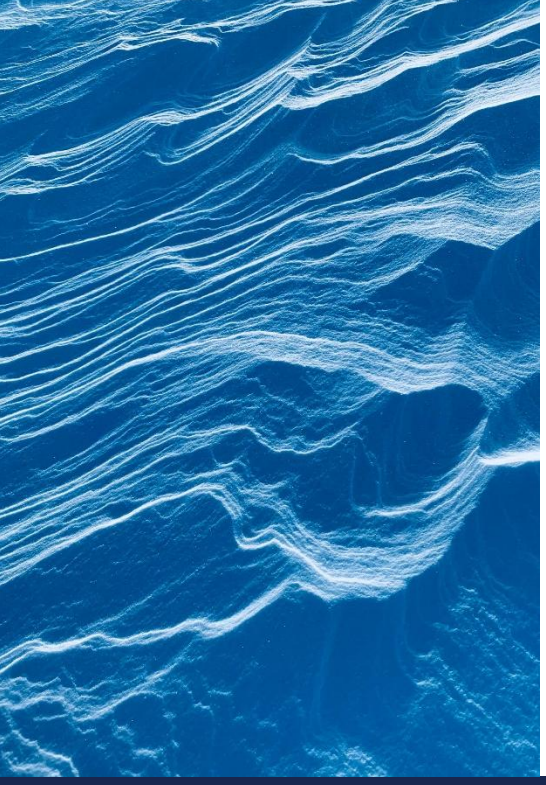




Technical Note No.1
AEG6538_RH20_Pulborough

Site Address: Tesla Engineering
Water Lane
Storrington
RH20 3EA

aegaea
Flood risk, water and environment

UK Experts in Flood Modelling, Flood Risk Assessments, and Surface Water Drainage Strategies

aegaea
Flood risk, water and environment

Document Issue Record

Project: Technical Note No.1 (Validation Exercise)

Reference: AEG6538_RH20_Pulborough

Site Location: Tesla Engineering, Water Lane, Storrington RH20 3EA

Date: 06/11/2025

Proposed Development: Construction of a new industrial unit, unit 12A Machine Hall

Please Note:

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Introduction

1.1. This Technical Note No.1 (Validation Exercise) which is to be read in conjunction with the Water Neutrality Statement submitted to Horsham District Council has been prepared by Aegaea Ltd at the request of Tesla Engineering (the Client) in response to a request for further information from Natural England. Natural England have in their letter sent by e mail to Horsham District Council, reference 516008 dated 30th June 2025, requested robust information to support the water savings achieved by the use of flow restrictors. An extract from the letter is copied below for reference.

> **SUMMARY OF NATURAL ENGLAND'S ADVICE**
>
> **FURTHER INFORMATION REQUIRED TO DETERMINE IMPACTS ON DESIGNATED SITES**
>
> As submitted, the application could have potential significant effects on Arun Valley Special Area of Conservation (SAC), Special Protection Area (SPA) and Ramsar site as well as Amberley Wild Brooks site of Special Scientific Interest (SSSI) and Pulborough Brooks SSSI. Natural England requires further information in order to determine the significance of these impacts and the scope for mitigation.
>
> The following information is required:
>
> - Robust evidence to support the water savings achieved by the use of flow restrictors
>
> Without this information, Natural England may need to object to the proposal.
>
> Please re-consult Natural England once this information has been obtained.
>
> Natural England's further advice on designated sites/landscapes and advice on other issues is set out below.

1.2. To achieve water neutrality the Water Neutrality Statement concluded the following;

1.Unit 2 to be retrofitted with flow restrictors on kitchen and basin taps to reduce flow to 6l/min and 4l/min respectively.

2.Unit 12A to use same fittings as Unit 11 but with flow restrictors on kitchen and basin taps to reduce flow to 6l/min and 4l/min respectively.

1.3. The additional water demand for Unit 12A using Breeam Wat01 was calculated as 443.53l/d. Implementing the changes referred to in bullet point 1 above on Unit 2 calculated using Breeam Wat 01 resulted in a water saving of 460.53l/d.

1.4. This Technical Note No.1 focuses on Unit 2, Unit 12A is under construction.

Background

1.5. As discussed above further robust information has been requested by Natural England with respect to the flow savings achieved by the use of flow restrictors. The client has retrofitted flow restrictors to the WC basin taps and kitchen taps in Unit 2. The client has also in Unit 2 replaced the WC basin taps with push button taps, replaced the 6l single flush WCs with 6/4l dual flush WC's and removed the water heaters in the WCs.

1.6. To verify the water savings a site visit was undertaken by Aegaea on the 25th October 2025.See Appendix 1

2.Site Visit - Unit 2 after actual retrofit

2.1. The table below summarizes the readings/observations made during the site visit.

Table 1 - Fittings installed in Unit 2 after retrofit

Installation	Number	Unit of Measure	Source
WC (Dual Flush)-Female	1	4.5l (6l)	Manufacturer Standard
WC (Dual Flush)-Male	2	4.5l (6l)	Manufacturer Standard
WC (Dual Flush)-Disabled Male/Female	1	4.5l (6l)	Manufacturer Standard
WC (Urinals)	2 bays	9l (9l)	Manufacturer Standard
Taps (excluding kitchen taps/kitchenette)	8	3.075l/min (21.41l/min)	Measured by Aegaea
Kitchen taps/kitchenette	2	4.8l/min (23.30l/min)	Measured by Aegaea

Notes

- Numbers in brackets were the existing flows (prior to retrofit)
- No change to WC (Urinals)

2.1 The following supporting comments show how the water consumption for each new fitting type has been calculated in Table 1 above.

Supporting Comments of Table 1

2.2. WC's (Dual Flush)- the average flush capacity is 4.5l and is derived by multiplying the number of units (4) by the manufacturers stated dual flush capacity (((6l*1)+(4l*3))/4=4.5l) for each unit and dividing the total capacity by the number of units (4).

2.3. Taps (excluding kitchen/utility room)- the average flow 3.075l/min stated above is derived by multiplying the number of units (8) by the measured flow for each unit. In accordance with Breeam Wat 01 for push button taps if the timed flow is below 20s it is multiplied by 2, if the timed flow is above 20s it is multiplied by 1. The numbers are than multiplied by 1.5 prior to input into the Breeam Wat 01 water calculator.

Calculation is as follows;

Average flow= ((((0.8+1.0+1.0+1.6+1.1+0.75+0.5) *2.0) + (2.9*1) *1.5)/8)

Average Flow = (((13.5) +(2.9)) *1.5)/8)

Average Flow = 3.075l/min

2.4. Kitchen taps/kitchenette- the average flow (4.8l/min) stated above is derived by multiplying the number of units (2) by the measured flow rate for each unit (4.8l/min+4.8l/min) and dividing the total flow by the number of units (2).

3.Conclusion

3.1. Unit 2 has been retrofitted with flow restrictors on kitchen and WC basin taps. The client has also replaced the WC basin taps with push button taps.

3.2. The average measured flows are now 4.8l/min for the kitchen taps which is less than the required 6l/min and 3.075l/min for the WC basin taps which is less than the required 4l/min.

3.3. Thus, water neutrality has been achieved for Unit 12A.

3.4. In addition, the client has Unit 2 also replaced the existing 6l single flush WCs with 4/6l dual flush WCs this will increase further the water savings.

APPENDIX 1 – SURVEY OF FITTINGS FOR UNIT 2 UNDERTAKEN BY AEGAEA ON 25th OCTOBER 2025.

Unit	Fitting	No	Manufacturer	Flow	Photgraphic Evidence
Unit 2 Male	WC (Dual Flush)	1	Cove	6/4l	
Unit 2 Male	WC (Dual Flush)	1	Cove	6/4l	
Unit 2	Kitchen Tap	1	Not known	Cold 4.8l/m Hot 4.8l/m	

Unit 2	Kitchen Tap Flow Reducers	2	Cottam & Preedy CP961 Flow Regulator 6l/m.		
Unit 2	Water Heater	1			
Unit 2	Hot/Cold Water Dispense	1			

Unit 2 Female	WC (Dual Flush)	1	Cove	6/4l	
Unit 2 Disabled	WC (Dual Flush)	1	Cove	6/4l	
Unit 2 Disabled	Push Button Basin Taps Flow Reducers	2 2	Not known Cottam & Preedy CP961 Flow Regulator 4l/m.	Cold 800ml/11s Hot 1000ml/11s	

Unit 2 Male	Push Button Basin Taps Flow Reducers	2 2	Not known Cottam & Preedy CP961 Flow Regulator 4l/m.	Cold 1100ml/17s Hot 2900m/26s	
Unit 2 Male	Urinal (2 bowels)	1	Not known	9l	
Unit 2 Male	Push Button Basin Taps Flow Reducers	2 2	Not known Cottam & Preedy CP961 Flow Regulator 4l/m.	Cold 500ml/7s Hot 750/8s	

Unit 2 Female	Push Button Basin Taps Flow Reducers	2 2	Not known Cottam & Preedy CP961 Flow Regulator 4l/m.	Cold 1000ml/9s Hot 1600ml/18s	