WATER NEUTRALITY STATEMENT FOR THE PROPOSED DEVELOPMENT AT 48 TO 50 SPRINGFIELD ROAD, HORSHAM, WEST SUSSEX, RH12 2PD.

Planning Reference: DC/24/1595
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Executive Summary

H2Ogeo provided this Water Neutrality Statement to accompany a planning application for the proposed change of use of an office to a three-bedroom residential dwelling at 48 to 50 Springfield Road in Horsham West Sussex.

The Water Neutrality Statement demonstrates that the proposed development, with efficient fixtures and fittings, can achieve water neutrality.

Fixtures and fittings will meet Performance Level 3 of BREEAM NC 2018.

With this mitigation in place the proposed development will not contribute to an existing adverse effect upon the integrity of the internationally designated Arun Valley Special Area of Conservation, Special Protection Area and Ramsar sites by way of increased water abstraction.

1 Introduction

Natural England cannot, with certainty, conclude that the Sussex North Water Supply Zone, that includes water supply from a groundwater abstraction, is not having an adverse effect on the integrity of:

- Arun Valley Special Area Conservation (SAC);
- Arun Valley Special Protection Area (SPA); and
- Arun Valley Ramsar Site.

Natural England have advised that developments within this zone must not add to this impact.

The Local Planning Authority (LPA) have requested a Water Neutrality Statement is provided to accompany planning applications to demonstrate that the proposed development does not increase the rate of water abstraction for drinking water supplies above existing levels.

1.1 Scope of Work

H2Ogeo was requested to provide a proposal for a Water Neutrality Statement to support a planning application submitted to Horsham District Council (HDC) Local Planning Authority (LPA).

The Water Neutrality Statement aims to demonstrate that the proposed development will not *contribute to an existing adverse effect upon the integrity of the internationally designated Arun Valley Special Area of Conservation, Special Protection Area and Ramsar sites by way of increased water abstraction.*

The proposal was accepted and the Water Neutrality Statement is presented in this report.

A Statement of Limitations is presented at the start of this report.

1.2 Background

This Water Neutrality Statement (WNS) has been provided to support a planning application for the proposed change of Use from office (Use Class E) to a three-bed residential dwelling (Use Class C3) at 48 to 50 Springfield Road in Horsham West Sussex.

The planning drawings are presented in Annex A showing the proposed development and site location is presented in Figure 1.

1.3 Sussex North Water Resource Zone (WRZ)

Southern Water supplies water to Crawley Borough, Horsham District, the northern part of Chichester District, southern Waverley and the South Downs National Park from its Sussex North Water Resource Zone (WRZ).

Within the WRZ there are a number of water sources, one of which is the groundwater abstraction from the Hardham source, one of a number of groundwater and surface water abstractions around Pulborough[1] presented in Figure 2 along with the proposed site and boundary of the Sussex North WRZ

The Hardham Groundwater abstraction is located approximately 19km south-west of the proposed site.

[1] https://www.horsham.gov.uk/__data/assets/pdf_file/0019/104482/EYP-JBAU-XX-XX-RP-EN-0001-A1-C03-Water_Neutrality_Assessment_Part_A.pdf

2 Site Setting

The site address is 48 to 50 Springfield Road, Horsham, West Sussex, RH12 2PD and is centred on National Grid Reference: TQ17134 30837 (Easting: 517134, Northing: 130837) and presented in Figure 1.

2.1 Existing Site

The existing property consists of a two-storey office building with access off Springfield Road and at the rear from the parking area.

The existing office building has a floor area of 109.11m^2 and the planning drawings presented in Annex A show the existing layout of the property. The existing use class at the premises is Class E, this allows for Commercial, Business and Service uses on site.

2.1.1 Existing Fixtures and Fittings

The numbers of existing fixtures and fittings are summarised in the table below and presented in Figure 3:

Table 1 Existing Fixtures and Fittings

Fixture	***Number***
WC	2
Taps (excluding kitchen/utility room taps)	2
Kitchen/Utility room sink taps	1
Shower	1

2.2 Proposed Development

The proposed development is for a change of use to a three-bedroom, two storey residential building as presented in Annex A.

2.2.1 Proposed Fixtures & Fittings

As a result of the proposed development there will be an increase in mains water consuming fixtures and fittings on site, the number of proposed fixtures and fittings are shown in the table below and examples of fittings that can achieve these levels of efficiency are presented in Annex B:

Table 2 Proposed Number of Fixtures and Fittings

Fixture	***Three-Bedroom Property***
WC	4
Taps (excluding kitchen/utility room taps)	4
Kitchen/Utility room sink taps	1
Shower	2
Shower over Bath	1
Bath	1
Washing Machine	1
Dishwasher	1

3 Baseline Water Consumption

This section outlines the existing baseline water consumption for the site.

3.1 Existing Demand

The Client recently purchased the property and, despite best-efforts, has not been able to obtain previous water bills for the property.

In line with Horsham District Council's guidance, in the absence of water bills, water consumption has been modelled following flow testing by H2Ogeo on 23 September 2024.

Results of flow testing the existing office development are presented in the table below:

Table 3 Existing Fixtures and Fittings

Fixture	***Flow***	***Units***
WC – Dual Flush	3.75	Effective Flush Litres
Taps (excluding kitchen/utility room taps)	5.5	Litres/Minute
Kitchen/Utility room sink taps	8	Litres/Minute
Shower	15	Litres/Minute

Using the BREEAM New Construction 2018 Wat01 Calculator for Non Domestic Office buildings as the most appropriate calculator the daily consumption has been modelled.

The BREEAM model is presented in Annex C and summarised below:

Modelled Consumption = 36.92 Litres/Person/Day

The BREEAM model calculates anticipated staff occupancy of 12 people based on an office unit of 109.11m^2.

For conservatism and, following advice from Horsham District Council, H2Ogeo has used data derived from the Employment Densities Guide, 2nd Edition, 2010[2] that assumes 12m^2/Full Time Equivalent (FTE) for calculating the revised occupancy:

Revised Occupancy = 109.11m^2/12 = 9 Staff

The total modelled consumption = 332.28 Litres/Day for the existing office (36.92*9).

[2] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/378203/employ-den.pdf

4 Proposed Demand

The proposed demand has been calculated using the Part G Water Calculator of the Building Regulations.

It is recommended that fixtures and fittings in the proposed development meet Performance Level 3 of the BREEAM guidance and examples of the proposed fixtures and fittings are provided in Annex B.

A summary of Performance Level 3 efficiencies are presented in the Table below:

Table 4 Performance Level 3 Fixtures and Fittings

Fixture	***Performance Level 3***	***Unit***
WC	3.75	Effective Flush (Litres)
Taps (excluding kitchen/utility room taps)	5	Litres/Minute
Kitchen/Utility room sink taps	6	Litres/Minute
Shower	6	Litres/Minute
Shower over Bath	6	Litres/Minute
Bath	140	Litres to Overflow Capacity
Washing Machine	5	L/Dry Kg Load
Dishwasher	0.92	Litres/Place Setting

4.1 Occupancy

The occupancy has been derived using Horsham District Council's method of extrapolating 2011 census data, i.e. a three-bedroom property = 2.47 people.

This development has a modelled occupancy of 2.47 people.

4.2 Part G Calculations

The Part G Calculator is presented in Annex D and summarised below:

- Three-bed house = 91 Litres/Person/Day.

Total Proposed Modelled Consumption = 224.77 Litres/Day (91*2.47)

4.3 Consumption Summary

The table below identifies the existing and proposed water consumption:

Table 5 Summary of Mains Water Consumption

Existing Office (Litres/Day)	***Proposed Development (Litres/Day)***
332.38	224.77

Using the proposed fixtures and fittings and achieving performance Level 3 efficiencies under BREEAM guidelines the proposed development would be water neutral.

5 Conclusion

The proposed development, with performance Level 3 fixtures and fittings, would achieve water neutrality.

By upgrading the existing fixtures and fittings to Performance Level 3 under the BREEAM NC 2018 Standards there is a potential reduction of 107.61 litres/day across the whole building.

Table 6 Water Neutrality Conclusion

Existing (Litres/Day)	***Proposed (Litres/Day)***	***Water Neutral***
332.38	224.77	**YES**

Through installing water-efficient fixtures and fittings on site this Water Neutrality Statement demonstrates that the proposed development will not contribute to an existing adverse effect upon the integrity of the internationally designated Arun Valley Special Area of Conservation, Special Protection Area and Ramsar sites by way of increased water abstraction.

5.1 Sensitivity Testing

Whilst the Part G Calculator automatically makes allowances for 5 Litres/Person/Day for outdoor use there are no external garden areas so outdoor use would be limited to vehicle washing etc…. therefore, may not be required by residents, providing a saving of an additional 12.35 Litres/Day (5*2.47) for the proposed development.

There is adequate head-room in the calculations to achieve water neutrality even with a significant reduction in baseline consumption.

6 Figures

Figure 1 Sussex North WRZ

Figure 2 Site Location

Figure 3 Site Photolog

Figure 1 Sussex North WRZ

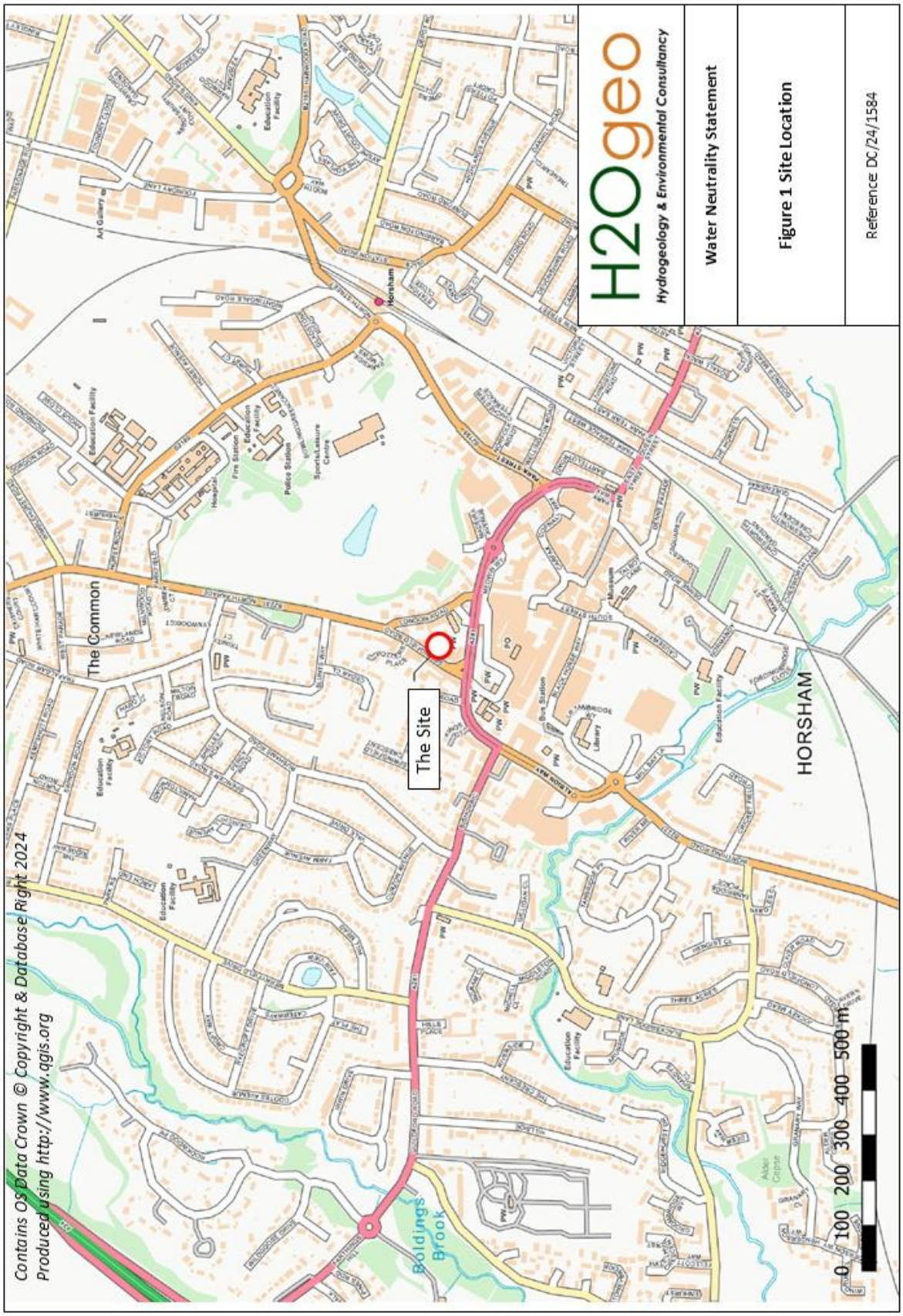


Figure 2 Site Location



3 Photolog


H2Ogeo
Hydrogeology & Environmental Consultancy
Water Neutrality Statement
Figure 3 Photolog
Reference: DC/24/1584
Office Shower-room WC
Office WC
Shower-Room Shower
Office Kitchenette Tap
Shower-Room Wash-Hand Basin

7 Annexes

Annex A - Planning Drawings

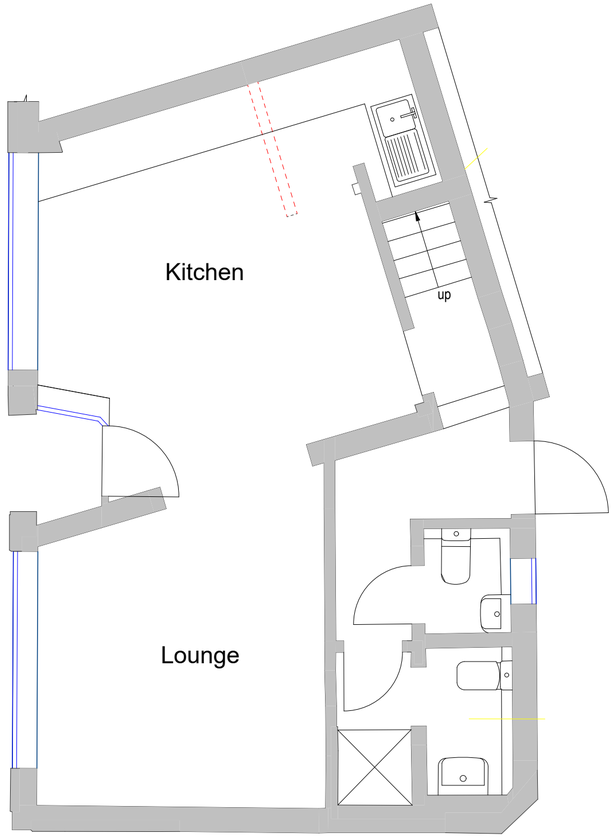
Annex B – Performance Level 3 Fixtures and Fittings

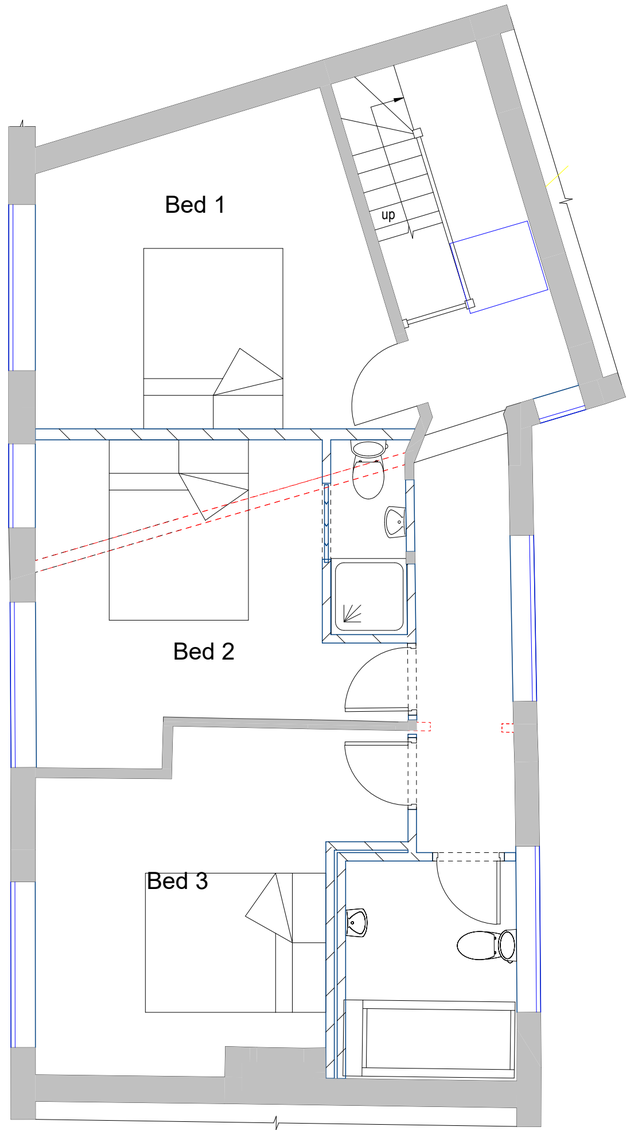
Annex C - BREEAM Calculations

Annex D – Part G Calculators

Annex A - Planning Drawings

Planning Drawing - 3 Bedroom House



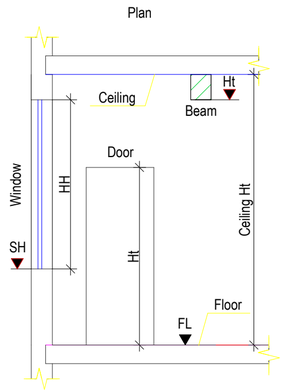


Calculations for 3 bedroom house

Ground floor - 43.78 sq m

First floor - 65.33 sq m

Total sq metrage - 109.11 sq m



- Beam on plan view
- Fireplace
- Built-in storage
- Shower
- Ceiling hole, Ceiling level change

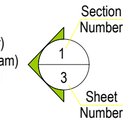
Elevation
- Roof

Section
- Ceiling
- Floor

Site plan
- Outline of a neighboring bld.
- Fence
- Landscaping
- Manhole

Abbreviations

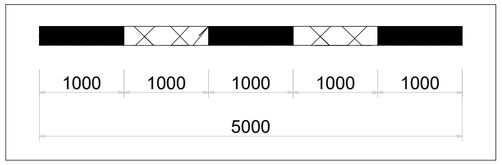
FL - Floor Level
HT - Leaf Height (Door)
HT - Bottom Level (Beam)
SH - Window Sill Level
HH - Window Height
TL - Top Level
BL - Bottom Level



ARCHITECTURAL JONES • PROJECTS

1-50 Scale

Page Size - A2



Annex B – Performance Level 3 Fixtures and Fittings

Wash-Hand Basin Mixer Taps = < 5 Litres/Minute



Bristan Capri Contemporary Basin Mixer with Eco-Click & Pop-up Waste - Chrome

Part No.: CAP-EBAS-C [redacted]

★★★★★ 3 Reviews

In Stock

Quantity - 1 + ADD TO BASKET

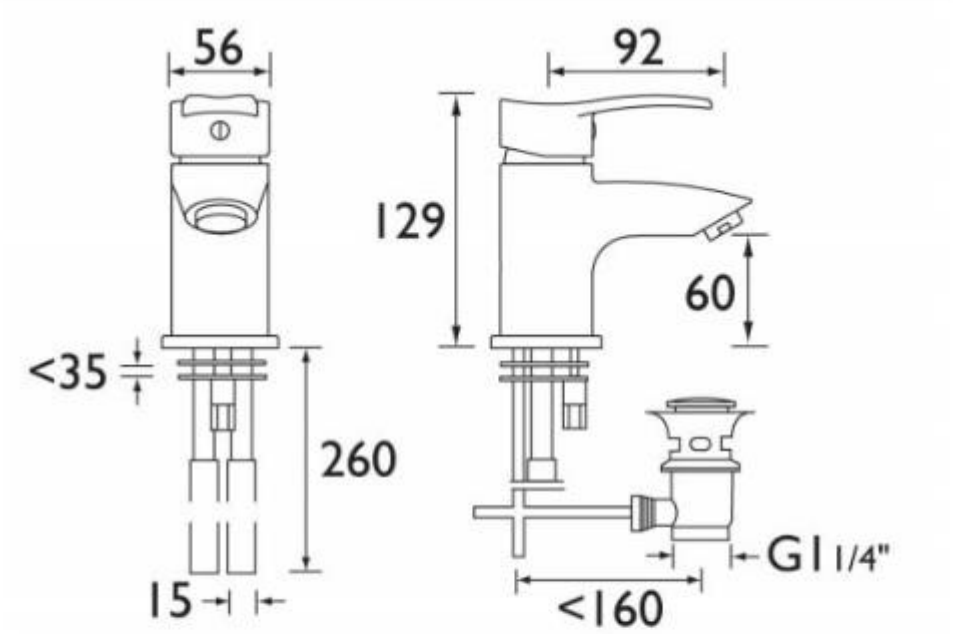
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- **FREE Standard Delivery** Over £499 to UK mainland
- **Standard Delivery** £5.94 for 2-7 working days
- **Next Day Delivery** £9.95 for delivery on Wednesday

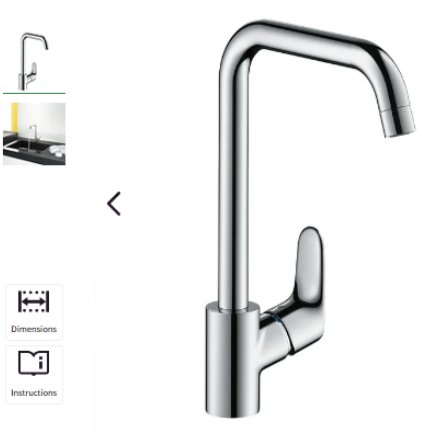
BRISTAN Browse all Bristan



Flow Rates (l/min)

System Pressure (bar)	0.2	0.5	1	2	3	5
CAP EBAS C (Mixed)	6	9.8	14	19.9	24.5	31.7
CAP EBAS C (Eco)	2.2	3.5	5.3	7.6	9.4	12

Kitchen Mixer Tap = < 6 Litres/Minute



hansgrohe Focus M41 Single Lever Kitchen Mixer 260 - Chrome

Part No.: 31820000

[redacted]

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Low Stock

Quantity 1

ADD TO BASKET

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Get It Wednesday Order in 36 minutes

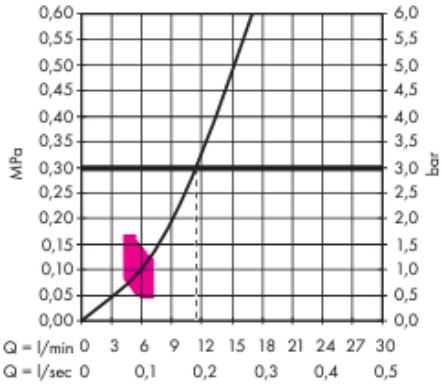
Our Delivery Options

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hansgrohe Browse all hansgrohe

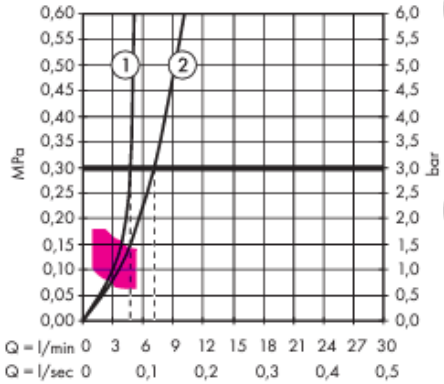
Focus M41 280 1jet

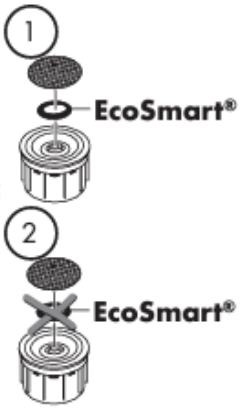
31817XXX



Focus M41 280 Eco 1jet

31827000





38

Toilet – Effective Flush = < 3.75 Litres

too. The Cove toilet has a 675mm projection and features a gloss white finish and rounded shape for a modern look. Keep the peace in your bathroom with the help of the practical soft close toilet seat, which eliminates slamming and reduces wear and tear. For a coordinated space, consider adding the matching Cove Basin with Pedestal.

Product Details

- Height: 780mm
- Width: 395mm
- Projection: 675mm
- Height of pan: 405mm
- Colour/Finish: Gloss White
- Material: Ceramic construction
- Type: Rimless close coupled toilet
- Shape: Round
- Style: Modern
- Central, Dual push-button flush (3/6ltr Flush)
- Flushing System: Rimless
- Horizontal outlet
- Internal Overflow
- Supplied with Top Fixing Polypropylene Soft Close Seat Cover
- Slow-close function
- Seat closes gently without any noise
- Cistern water inlet position: Bottom (left or right)
- CE Approved

All measurements are approximate

Images are for illustrative purposes only.

Guarantee: 5 Year (seat guaranteed for 1 year)

Comprises

(1) Cistern with Dual Flush Fittings
(1) Rimless Close Coupled Toilet Pan
(1) Top Fixing PP Soft Close Seat Cover



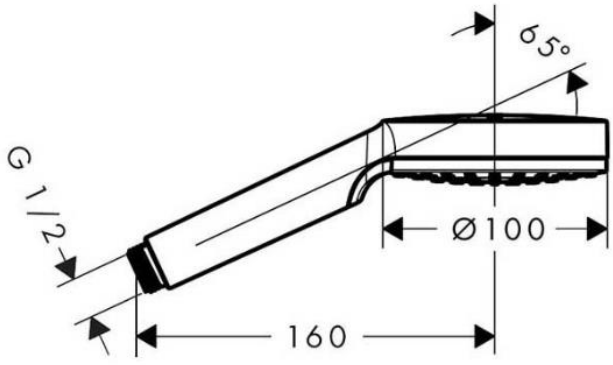
Cove Rimless Close Coupled Toilet + Soft Close Seat

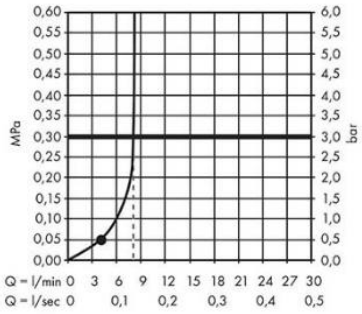
[redacted]

In Stock

ADD TO BASKET

Shower = < 6 Litres/Minute





The consumption was measured in combination with the appropriate fittings (thermostat/mixer/ in-wall valve) to reflect actual application in practice.



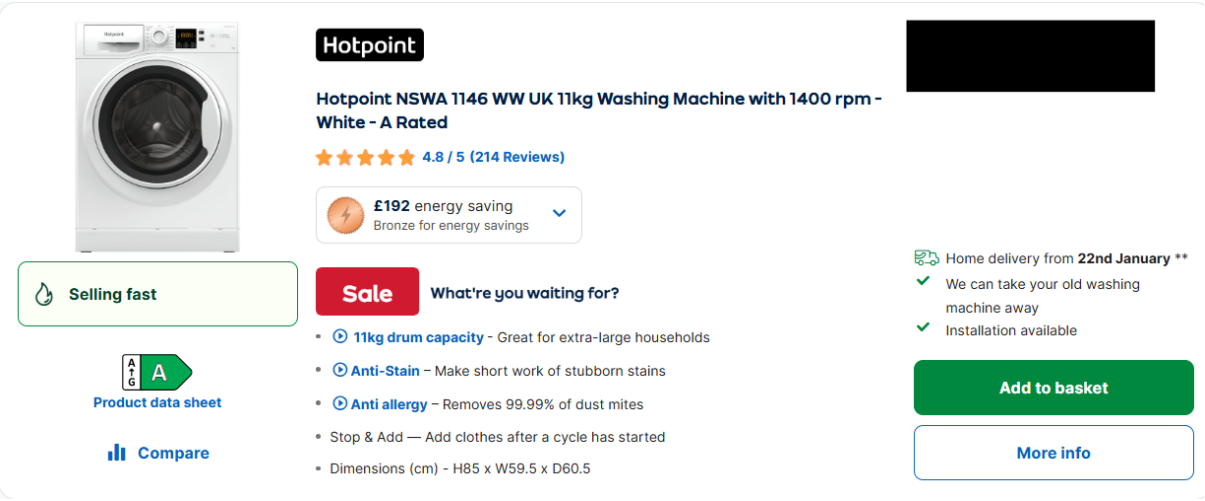
hansgrohe Crometta EcoSmart 1 Spray Hand Shower 100

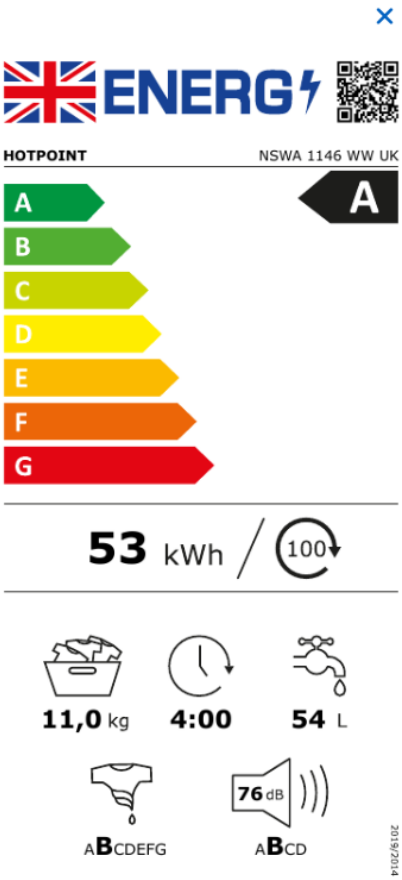
[redacted]

Low Stock

ADD TO BASKET

Washing Machine = < 5 Litres/Dry Kg Load





Dishwasher = < 0.92 Litres/Place Setting



BOSCH

Bosch Series 4 SMS4EKW06G Wifi Connected Standard Dishwasher - White - B Rated

4.9 / 5 (144 Reviews)

£398 energy saving
Gold for energy savings

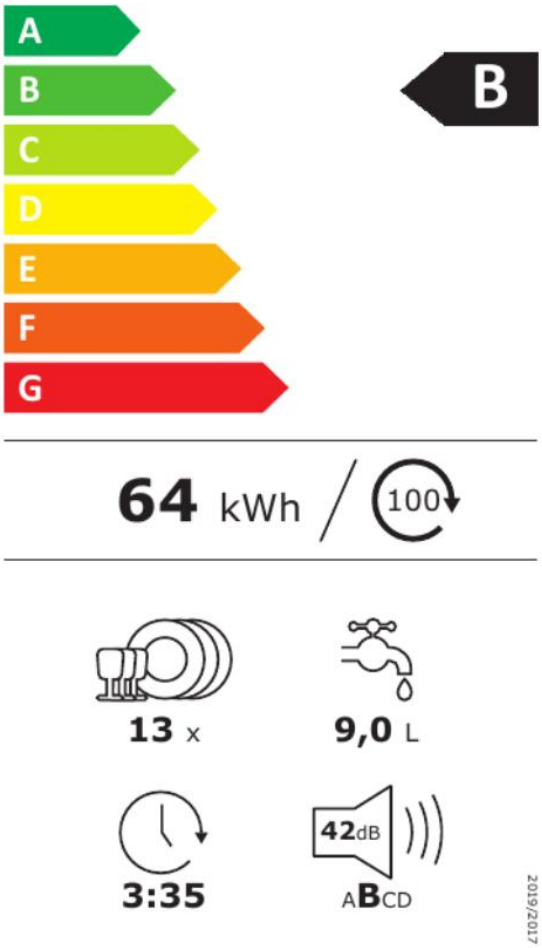
Trending

Claim a 5 Year Warranty* when you buy this product

- 13 place settings — Great for medium-sized households
- Extra Dry — Increases heat to dry dishes and kill germs
- Silence Programme — Keeps the noise down
- Home Connect — Pairs your smartphone to your dishwasher
- Dimensions (cm) - H84.5 x W60 x D60

Product data sheet

Compare



Type	*Brand/Make/Model*	*Flow Rate*	*Unit*	*Performance Level*
Wash-hand Basin Tap	Grohe Eurosmart Cosmopolitan Basin Mixer Tap	3.5	Litres/Minute	4
Wash-hand Basin Tap	Hansgrohe Talis S EcoSmart Basin Mixer Tap	3.5	Litres/Minute	4
Wash-hand Basin Tap	Bristan Prism Eco Basin Mixer Tap	3.8	Litres/Minute	3
Wash-hand Basin Tap	Ideal Standard Tesi Basin Mixer Tap with EcoFlow Regulator	3.7	Litres/Minute	3
Wash-hand Basin Tap	Methven Minimalist Basin Mixer Tap with Satinjet Technology	3.5	Litres/Minute	4
Wash-hand Basin Tap	Grohe Eurosmart Cosmopolitan Basin Mixer Tap with EcoJoy Technology	3	Litres/Minute	5
Wash-hand Basin Tap	Hansgrohe Focus 100 Basin Mixer Tap EcoSmart	3	Litres/Minute	5
Wash-hand Basin Tap	Methven Kiri Basin Mixer with Flow Restrictor	3	Litres/Minute	5
Showers	Mira Eco 4 Spray Showerhead	4	Litres/Minute	4
Showers	Hansgrohe Croma 100 Vario EcoSmart Showerhead	3.5	Litres/Minute	4
Showers	Methven Waipori Satinjet Ultra Low Flow Showerhead	4.5	Litres/Minute	4
Showers	Triton Dene Low Flow Fixed Showerhead	4	Litres/Minute	4
Showers	Aqualisa EcoSpray 105 Showerhead	3.8	Litres/Minute	4
Showers	Mira Eco Showerhead	3.5	Litres/Minute	5
Showers	Methven Satinjet Kiri Low Flow Showerhead	3.5	Litres/Minute	5
Showers	Aqualisa Varispray Water Saving Shower Head	3.5	Litres/Minute	5
Baths	Armitage Shanks Sandringham 21 Compact Bath	110	Litres Overflow	4
Baths	Twyford Celtic Compact Bath	100	Litres Overflow	4
Baths	Kalderwei Saniform Plus Small Steel Bath	105	Litres Overflow	4
Baths	Carron Compact Acrylic Bath	115	Litres Overflow	4
Baths	Ideal Standard Tempo Space Saving Bath	110	Litres Overflow	4
WC	Roca The Gap Wall-Hung Toilet with 3/4.5L Dual Flush	3.38	Effective Flush Litres	4
WC	Ideal Standard Concept Air Back-to-Wall Toilet with Dual Flush	3.38	Effective Flush Litres	4
WC	VitrA S50 Compact Wall-Hung WC with Dual Flush	3.38	Effective Flush Litres	4
WC	Twyford E100 Square Close-Coupled WC with 3/4.5L Dual Flush	3.38	Effective Flush Litres	4
WC	Grohe Bau Ceramic Wall-Hung WC with 3/4.5L Dual Flush	3.38	Effective Flush Litres	4
WC	Roca The Gap Rimless Compact WC	3	Effective Flush Litres	5
WC	Ideal Standard Tesi Aquablade Toilet	3	Effective Flush Litres	5
WC	Geberit Sigma01 Dual Flush WC	3	Effective Flush Litres	5
Kitchen Taps	Grohe BauEdge Single-Lever Kitchen Mixer Tap	4.5	Litres/Minute	4
Kitchen Taps	Hansgrohe Metris Select Kitchen Mixer Tap	4	Litres/Minute	4
Kitchen Taps	Franke Eiger Eco Kitchen Mixer Tap	4	Litres/Minute	4
Kitchen Taps	Blanco Fontas II Filter Kitchen Mixer Tap	4.5	Litres/Minute	4
Kitchen Taps	Bristan Orta Eco Kitchen Mixer Tap	4.8	Litres/Minute	4
Kitchen Taps	Grohe Minta Kitchen Mixer Tap with EcoJoy Technology	5	Litres/Minute	5
Kitchen Taps	Hansgrohe Focus Single Lever Kitchen Mixer Tap (EcoSmart)	5	Litres/Minute	5
Kitchen Taps	Bristan Easyfit Kitchen Mixer Tap (with Flow Limiter)	5	Litres/Minute	5
Washing Machines	Samsung Series 6 WW80T684DLN/S1 Washing Machine	4.9	Litres/dry kg load	3
Washing Machines	Bosch Serie 8 WAW325H0GB Washing Machine	4.8	Litres/dry kg load	3
Washing Machines	LG F4V909WTSE Washing Machine	4.5	Litres/dry kg load	3
Washing Machines	AEG L7FEE865R 8000 Series Washing Machine	4.8	Litres/dry kg load	3
Washing Machines	Miele WED125 WCS Washing Machine	4.6	Litres/dry kg load	3
Washing Machines	Samsung WW90T554DAX/S1 Washing Machine (9kg)	3.4	Litres/dry kg load	5
Washing Machines	Bosch Serie 6 WAU28PH9GB Washing Machine (9kg)	3.3	Litres/dry kg load	5
Washing Machines	Miele WED125 WCS Washing Machine (8kg)	3.75	Litres/dry kg load	5
Dishwashers	Bosch Serie 6 SMS6ZDW48G Freestanding Dishwasher	0.74	Litres/Place Setting	4
Dishwashers	Miele G5260 SCVi Integrated Dishwasher	0.73	Litres/Place Setting	4
Dishwashers	Siemens iQ500 SN258I06TG Freestanding Dishwasher	0.75	Litres/Place Setting	4
Dishwashers	Neff N50 S513K60X1G Integrated Dishwasher	0.75	Litres/Place Setting	4
Dishwashers	AEG FFE62620PM Freestanding Dishwasher	0.76	Litres/Place Setting	4

Annex C - BREEAM Calculations

Existing Use – Office

BREEAM 2018 Wat 01 Water consumption: Water efficiency calculator for new non domestic office buildings

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Building type	Description of building type	Default occupancy	Default annual days/operation	Default daily hours of operation
Office	Offices and workshop business (including those with a basic (category 1) laboratory area)	12.11121	253	10

Main building activity areas	Description of activity area	Activity area present in building?	Net Floor Area (m^2)
Office - Office areas	Cellular or open plan office space, including staff kitchen where present/adjacent and reception areas. Exlcude meeting rooms, visitor waiting or circulation areas.	Yes	109.11
Office - Small workshop / laboratory space	Small scale workshop or category 1 laboratory area	No	
Office - Staff canteen dining area	Seated dining areas that accompany a permanently staffed kitchen preparing food for consumption on the premises (excludes small un-staffed kitchen's used by office staff to re-heat food, make tea etc.)	No	
Office - Fitness suite/gym (with changing facility and showers)	A fitness suite or gym that is part of the office building/development and used by the building's employees only. The gym will have its own changing facility with showers.	Yes	

Water consumption - building microcomponent

WC component - all activity areas	units	Specification	Usage/person/day	Usage factor	Consumption (L/person/day)
WC - male (no urinals installed)	Effective flush volume (Litres)	3.75	4.00	1.00	7.50
WC - female	Effective flush volume (Litres)	3.75	4.00	1.00	7.50

Urinal component - all activity areas	units	Specification	No. of cisterns	Flushing frequency (flushes/hour)	Consumption (L/person/day)

	units	Specification	Usage/person/day	Usage factor	Consumption (L/person/day)

	units	Specification	Usage/person/day	Usage factor	Consumption (L/person/day)

	units	Specification	Usage/person/day	Usage factor	Consumption (L/person/day)
Taps components (personal hygiene) - all activity areas					
Wash hand basin taps	Flow rate (litres/min)	5.50	4.00	0.25	3.72
Shower use	Flow rate (litres/min)	15.00	0.154	5.60	12.94
Fixed use - vessel filling	Litres/person/day	-	-	-	1.63
Tap components (cleaning) - staff kitchenette					
Kitchen taps - kitchenette	Flow rate (litres/min)	8.00	1.00	0.67	3.63
Dishwasher	Litres/cycle		0.04	1.00	0.00
Tap components (cleaning and food preparation) - staff canteen food preparation area					

	Microcomponent consumption (L/person/day)
Total	36.92

Annex D – Part G Calculations

Proposed Three-Bedroom House

Water Calculator | WC | Taps (Other) | Taps (Kitchen/Utility) | Baths | Dishwashers | Washing Machines | Showers | H2O softeners | Greywater | Rainwater

Installation Type	Unit of Measure	Capacity/Flow rate (1)	Use Factor (2)	Fixed use (litres/person/day) (3)	Litres/person/day = [(1)x(2)] + (3) (4)
WC (single flush)	Flush Volume (litres)	3.75	4.42	0.00	16.58
WC (dual flush)	Full flush Volume (litres)		1.46	0.00	0
	Part flush Volume (litres)		2.96	0.00	0
WC (multiple fittings)	Average effective flushing Volume (litres)		4.42	0.00	0
Taps (excluding kitchen/utility room taps)	Flow rate (litres/min)	5.00	1.58	1.58	9.48
Bath (where shower also present)	Capacity to overflow(litres)	140.00	0.11	0.00	15.40
Shower (where bath also present)	Flow Rate(litres / minute)	6.00	4.37	0.00	26.22
Bath Only	Capacity to overflow(litres)		0.50	0.00	0
Shower Only	Flow Rate (litres/minute)		5.60	0.00	0
Kitchen/Utility room sink taps	Flow rate (litres/minute)	6.00	0.44	10.36	13.00
Washing Machine	(Litres/kg dry load)	5.00	2.1	0.00	10.50
Dishwasher	(Litres/place setting)	0.92	3.6	0.00	3.31
Waste disposal unit	(Litres/use)	☐ Present	3.08	0.00	0
Water Softener	(Litres/person/day)		1.00	0.00	0
	(5)	Total Calculated use (litres/person/day) =SUM(column 4)			94.49
	(6)	Contribution from greywater (litres/person/day)			0
	(7)	Contribution from rainwater (litres/person/day)			0
	(8)	Normalisation factor			0.91
	(9)	Total internal water consumption = [(5)-(6)-(7)]x(8) (litres/person/day)			85.99
	(10)	External water use			5.0
	(11)	Total water consumption (Building Regulation 17.K) =(9)+(10)(litres/person/day)			91.0

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