Water Neutrality Statement

Water Neutrality Statement
4 Park Place, Horsham, RH12 1DG
With Reference To Material Amendment of Original Application

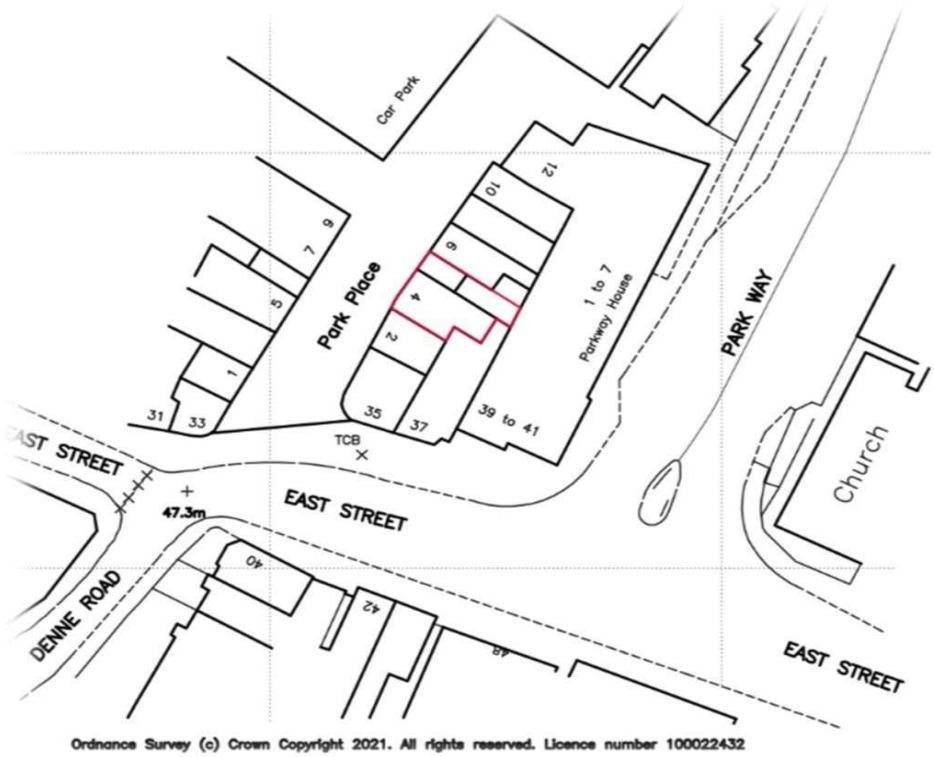
In support of material amendment to DC/21/0137 "Change of use of A3 unit (with ancillary A1 use) to a Use Class E unit on the ground floor and a 2-bed dwellinghouse to first and second floors, including the installation of an external staircase to rear elevation" received permission under the Town and Country Planning Act by Horsham District Council on 02/08/2021.

This statement is to accompany a material amendment of the original permission under section 73 of the Town and Country Planning Act to demonstrate that the development is water neutral.

Site Location

4 Park Place, Horsham, West Sussex, RH12 1DG

Easting (x) 517419
Northing (y) 130481



Introduction

The purpose of this statement and reason for submission is to demonstrate that in the development consideration is made towards water neutrality. Water neutrality is defined as development that takes place which does not increase the rate of water abstraction for drinking water supplies above existing levels. Water Neutrality has impacts for the Local Plan, Neighbourhood Plans and Development Management.

Background



The commercial property consists of an internal floorspace of 152.7 square metres and has operated as a tearoom café on all four levels, as well as utilising the external side alleyway, for over 10 years.

It consisted of 68 on site covers, and traded 7 days a week.

Their food and beverages could be consumed on site or taken away.

Southern Water has refused to disclose details of water consumption at the premises due to customer confidentiality, and previous water bills are not available. Nevertheless, it will become clear that the planned development will not use the amount of water that was used prior at the site.

As a large and busy tearoom and café, water consumption was high due to production of beverages and food, dishwashing, customer/staff toilets, handwashing, floor mopping, general cleaning, etc.

Development

The development consists of converting the upper two floors into a single two bedroom residential dwelling, leaving a significantly smaller Class E lock up shop on the ground floor.

The development results in the loss of over 50% of the internal commercial floor space that the occupier utilised for food preparation and restaurant covers to residential use, together with an additional outside space used for alfresco dining.

The loss of commercial space to residential use, leaving only the ground floor and basement has greatly reduced the capacity and practicality of what remains.

The significant loss of this busy commercial café/restaurant space to a two bedroom residential

dwelling and a retail shop will result in less water being consumed at the site and the site considered as water neutral.

PREVIOUS WATER USAGE OF SITE [BASELINE CALCULATION][1]

Historic water bills for the site are not available, and all equipment used in the commercial process of operating the café was removed by the previous occupier.

It is known that at the property, the restaurant/café had two food preparation areas utilising 2 domestic type dishwashers, 3 kitchen sinks, 2 toilets, and 2 hand wash basins.

Using the OFFPAT 2010 Employment Densities Guide there is 1 Full Time Equivalent (FTE) per 18m 2 in a Café. For this site that equates to 8.5 FTE/Day (152.7m 2 /18m 2).

Evidence obtained from sales particulars for the property indicate that the café had 68 covers/day.

The total population on site during a day equates to 8.5 Staff + 68 covers = 76.5 people/day using or working in the café. Of the 8.5 FTEs 4.75 are assumed to be kitchen staff who use the most mains water.

The BREEAM 2018 Wat 01 Water Consumption Efficiency Calculator does not specifically calculate water consumption for a Café/Restaurant business. To use the BREEAM calculator for this business type, the Industrial Calculator has been used.

This calculates the mains water consumption of 423.49 Litres/FTE/Day, therefore equal to 2,012 Litres/Day by the kitchen staff alone (4.75*423.49).

Serving staff will increase that load with drinks, WC, toilet flushes and hand-washing. This has been calculated at 20.35 Litres/Person/Day.

Customers use the WC and wash-hand basin and this equates to 18.77 Litres/Person/Day.

The modelled mains water consumption is presented in the table below:

Table 1 Calculated Baseline Water Consumption

Existing	***Calculated L/P/D***	***No'***	***Total Litres/Day***
Kitchen Staff	423.49	4.5	2,012
Serving Staff	20.35	3.75	76.31
Customers	18.77	68	1,276
		Total	3,364

Calculation is as below:

[1] Commercial BREEAM assessment calculation provided by H20geo, Horsham. www.h20geo.co.uk

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

BREEAM UK delivered by bre

Building type	Description of building type	Default occupancy	Default annual days/operation	Default daily hours of operation
Industrial - typical business hours of operation	General and specialist industrial and warehouse and storage units operating 24 hours a day 7 days a week.	4.74762	253	10

Main building activity areas	Description of activity area	Activity area present in building?	Net Floor Area (m²)
Industrial - process area	Main process based operational/manufacturing/workshop area	Please select	
Industrial - Laboratory area	Large or small category 1 laboratory area.	Please select	
Industrial - Warehouse storage	Permanently or intermittently occupied warehouse storage areas.	Please select	
Industrial - 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.	Please select	
Industrial - 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.)	Yes	118.1
Industrial - 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.	Please select	

Water consumption - building microcomponent

WC component - all activity areas WC - male (no urinals installed)	Units Effective flush volume (Litres)	Specification 6.00	Usage/person/day 4.00	Usage factor 1.00	Consumption (L/person/day) 12.00
WC – female	Effective flush volume (Litres)	6.00	4.00	1.00	12.00

Urinal component - all activity areas	Units	Specification	No. of cisterns	Flushing frequency (flushes/hour)	Consumption (L/person/day)
Automatically operated flushing cistern	Cistern capacity (Litres)		1.00	1.00	0.00
	No. of urinal bowls				

	Units	Specification	Usage/person/day	Usage factor	Consumption (L/person/day)
Manual/automatic operated pressure flushing valve (all activity areas)	Flush volume (litres)		3.00	1.00	0.00
	No. of urinal bowls				

	Units	Specification	Usage/person/day	Usage factor	Consumption (L/person/day)
Waterless urinals (all activity areas)	Flush volume (litres)	Please select	3.00	1.00	0.00
	No. of urinal bowls				

	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)	10.00	4.00	0.25	6.77
Shower use	Flow rate (litres/min)	0.00	0.154	5.60	0.00
Fixed use - vessel filling	Litres/person/day	-	-	-	1.58
Tap components (cleaning) - staff kitchenette					
Kitchen taps – kitchenette	Flow rate (litres/min)		1.00	0.67	0.00
Dishwasher	Litres/cycle		0.04	1.00	0.00
Tap components (cleaning and food preparation) - staff canteen food preparation area					
Kitchen taps - pre-rinse nozzle	Flow rate (litres/min)	10.00	-	60.00	126.38
Dishwasher	Litres/rack	17.00	-	0.201	85.00
Waste disposal unit	Flow rate (litres/min)	0.00	-	30.00	0.00
Fixed use - food preparation	Litres/person/day	-	-	-	53.48
Fixed use - kitchen cleaning	Litres/person/day	-	-	-	126.28

Microcomponent consumption (L/person/day)

Total:	423.49

WATER USAGE OF NEW DEVELOPMENT

WATER USAGE OF GROUND FLOOR COMMERCIAL UNIT[2]:

The significant loss of commercial space leaves the property with a greatly reduced capacity and limited potential with regards to usage under Class E Classification.

The proposed commercial retail space has an area of 73.8m² and customers would not have access to the WC.

The BREEAM Calculator for a retail space has been used to calculate the daily mains water consumption. The OFFPAT staff density figure is 4.

They would consume a modelled 19.97 Litres/Person/Day equal to 79.88 Litres/Day.

Summary

Table 2 Summary of Existing Mains Consumption versus Proposed Consumption

Existing Commercial Space (Litres/Day)	***Proposed Commercial Space (Litres/Day)***	***Commercial Water Saving***
3,364	79.88	3,284

Calculation is as below:

BREEAM UK delivered by bre

BREEAM 2018 Wat 01 Water consumption: Water efficiency calculator for new non domestic retail buildings			
Building type	Description of building type	Default annual days/operation	Default daily hours of operation
Retail - Shop / retail unit(s) / retail warehouse	Shops: shop/retail unit(s)/retail warehouse(s).	362	8.5
	Does the retail development contain sanitary facilities for use by visiting customers?		No
		Default daily occupancy visiting customers	Not applicable
		Default daily occupancy staff	4

Main building activity areas	Description of activity area	Activity area present in building?	Net Floor Area (m²)
Retail - sales areas for display of bulky items	A retail sales/display area trading predominantly in bulky items, e.g. furniture, floor coverings, cycles, prams, large domestic appliances or other bulky goods, or trading on a wholesale self-selection basis.	Please select	
Retail - sales areas for display of non bulky items and/or customer service area.	A general sales/display areas in department stores, supermarkets, shops and/or customer service waiting and/or collection areas e.g. in banks, post office, bookmakers etc.	Yes	73.8
Retail - concourse/shopping mall	The central (shared) area within a shopping centre used for access by shoppers (typically a covered area containing one or more of benches, cafes, escalators etc.)	Please select	
Retail - Staff office area and staffroom	Staff office space and staffroom, often located in 'back of house' areas.	Please select	
Retail - Staff canteen dining area	Seated areas in a staff canteen that accompany a food preparation areas where food and drink is consumed by staff on the premises.	Please select	
Retail - Goods-in and storage area	Internal areas for receiving and storing goods.	Please select	
Retail – Workshop	A workshop / vehicle servicing area within a car showroom or general workshop in other type of retail development.	Please select	

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

[2] Commercial BREEAM assessment calculation provided by H20geo, Horsham. www.h20geo.co.uk

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)
Automatically operated flushing cistern	Cistern capacity (Litres)				0.00
	No. of urinal bowls				

	Units	Specification	Usage/person/day	Usage factor	Consumption (L/person/day)
Manual/automatic operated pressure flushing valve (all activity areas)	Flush volume (litres)		3.00	1.00	0.00
	No. of urinal bowls				

	Units		Usage/person/day	Usage factor	Consumption (L/person/day)
Waterless urinals (all activity areas)	Flush volume (litres)	Please select	3.00	1.00	0.00
	No. of urinal bowls				

	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)	5.00	4.00	0.25	3.39
Shower use	Flow rate (litres/min)	0.00	0.030	5.60	0.00
Fixed use - vessel filling	Litres/person/day	-	-	-	1.58
Tap components (cleaning) - staff kitchenette					
Kitchen taps – kitchenette	Flow rate (litres/min)		1.00	0.67	0.00
Dishwasher	Litres/cycle		0.0400	1.00	0.00
Tap components (cleaning and food preparation) - staff canteen food preparation area					
Kitchen taps - pre-rinse nozzle	Flow rate (litres/min)		-	60.00	0.00
Dishwasher	Litres/rack		-	0.248	0.00
Waste disposal unit	Flow rate (litres/min)		-	30.00	0.00
Fixed use - food preparation	Litres/person/day	-	-	-	0.00
Fixed use - kitchen cleaning	Litres/person/day	-	-	-	0.00

	Microcomponent Consumption (L/person/day)
Total	19.97

WATER USEAGE OF TWO BEDROOM RESIDENTIAL DWELLING [UPPER FLOORS]:

Fixtures to be installed are 2 showers, 2 dual flush toilets, 2 wash basins, kitchen sink, dishwasher and washing machine. Using the maximum flow rates fittings consumption set by Building Regulations Part G[3], the water efficiency calculator calculates the usage of the apartment as follows [https://wrcpartgcalculator.co.uk/Calculator.aspx]:

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)		4.42	0.00	0
WC (dual flush)	Full flush Volume (litres)	4	1.46	0.00	5.84
	Part flush Volume (litres)	2.6	2.96	0.00	7.70
WC (multiple	Average		4.42	0.00	0

[3] Building Regulations 2010 (2015) [2016 amd] Approved Document Part G, Page 16, Table 2.1

fittings)	effective flushing Volume (litres)				
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)		0.11	0.00	0
Shower (where bath also present)	Flow Rate(litres / minute)		4.37	0.00	0
Bath Only	Capacity to overflow(litres)		0.50	0.00	0
Shower Only	Flow Rate (litres/minute)	8.00	5.60	0.00	44.80
Kitchen/Utility room sink taps	Flow rate (litres/minute)	6.00	0.44	10.36	13.00
Washing Machine	(Litres/kg dry load)	8.17	2.1	0.00	17.16
Dishwasher	(Litres/place setting)	1.25	3.6	0.00	4.50
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)			102.48
	(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)			93.26
	(10)	External water use			5.0
	(11)	Total water consumption (Building Regulation 17.K) =(9)+(10)(litres/person/day)			98.3

A total water consumption of 98.3 litres per person per day. Based on extrapolated 2011 census data for Horsham District, the average occupancy rate for the apartment is 1.88 occupants.

1.88 occupants x 98.3 litres = **184.804 litres per day**

TOTAL WATER CONSUMPTION OF NEW DEVELOPMENT

79.88 litres (Class E Unit) + 187.71 litres (Dwelling) = **264.684 litres per day total usage**

WATER SAVING BY NEW DEVELOPMENT

The total water consumption for the new development is less than the baseline calculation for the prior usage. **The site's development represents a saving of 3,099.316 litres per day.**

CONCLUSION

The proposed development will save 3,096.316 litres of water per day and is therefore water neutral.