny de la Hey Principal Ecologist	
Summary of changes: Request of Council to re-run Calculator with Occupancy Rate of 2.4			

APPENDIX A: REPORT CONDITIONS

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The whole of the report must be read as other sections of the report may contain information which puts into context the findings in any executive summary.

The performance of environmental protection measures and of buildings and other structures in relation to acoustics, vibration, noise mitigation and other environmental issues is influenced to a large extent by the degree to which the relevant environmental considerations are incorporated into the final design and specifications and the quality of workmanship and compliance with the specifications on site during construction. Tetra Tech accept no liability for issues with performance arising from such factors.

APPENDIX B: SOLENT NUTRIENT BUDGET CALCULATIONS

See associated 784-B046978 York Road Solent Nutrient Budget Calculator - Version 2.4

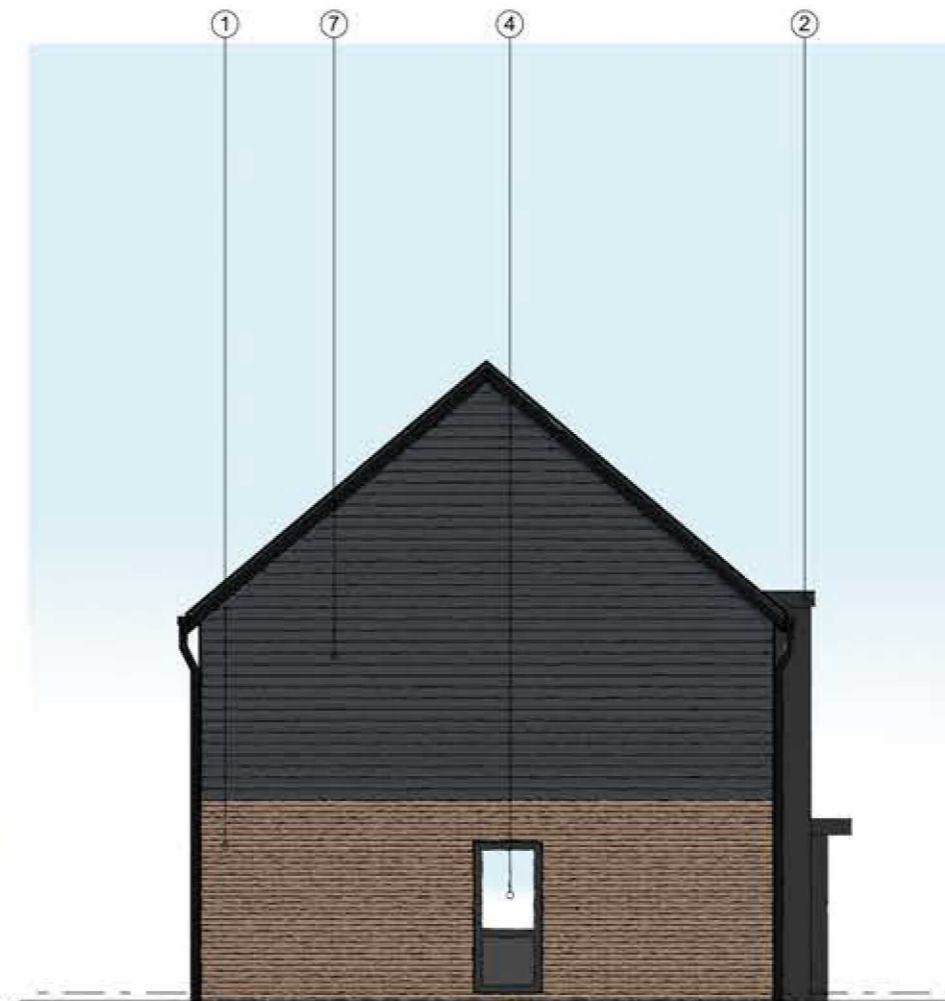
APPENDIX C: SITE PROPOSALS



FIRST FLOOR 1:100



FRONT ELEVATION 1:100



SIDE ELEVATION [1] 1:100

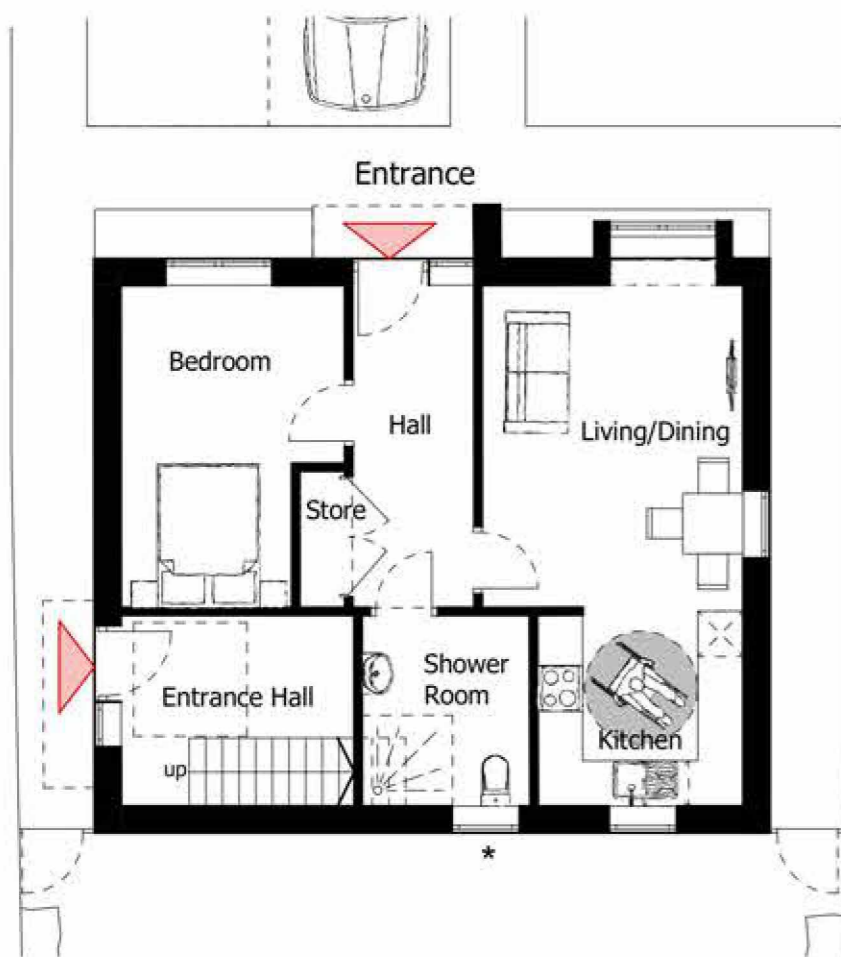
MATERIALS KEY

- 1. Facing Brickwork
- 2. Metal Cladding in Dark Grey
- 3. Slate Style Roof Tiles
- 4. uPVC Windows in Dark Grey
- 5. uPVC Rainwater Goods & Fascias in Dark Grey
- 6. Solid Dark Grey Panel
- 7. Eternit Type Boarding

* Obscure Glazing

KEY

Entrance



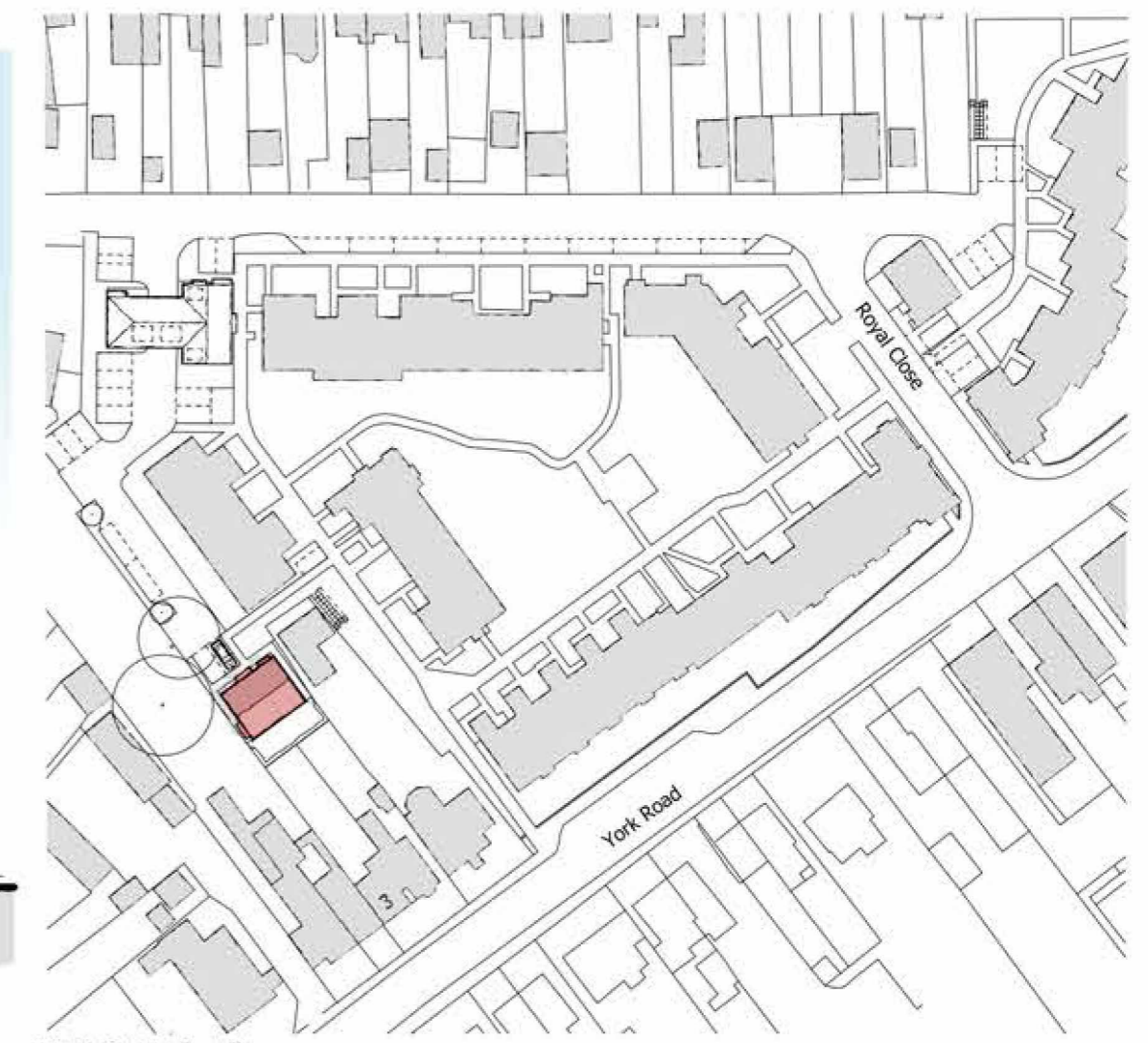
GROUND FLOOR 1:100



REAR ELEVATION 1:100



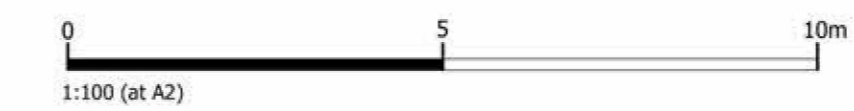
SIDE ELEVATION [2] 1:100



KEY PLAN [nts]



REV	DESCRIPTION	DATE	AUTHOR	CHK'D	NOTES
A	Issued for Planning	18.09.23	CW	SL	-



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PROJECT
Proposed Development |
Rear Gardens to 1-2 York Rd
CLIENT
Chichester Greyfriars
Housing Association
DRAWING
BLOCK J - PLANS &
ELEVATION

JOB NO.
B046978
SCALE @ A2
1:100
DATE
03/08/2023

DRAWING NO.
05
AUTHOR/CHK'D
CW/SL
REVISION
A



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