

BREEAM 2016 International Wat 01 Water consumption calculator

Important information

This version of the BREEAM International 2016 Wat 01 calculator can be used for the following building types:

- 1) Offices
- 2) Retail
- 3) Industrial
- 4) Education
- 5) Other building types

Assessors may use the 'Other building type calculator' for the assessment of Residential buildings, selecting the relevant option from the drop-down list.

For Bespoke projects, please, see the criteria appendix for details of which building type to use for.

The BREEAM International 2016 Wat 01 calculator tool is compatible with Microsoft Excel version 2010 and above.

User instructions

There are two ways to calculate performance using the BREEAM International 2016 Wat 01 calculator:

- 1) The standard Wat 01 method
- 2) The alternative Wat 01 method

The standard BREEAM water efficiency method determines water efficiency (measured in l/person) based on default usage patterns for the building type and its activity areas. This output is compared with the target to determine the number of BREEAM credits achieved.

The standard approach is the default method for calculating water efficiency of a BREEAM assessment, including:

- 1) Offices
- 2) Retail
- 3) Industrial
- 4) Education

Where it is not possible to use the standard approach to determine the building's water consumption, the alternative method can be completed using the alternative method. The alternative method is used for any Other building type.

ilding types:

; Residential institutions - Long term stay and Hotels and Residential institutions - Shorte term

r the assessment of this issue.

s 2007, 2010 and 2013.

lator:

n/day and m³/person/yr) for a building based on the building's actual component specification and
: same output for a baseline component specification and the percentage improvement used to

sed building and is that used for most of the common building types, where usage data is

on total, and therefore a percentage improvement on the baseline specification, the assessment
ding type not listed above under the standard method.

Building details

Building name: Photon House, Station Road, Linton CB21 4NW

BRE Assessment Reference No.:

Precipitation zone: Precipitation zone 1

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)	79.583	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. Exclude meeting rooms, visitor waiting or circulation areas.	Yes	709	Note: tl large, to present
Office - Small workshop / laboratory space	Small scale workshop or category 1 laboratory area	Yes	13	
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		Note: C kitchen
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.	No		

Water Consumption - Building Microcomponent

WC component - all activity areas	units	Specification	Usage/person/day	Usage factor	Consumption (L/person/day)	
WC - male (urinals installed)	Effective flush volume (Litres)	4.00	1.00	1.00	2.00	Note: V 6 litres of male
WC - female	Effective flush volume (Litres)	4.00	4.00	1.00	8.00	

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)				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)	4.00	3.00	1.00	6.00
	No. of urinal bowls	9.00			
	units	Specification	Usage/person/day	Usage factor	Consumption (L/person/day)
Waterless urinals (all activity areas)	Flush volume (litres)	Waterless urinals - not specified	3.00	1.00	0.00
	No. of urinal bowls				

Note: T
specifie

	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)	6.00	4.00	0.25	4.06
Shower use	Flow rate (litres/min)	8.00	0.030	5.60	1.34
Fixed use - vessel filling	Litres/person/day	-	-	-	1.58
Tap components (cleaning) - staff kitchenette					
Kitchen taps - kitchenette	Flow rate (litres/min)	7.00	1.00	0.67	3.18
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)	Note: T a more improvi specific
Total	26.16	

Non Potable Water Yield - Greywater System

Has, or will, the greywater system be specified and installed?	No
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Greywater source (building components)	Greywater Collected	Proportion of components collected from (%)	Greywater yield (L/person/day)
Greywater source (other components)	Typical greywater yield (litres)	Frequency of yield (days)	Greywater yield (litres/day)
			Greywater yield (L/person/day)

	Greywater yield (L/person/day)
Total	0.00

Non Potable Water Yield - Rainwater System

Has, or will, the rainwater system be specified and installed?	No
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How has the storage capacity for the proposed system been calculated?	
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Rainwater yield if intermediate:

Collection area (m2)	Rainfall (average mm/yr)	Hydraulic filter efficiency (%)	Yield co-efficient (%)	Annual rainwater yield (Litres)	Rainwater yield (L/person/day)

Rainwater yield if detailed:

Daily rainfall collection (litres)	Rainwater yield (L/person/day)

Non Potable Water Demand - Building Components

	Greywater and/or rainwater yield (L/person/day)
Total	

Component	Greywater and/or rainwater utilised for component	Proportion of components using greywater and/or rainwater yield (%)	Maximum permissible demand (L/person/day)

	Demand met by yield (L/person/day)
Total	

Other permissible components

	Maximum permissible demand (L/day)





	Demand met by yield (L/person/day)
Total	

Greywater and/or rainwater demand met by yield (L/person/day)

Total

Water Consumption Calculation Results

	Litres/person/day	m ³ /person/yr
Water consumption - modelled baseline performance benchmark (excludes fixed uses)	33.17	8.39
Microcomponent Water consumption - modelled performance (excludes fixed uses)	24.58	6.22
Modelled water demand met via greywater and rainwater sources	0.00	0.00
If greywater/rainwater systems specified has the minimum % efficiency improvement for component specifications been met	System not specified	
Net modelled water consumption (excludes fixed uses)	24.58	6.22
Percentage improvement	25.89%	
Total Wat 01 BREEAM credits achieved	2 credits	
Total Wat 01 BREEAM Innovation credits achieved	Exemplary level not achieved	
Key Performance Indicator - use of freshwater resource (includes fixed uses)	26.16	6.62

Key	
	Cells that are white with a black border require user input (data entry/option selection)
	Cells that are light grey contain fixed data or a formula and do not require any user input
	Cells that are dark grey are user input cells which are not applicable due to either building type or user input/option selection or default setting. Note these cells can change to ones requiring user input depending on the users option selection in other
	A red arrow indicates that option selection or mandatory data entry is required in one of the cells on the row where this arrow appears. Without appropriate selection/data the calculator will not be able to determine the number of BREEAM credits. Where the term "Requires building information" appears check to make sure there are no red arrows indicating an absence of option selection or data entry.

he activity areas defined opposite are used to estimate the assessed building's default occupancy and therefore water consumption benchmark. These areas are chosen as they are deemed, by in
o represent the permanently occupied spaces in the building and therefore reflect the number of building occupants/users. As a result it is not necessary to include all areas of the building that may be
; as the areas not defined are assumed to be used by the occupants of the building already accounted for by those areas that are listed.

Only select this activity if there is a permanently staffed kitchen that will prepare hot and cold meals for the building's staff (and visitors). Enter the area of the seated dining area only (not
/servery areas), this is used to estimate the number of covers per day for the restaurant and subsequently the number of kitchen staff and water consumption from food preparation activity area.

Where the WC facilities are non-gender specific, please still enter the WC specification against both WC male and WC female categories i.e. if there are two WCs with a 6 litre effective flush, then enter
against both male and female categories. The calculation will not double count water consumption in this instance as the consumption figure calculated for each WC component is adjusted by the ratio
: to female users for this building type.

This consumption total accounts for the ratio of male users for this building type i.e. the ratio of building users who will operate the flush. Where more than one type of urinal flushing control is used in the building, this consumption figure is adjusted by a ratio of use. The ratio is determined according to the proportion of urinals bowls in the building operated using this type of control.

This total includes the contributions from fixed uses, including where applicable vessel filling, kitchen cleaning and food preparation. Default fixed use totals are included with the calculations to provide an accurate reflection of the buildings total water consumption. The fixed use totals are not however included in the water consumption total used to determine the assessed buildings percentage improvement and the number of BREEAM credits achieved. The percentage improvement is based only on the consumption of water from uses that can be heavily influenced by the microcomponent operation e.g. WC flushing.

BREEAM 2016 International Wat 01 Water consumption calculator - Retail bu

Building details

Building name

BRE Assessment Reference No.

Precipitation zone:

Please

Building type	Description of building type
> Please select	

Main building activity areas	Description of activity area
> Retail - sales areas for display of bulky items	A retail sales/display area trading predom
> Retail - sales areas for display of non bulky items and/or customer service area.	A general sales/display areas in depart
> Retail - concourse/shopping mall	The central (shared) area within a shop
> Retail - Staff office area and staffroom	Staff office space and staffroom, often
> Retail - Staff canteen dining area	Seated areas in a staff canteen that acc
> Retail - Goods-in and storage area	Internal areas for receiving and storing
> Retail - Workshop	A workshop / vehicle servicing area wit

Water Consumption - Building Microcomponent

WC component - all activity areas	units
> Please select	Effective flush volume (Litres)
WC - female	Effective flush volume (Litres)

Urinal component - all activity areas	units
Automatically operated flushing cistern	Cistern capacity (Litres)
	No. of urinal bowls
	units
Manual/automatic operated pressure flushing valve (all activity areas)	Flush volume (litres)
	No. of urinal bowls
	units
> Waterless urinals (all activity areas)	Flush volume (litres)
	No. of urinal bowls

	units
Taps components (personal hygiene) - all activity areas	
Wash hand basin taps	Flow rate (litres/min)
Shower use	Flow rate (litres/min)
Fixed use - vessel filling	Litres/person/day
Tap components (cleaning) - staff kitchenette	
Kitchen taps - kitchenette	Flow rate (litres/min)
Dishwasher	Litres/cycle
Tap components (cleaning and food preparation) - staff canteen food preparation area	
Kitchen taps - pre-rinse nozzle	Flow rate (litres/min)
Dishwasher	Litres/rack
Waste disposal unit	Flow rate (litres/min)
Fixed use - food preparation	Litres/person/day
Fixed use - kitchen cleaning	Litres/person/day

Non Potable Water Yield - Greywater System

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Greywater source (building component)
Wash hand basin taps
Showers
Kitchen taps - kitchenette
Dishwasher - staff kitchenette
Kitchen taps - pre-rinse nozzle
Dishwasher - food preparation area
Greywater source (other components)
Other source of greywater

Non Potable Water Yield - Rainwater System

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Rainwater yield if intermediate:

Collection area (m ²)	Rainfall (average mm/yr)

Non Potable Water Demand - Building Components

Water Consumption Calculation Results

Water co

Micro

If greywater/rainwater systems specified has th

	Default annual days/operation

	Activity area present in building?
ominantly in bulky items, e.g. furniture, floor coverings, cycles, prams, large goods, or trading on a wholesale self-selection basis.	Please select
ment stores, supermarkets, shops and/or customer service waiting and/or café, bookmakers etc.	Please select
opping centre used for access by shoppers (typically a covered area containing stairs etc.)	Please select
located in 'back of house' areas.	Please select
company a food preparation areas where food and drink is consumed by staff	Please select
goods.	Please select
thin a car showroom or general workshop in other type of retail development.	Please select



Specification	Usage/person/day	Usage factor
	Requires building information	Requires building information
	Requires building information	Requires building information

Specification	No. of cisterns	Flushing frequency (flushes/hour)

Specification	Usage/person/day	Usage factor
	Requires building information	Requires building information

	Usage/person/day	Usage factor
Waterless urinals - specified	Requires building information	Requires building information

Specification	Usage/person/day	Usage factor
	Requires building information	Requires building information
	Requires building information	Requires building information
-	-	-
	Requires building information	0.67
	Requires building information	1.00
	-	60.00
	-	0.248
	-	30.00
-	-	-
-	-	-

Total



Has, or will, the greywater system be specified and installed?

(s)	Greywater Collected	Proportion of components collected from (%)
	No	
	No	
	No	
	No	
	No	
	No	
Typical greywater yield (litres)	Frequency of yield (days)	Greywater yield (litres/day)
500	1	500.00

Total



Has, or will, the rainwater system be specified and installed?

How has the storage capacity for the proposed system been calculated?

Hydraulic filter efficiency (%)	Yield co-efficient (%)	Annual rainwater yield (Litres)

Rainwater yield if detailed:

Daily rainfall collection (litres)
5000



Total

Component	Greywater and/or rainwater utilised for component	Proportion of components using greywater and/or rainwater yield (%)
WC flushing	Yes	60%
Urinal flushing	No	

Total

Other permissible components

Are there other permissible components present which demand greywater and/or rainwater yield?

Proportion of maximum permissible demand utilised by other permissible components (%)

Total

Total



	Litres/person/day
Consumption - modelled baseline performance benchmark (excludes fixed uses)	Requires building information
Component Water consumption - modelled performance (excludes fixed uses)	Requires building information
Modelled water demand met via greywater and rainwater sources	Requires building information
Has the minimum % efficiency improvement for component specifications been met	Requires building information
Net modelled water consumption (excludes fixed uses)	Requires building information
Percentage improvement	Requires building information
Total Wat 01 BREEAM credits achieved	Requires building information
Total Wat01 BREEAM Innovation credits achieved	Requires building information
Key Performance Indicator - use of freshwater resource (includes fixed uses)	Requires building information



Key

>

Cells that are white with a black border require user input

Cells that are light grey contain fixed data or a formula and

Cells that are dark grey are user input cells which are not

Default daily hours of operation

Note: If this retail development contains one of or a combination of restaurants building functions using the appropriate building type calculator. You must then the compliance note: "Building is a mixture of different types", contained within

Net Floor Area (m ²)

Note: the activity areas defined opposite are used to estimate the assessed building large, to represent the permanently occupied spaces in the building and therefore present, as the areas not defined are assumed to be used by the occupants of the

Note: Only select this activity if there is a permanently staffed kitchen that will be used for food preparation activity area.



Consumption (L/person/day)
Requires building information
Requires building information

Note: please select the relevant option for WC component opposite
 Note: Where the WC facilities are non-gender specific, please still enter the WC 6 litres against both male and female categories. The calculation will not double of male to female users for this building type.

Consumption (L/person/day)
Requires building information

Consumption (L/person/day)
Requires building information

Note: This consumption total accounts for the ratio of male users for this building specified in the building, this consumption figure is adjusted by a ratio of use. If

Consumption (L/person/day)
Requires building information

Consumption (L/person/day)
Requires building information
Requires building information
Requires building information
Requires building information
Requires building information
Requires building information
Requires building information
Requires building information
0.00
0.00

Microcomponent Consumption (L/person/day)
Requires building information

Note: This total includes the contributions from fixed uses, including where applicable a more accurate reflection of the building's total water consumption. The fixed uses include the number of BREEAM credits achieved. The percentage improvement specification e.g. WC flushing.



Yes

Greywater yield (L/person/day)
Greywater yield (L/person/day)
#DIV/0!

Note: If greywater is collected from a component/source not accounted for above, this can include wastewater from active hygiene flushing, i.e. a ri

Greywater yield (L/person/day)
Requires building information



Yes

BS8515 Detailed approach

Rainwater yield (L/person/day)

Rainwater yield (L/person/day)
Requires building information



Greywater and/or rainwater yield (L/person/day)
Requires building information

Maximum permissible demand (L/person/day)
0.00
Demand met by yield (L/person/day)

0.00

Yes
Maximum permissible demand (L/day)
Requires building information
100%
Demand met by yield (L/person/day)
Requires building information

Greywater and/or rainwater demand met by yield (L/person/day)
Requires building information



m ³ /person/yr
Requires building information

Requires building information

Requires building information

Requires building information

Requires building information

t (data entry/option selection)

d do not require any user input

applicable due to either building type or user input/option selection or default settin

/cafes (for customer use), gym or cinema then please ensure you undertake separate
determine the number of BREEAM credits achieved for the development as a whole
the Wat01 issue in the BREEAM New Construction technical guide.

ding's default occupancy and therefore water consumption benchmark. These areas
ore reflect the number of building occupants/users. As a result it is not necessary to i
he building already accounted for by those areas that are listed.

orepare hot and cold meals for the building's staff. Enter the area of the seated dining

specification against both WC male and WC female categories i.e. if there are two W
: count water consumption in this instance as the consumption figure calculated for e

ing type i.e. the ratio of building users who will operate the flush. Where more than o
re ratio is determined according to the proportion of urinals bowls in the building op

licable vessel filling, kitchen cleaning and food preparation. Default fixed use totals a
use totals are not however included in the water consumption total used to determin
rovement is based only on the consumption of water from uses that can be heavily i

ve i.e. their consumption is not estimated, then the amount of greywater collected c
egular hygiene flushing programme to minimize poor water quality in a potable cold c

g. Note these cells can change to ones requiring user input depending on the users optic

: water consumption calculations for such
in accordance with the guidance given in

are chosen as they are deemed, by in
include all areas of the building that may be

; area only (not kitchen/servery areas), this is used to estimate the number of covers per

Cs with a 6 litre effective flush, then enter
each WC component is adjusted by the ratio

one type of urinal flushing control is
provided using this type of control.

are included with the calculations to provide
the assessed buildings percentage
influenced by the microcomponent

an be added here so that it may be
or hot water system.

Retail - sales areas for display of bulky items
Retail - sales areas for display of non bulky items and/or customer service area.
Retail - concourse/shopping mall
Retail - Staff office area and staffroom
Retail - Staff canteen dining area
Retail - Goods-in and storage area
Retail - Workshop
Total
Total default occupancy

in selection in other cells.

day and subsequently the default number of kitchen staff and water consumption from

WC component - all activity areas	Baseline Performance Specification
Please select	0.00
WC - female	0.00

Urinal component - all activity areas	Baseline Performance Specification
Automatically operated flushing cistern	0

Urinal component - all activity areas	Baseline Performance Specification
Manual/automatic operated pressure flushing valve	1.5

Urinal component - all activity areas	Baseline Performance Specification
Waterless urinals (all activity areas)	1.5

Taps components (personal hygiene) - all activity ar	Baseline Performance Specification
Wash hand basin taps	0.00
Shower use	0.00
Fixed use - vessel filling	N/A
Tap components (cleaning) - staff kitchenette	
Kitchen taps - kitchenette	0.00
Dishwasher	0.00
Tap components (cleaning and food preparation) - canteen/restaurant	
Kitchen taps - pre-rinse nozzle	0.00
Dishwasher	0.00
Waste disposal unit	0.00
Fixed use - food preparation	N/A
Fixed use - kitchen cleaning	N/A

Greywater/rainwater data check

#VALUE!

% actual improvement

#VALUE!

Credits achieved

Default occupancy rate - customers

0.00

0.00

0.00

-

-

-

-

0.00

0.00

Default occupancy rate - staff

0.00

0.00

-

0.00

0.00

0.00

0.00

0.00

Note: If greywater is collected from a component/source not accounted for above i.e. their
Note: This consumption total accounts for the ratio of male users for this building type i.e. t
Note: Where waterless urinals are specified in the assessed building, for the purpose of the
Note: Please select the relevant option for waterless urinals specification opposite.
Note: The consumption figures calculated here are based on water consumption for staff or
Note: A default occupancy total for visiting customers is not calculated if facilities are not pr
Note: If this retail development contains one of or a combination of restaurants/cafes (for c

Usage/person/day	Usage factor
Requires building information	Requires building information
Requires building information	Requires building information

Urinal consumption (L/bowl/day)	Urinal consumption (L/day)
#N/A	#N/A

Usage/person/day	Usage factor
Requires building information	Requires building information

Usage/person/day	Usage factor
Requires building information	Requires building information

Usage/person/day	Usage factor
Requires building information	Requires building information
Requires building information	Requires building information
N/A	N/A
Requires building information	0.67
Requires building information	1.00
-	60.00
-	0.25
-	30.00
-	N/A
-	N/A

Total

Total

Precipitation zones
Please select
Precipitation zone 1
Precipitation zone 2
Precipitation zone 3

Please select
Waterless urinals - specified
Waterless urinals - not specified

Please select
Yes
No
System not specified

Not applicable
Requires building information

consumption is not estimated, then the amount of greywater collected can be added to the ratio of building users who will operate the flush. Where more than one type of baseline benchmark standard 1.5 litre flush urinals are assumed. Where waterless

urinals (as the building does not contain facilities for visiting customers).

Where provided for this building user.

Where provided for customer use), gym or cinema then please ensure you undertake separate water co

Baseline Consumption (L/person/day)
0.00
0.00

Baseline Consumption (L/person/day)
#N/A

Baseline Consumption (L/person/day)
#DIV/0!

Baseline Consumption (L/person/day)
#VALUE!

Baseline Consumption (L/person/day)
0.00
0.00
Requires building information
0.00
#VALUE!
0.00
0.00
0.00
0.00
0.00

Baseline Consumption (L/person/day)
#N/A

Total from fixed uses
#VALUE!

Please select	Please select	0%
WC - male (urinals installed)	BS8515 Intermediate approach	1%
WC - male (no urinals installed)	BS8515 Detailed approach	2%
		3%
Please select		4%
Retail - Shop / retail unit(s) / retail warehouse		5%
Retail - Supermarket		6%
Retail - Service provider		7%
Retail - Shopping centre/complex		8%
		9%
		10%
		11%
		12%
		13%
		14%
		15%
		16%

ed here so that it may be accounted for. This can include wastewater from activ
urinal flushing control is specified in the building, this consumption figure is ad
urinals and another type of urinal flushing control is specified in the building, tl

nsumption calculations for such building functions using the appropriate buildir

- 17%
- 18%
- 19%
- 20%
- 21%
- 22%
- 23%
- 24%
- 25%
- 26%
- 27%
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87%
88%
89%
90%
91%
92%
93%
94%
95%
96%
97%
98%
99%
100%

BREEAM 2016 International Wat 01 Water consumption calcul

Building details

Building name

BRE Assessment Reference No.

Precipitation zone: Please

Building type	Description of building type
> Please select	

Main building activity areas	Description of activity area
> Industrial - Process area	Main process based operational/manu
> Industrial - Laboratory area	Large or small category 1 laboratory ar
> Industrial - Warehouse storage	Permanently or intermittently occupie
> Industrial - Office areas	Cellular or open plan office space, inclu meeting rooms, visitor waiting or circu
> Industrial - Staff canteen dining area	Seated dining areas that accompany a (excludes small un-staffed kitchen's use
> Industrial - Fitness suite/gym (with changing facility and showers)	A fitness suite or gym that is part of the The gym will have its own changing fac

Water Consumption - Building Microcomponent

WC component - all activity areas	units
WC - male (urinals installed)	Effective flush volume (Litres)
WC - female	Effective flush volume (Litres)

Urinal component - all activity areas	units
Automatically operated flushing cistern	Cistern capacity (Litres)
	No. of urinal bowls
	units
Manual/automatic operated pressure flushing valve (all activity areas)	Flush volume (litres)
	No. of urinal bowls
	units
Waterless urinals (all activity areas)	Flush volume (litres)
	No. of urinal bowls

	units
Taps components (personal hygiene) - all activity areas	
Wash hand basin taps	Flow rate (litres/min)
Shower use	Flow rate (litres/min)
Fixed use - vessel filling	Litres/person/day
Tap components (cleaning) - staff kitchenette	
Kitchen taps - kitchenette	Flow rate (litres/min)
Dishwasher	Litres/cycle
Tap components (cleaning and food preparation) - staff canteen food preparation area	
Kitchen taps - pre-rinse nozzle	Flow rate (litres/min)
Dishwasher	Litres/rack
Waste disposal unit	Flow rate (litres/min)
Fixed use - food preparation	Litres/person/day
Fixed use - kitchen cleaning	Litres/person/day

Non Potable Water Yield - Greywater System

> Has, or will, the greyw

Greywater source (building componen

Greywater source (other components)

Non Potable Water Yield - Rainwater System

> Has, or will, the rainwater

Rainwater yield if intermediate:

Collection area (m2)	Rainfall (average mm/yr)

Non Potable Water Demand - Building Components

Water Consumption Calculation Results

Water co

Micro

If greywater/rainwater systems specified has th

ator - Industrial buildings



	Default occupancy	Default annual days/operation

	Activity area present in building?
facturing/workshop area	Please select
ea.	Please select
d warehouse storage areas.	Please select
uding staff kitchen where present/adjacent and reception areas. Exlcude lation areas.	Please select
permanently staffed kitchen preparing food for consumption on the premises ed by office staff to re-heat food, make tea etc.)	Please select
e office building/development and used by the building's employees only. ility with showers.	Please select



Specification	Usage/person/day	Usage factor

Specification	No. of cisterns	Flushing frequency (flushes/hour)
Specification	Usage/person/day	Usage factor
Specification	Usage/person/day	Usage factor

Specification	Usage/person/day	Usage factor
	0.154	
-	-	-
	1.00	0.67
	0.04	1.00
	-	60.00
	-	0.201
	-	30.00
-	-	-
-	-	-

Total



Water system be specified and installed in compliance with BS8525-1:2010 Greywater Systems - Part 1 Code of Practice

(ts)	Greywater Collected	Proportion of components collected from (%)

Typical greywater yield (litres)	Frequency of yield (days)	Greywater yield (litres/day)

Total



er system be specified and installed in compliance with BS8515:2009 Rainwater Harvesting Systems - Code of practice

How has the storage capacity for the proposed system been calculated?

Hydraulic filter efficiency (%)	Yield co-efficient (%)	Annual rainwater yield (Litres)

Rainwater yield if detailed:

Daily rainfall collection (litres)



Total

Component	Greywater and/or rainwater utilised for component	Proportion of components using greywater and/or rainwater yield (%)

Total

Other permissible components

--

--

Total

Total



	Litres/person/day
Consumption - modelled baseline performance benchmark (excludes fixed uses)	Requires building information
Component Water consumption - modelled performance (excludes fixed uses)	Requires building information
Modelled water demand met via greywater and rainwater sources	Requires building information
Minimum % efficiency improvement for component specifications been met	Requires building information
Net modelled water consumption (excludes fixed uses)	Requires building information
Percentage improvement	Requires building information
Total Wat 01 BREEAM credits achieved	Requires building information
Total Wat01 BREEAM Innovation credits achieved	Requires building information
Key Performance Indicator - use of freshwater resource (includes fixed uses)	Requires building information



Key

White cell with black border
Light grey cell
Dark grey cell
White cell with red arrow

Cells that are white with a black border require user input
 Cells that are light grey contain fixed data or a formula and
 Cells that are dark grey are user input cells which are not

Default daily hours of operation
Dark grey input cell

Net Floor Area (m ²)
Dark grey input cell
Dark grey input cell
Dark grey input cell
Dark grey input cell
Dark grey input cell
Dark grey input cell

Note: the activity areas defined opposite are used to estimate the assessed building large, to represent the permanently occupied spaces in the building and therefore present, as the areas not defined are assumed to be used by the occupants of the

Note: Only select this activity if there is a permanently staffed kitchen that will include kitchen/servery areas), this is used to estimate the number of covers per day for



Consumption (L/person/day)
Requires building information
Requires building information

Note: Where the WC facilities are non-gender specific, please still enter the WC

6 litres against both male and female categories. The calculation will not double of male to female users for this building type.

Consumption (L/person/day)
Requires building information

Consumption (L/person/day)
Requires building information

Note: This consumption total accounts for the ratio of male users for this building specified in the building, this consumption figure is adjusted by a ratio of use. If

Consumption (L/person/day)
Requires building information

FALSE

Consumption (L/person/day)
Requires building information
Requires building information
Requires building information
Requires building information
Requires building information
Requires building information
Requires building information
Requires building information
Requires building information
Requires building information
Requires building information
Requires building information
Requires building information
Requires building information
Requires building information

Microcomponent Consumption (L/person/day)
Requires building information

Note: This total includes the contributions from fixed uses, including where applicable a more accurate reflection of the buildings total water consumption. The fixed uses include improvements and the number of BREEAM credits achieved. The percentage improvement specification e.g. WC flushing.

--

Please select

Greywater yield (L/person/day)

Greywater yield (L/person/day)

Greywater yield (L/person/day)
Requires building information

--

Please select

--

Rainwater yield (L/person/day)

Rainwater yield (L/person/day)

--

Greywater and/or rainwater yield (L/person/day)

Maximum permissible demand (L/person/day)
Demand met by yield (L/person/day)

Maximum permissible demand (L/day)

Demand met by yield
(L/person/day)

Greywater and/or rainwater demand
met by yield
(L/person/day)

m^3 /person/yr

Requires building information

Requires building information

Requires building information

Requires building information

Requires building information

t (data entry/option selection)

d do not require any user input

applicable due to either building type or user input/option selection or default settin

lding's default occupancy and therefore water consumption benchmark. These areas
re reflect the number of building occupants/users. As a result it is not necessary to i
he building already accounted for by those areas that are listed.

orepare hot and cold meals for the building's staff (and visitors). Enter the area of the
r the restaurant and subsequently the number of kitchen staff and water consumptio

specification against both WC male and WC female categories i.e. if there are two W

: count water consumption in this instance as the consumption figure calculated for e

ing type i.e. the ratio of building users who will operate the flush. Where more than one ratio is determined according to the proportion of urinals bowls in the building op

licable vessel filling, kitchen cleaning and food preparation. Default fixed use totals and use totals are not however included in the water consumption total used to determine improvement is based only on the consumption of water from uses that can be heavily i

g. Note these cells can change to ones requiring user input depending on the users option selection in other cells.

are chosen as they are deemed, by in
include all areas of the building that may be

seated dining area only (not
in from food preparation activity area.

Cs with a 6 litre effective flush, then enter

Each WC component is adjusted by the ratio

one type of urinal flushing control is created using this type of control.

are included with the calculations to provide the assessed buildings percentage influenced by the microcomponent

BREEAM 2016 Wat 01 Water consumption calculator - Education buildings

Building details

Building name

BRE Assessment Reference No.

Building type

Description of building type

> Please select

Main building activity areas

Description of activity area

Water Consumption - Building Microcomponent

WC component - all activity areas	units
> Please select	Effective flush volume (Litres)
WC - female	Effective flush volume (Litres)

Urinal component - all activity areas	units
Automatically operated flushing cistern	Cistern capacity (Litres)
	No. of urinal bowls
	units
Manual/automatic operated pressure flushing valve (all activity areas)	Flush volume (litres)
	No. of urinal bowls
	units
> Waterless urinals (all activity areas)	Flush volume (litres)
	No. of urinal bowls

	units
Taps components (personal hygiene) - all activity areas	
Wash hand basin taps	Flow rate (litres/min)
Shower use	Flow rate (litres/min)
Hide rd Shower use (bath present)	Flow rate (litres/min)
Hide rd Bath use (no shower present)	Capacity to overflow (Litres)
Hide rd Bath use (shower present)	Capacity to overflow (Litres)
Fixed use - vessel filling	Litres/person/day
Tap components (cleaning) - staff kitchenette	
Kitchen taps - kitchenette	Flow rate (litres/min)
Dishwasher	Litres/cycle
Tap components (cleaning and food preparation) - school canteen food preparation area	
Kitchen taps - pre-rinse nozzle	Flow rate (litres/min)
Dishwasher	Litres/rack
Waste disposal unit	Flow rate (litres/min)
Hide rd Washing machine	Litres/kg dry load
Fixed use - food preparation	Litres/person/day
Fixed use - kitchen cleaning	Litres/person/day

Non Potable Water Yield - Greywater System



Greywater source (building component)

Hide rows: N/A for offices

Hide rows: N/A for offices

Greywater source (other components)

--

Non Potable Water Yield - Rainwater System



Rainwater yield if intermediate:

Collection area (m ²)	Rainfall (average mm/yr)

Non Potable Water Demand - Building Components

Water Consumption Calculation Results

Water co

Micro

If greywater/rainwater systems specified has th



Specification	Usage/person/day	Usage factor
	Requires building information	Requires building information
	Requires building information	Requires building information

Specification	No. of cisterns	Flushing frequency (flushes/hour)

Specification	Usage/person/day	Usage factor
	Requires building information	Requires building information

Specification	Usage/person/day	Usage factor
Please select	Requires building information	Requires building information

Specification	Usage/person/day	Usage factor
	Requires building information	Requires building information
	Requires building information	Requires building information
	#N/A	#N/A
	#N/A	#N/A
	#N/A	#N/A
-	-	-
	Requires building information	0.67
	Requires building information	1.00
	-	60.00
	-	0.450
	-	30.00
	#N/A	#N/A
-	-	-
-	-	-

Total



Has, or will, the greywater system be specified and installed?

(ts)	Greywater Collected	Proportion of components collected from (%)
Typical greywater yield (litres)	Frequency of yield (days)	Greywater yield (litres/day)

Total



Has, or will, the rainwater system be specified and installed?

How has the storage capacity for the proposed system been calculated?

Hydraulic filter efficiency (%)	Yield co-efficient (%)	Annual rainwater yield (Litres)

Rainwater yield if detailed:

Daily rainfall collection (litres)



Total

Component	Greywater and/or rainwater utilised for component	Proportion of components using greywater and/or rainwater yield (%)

Total

Other permissible components

--

--

Total

Total

--

	Litres/person/day
Consumption - modelled baseline performance benchmark (excludes fixed uses)	Requires building information
Component Water consumption - modelled performance (excludes fixed uses)	Requires building information
Modelled water demand met via greywater and rainwater sources	Requires building information
Minimum % efficiency improvement for component specifications been met	Requires building information
Net modelled water consumption (excludes fixed uses)	Requires building information
Percentage improvement	Requires building information
Total Wat 01 BREEAM credits achieved	Requires building information
Total Wat01 BREEAM Innovation credits achieved	Requires building information
Key Performance Indicator - use of freshwater resource (includes fixed uses)	Requires building information



Key

>

- Cells that are white with a black border require user input
- Cells that are light grey contain fixed data or a formula and
- Cells that are dark grey are user input cells which are not
- A red arrow indicates that option selection or mandatory calculator will not be able to determine the number of BR an absence of option selection or data entry.

Default daily hours of operation

Net Floor Area (m ²)

#VALUE!

Note: Only select this activity if there is a permanently staffed kitchen that will provide default number of kitchen staff and water consumption from food preparation :



Consumption (L/person/day)
Requires building information
Requires building information

Note: please select the relevant option for WC component opposite
 Note: Where the WC facilities are non-gender specific, please still enter the WC 6 litres against both male and female categories. The calculation will not double of male to female users for this building type.

Consumption (L/person/day)
Requires building information

Consumption (L/person/day)
Requires building information

Note: This consumption total accounts for the ratio of male users for this building specified in the building, this consumption figure is adjusted by a ratio of use. If

Consumption (L/person/day)
Requires building information

Consumption (L/person/day)
Requires building information
Requires building information
#N/A
#N/A
#N/A
Requires building information
Requires building information
Requires building information
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Requires building information
Requires building information
Requires building information
Requires building information
Requires building information
Requires building information

Hide rows: N/A for schools
 Hide rows: N/A for schools
 Hide rows: N/A for schools

Hide rows: N/A for schools

Microcomponent Consumption (L/person/day)
Requires building information

Note: This total includes the contributions from fixed uses, including where appropriate a more accurate reflection of the buildings total water consumption. The fixed uses include the percentage of water saving measures implemented and the number of BREEAM credits achieved. The percentage improvement specification e.g. WC flushing.



Please select

Greywater yield (L/person/day)
Greywater yield (L/person/day)

Hide rows: N/A for offices
Hide rows: N/A for offices

Greywater yield (L/person/day)
Requires building information



Please select



Rainwater yield (L/person/day)

Rainwater yield (L/person/day)



Greywater and/or rainwater yield (L/person/day)

Maximum permissible demand (L/person/day)
Demand met by yield (L/person/day)

Maximum permissible demand (L/day)
Demand met by yield (L/person/day)

Greywater and/or rainwater demand met by yield (L/person/day)



m ³ /person/yr
Requires building information

Requires building information

Requires building information

Requires building information

Requires building information

t (data entry/option selection)

d do not require any user input

applicable due to either building type or user input/option selection or default setting
data entry is required in one of the cells on the row where this arrow appears. Without
LEEDAM credits. Where the term "Requires building information" appears check to make

prepare hot and cold meals for the building's staff/students/pupils. Enter the area of
activity area. If an assembly hall is used as a dining area, then enter the area of the as

specification against both WC male and WC female categories i.e. if there are two W
: count water consumption in this instance as the consumption figure calculated for e

ing type i.e. the ratio of building users who will operate the flush. Where more than o
re ratio is determined according to the proportion of urinals bowls in the building op

licable vessel filling, kitchen cleaning and food preparation. Default fixed use totals a
use totals are not however included in the water consumption total used to determin
rovement is based only on the consumption of water from uses that can be heavily i

g. Note these cells can change to ones requiring user input depending on the users option select
but appropriate selection/data the
ke sure there are no red arrows indicating

the seated dining area only (not kitchen/serverly areas), this is used to estimate the number of cc
sembly hall used for dining against this function.

Cs with a 6 litre effective flush, then enter
 each WC component is adjusted by the ratio

WC component - all activity areas
Please select
WC - female

one type of urinal flushing control is
 created using this type of control.

Urinal component - all activity areas
Automatically operated flushing cistern

Urinal component - all activity areas
Manual/automatic operated pressure flushing valve

Urinal component - all activity areas
Waterless urinals (all activity areas)

Taps components (personal hygiene) - all activity areas
Wash hand basin taps
Shower use
Shower use (bath present)
Bath use (no shower present)
Bath use (shower present)
Fixed use - vessel filling
Tap components (cleaning) - staff kitchenette
Kitchen taps - kitchenette
Dishwasher
Tap components (cleaning and food preparation) - c
Kitchen taps - pre-rinse nozzle
Dishwasher
Waste disposal unit
Washing machine
Fixed use - food preparation
Fixed use - kitchen cleaning

are included with the calculations to provide
 the assessed buildings percentage
 influenced by the microcomponent

Greywater/rainwater data check
#VALUE!

#VALUE!

Requires building type definition in calculator
Education - Staff office and administration areas
Education - Common room
Education - dining area
Requires building type definition in calculator
Education - Lecture theatre
Education - Study area
Education - Workshop

Education - Information Technology space
Education - Laboratory
Total default occupancy

Note: If greywater is collected from a component/sc
Note: This consumption total accounts for the ratio
Note: Where waterless urinals are specified in the a
Note: Please select the relevant option for waterles:

ion in other cells.

vers per day and subsequently the

Baseline Performance Specification	Usage/person/day
0.00	Requires building information
0.00	Requires building information

Baseline Performance Specification	Urinal consumption (L/bowl/day)
0	#N/A

Baseline Performance Specification	Usage/person/day
1.5	Requires building information

Baseline Performance Specification	Usage/person/day
1.5	Requires building information

Baseline Performance Specification	Usage/person/day
0.00	Requires building information
0.00	Requires building information
0.00	#N/A
0.00	#N/A
0.00	#N/A
N/A	N/A
0.00	Requires building information
0.00	Requires building information
anteen/restaurant	
0.00	-
0.00	-
0.00	-
0.00	#N/A
N/A	-
N/A	-

% actual improvement

Credits achieved

Default occupancy rate

- 0.00
- 0.00
- 0.00
- FALSE
- 0.00
- 0.00
- 0.00
- 0.00

Please select
 Waterless urinals - specified
 Waterless urinals - not specified

0.00
0.00
0.00

Source not accounted for above i.e. their consumption is not estimated, then the amount of male users for this building type i.e. the ratio of building users who will operate in the assessed building, for the purpose of the baseline benchmark standard 1.5 litre flush urinals specification opposite.

Usage factor	Baseline Consumption (L/person/day)
Requires building information	0.00
Requires building information	0.00

Urinal consumption (L/day)	Baseline Consumption (L/person/day)
#N/A	#N/A

Usage factor	Baseline Consumption (L/person/day)
Requires building information	#DIV/0!

Usage factor	Baseline Consumption (L/person/day)
Requires building information	#DIV/0!

Usage factor	Baseline Consumption (L/person/day)
Requires building information	0.00
Requires building information	0.00
#N/A	0.00
#N/A	0.00
#N/A	0.00
N/A	0.00
0.67	0.00
1.00	#VALUE!
60.00	0.00
0.45	0.00
30.00	0.00
#N/A	0.00
N/A	Requires building information
N/A	Requires building information

Baseline Consumption (L/person/day)	
Total	#N/A

	Total from fixed uses
Total	#VALUE!

Please select
Yes
No
System not specified

Not applicable

Requires building information

Please select
WC - male (urinals installed)
WC - male (no urinals installed)

Please select
Education - Pre-schools
Education - Schools and colleges
Education - Universities
Education - Higher education institutions

Please select
BS8515 Intermediate approach
BS8515 Detailed approach

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98%
99%
100%

BREEAM 2

Water con

Plea

Type 1

Type 2

Type 3

Type 4

Type 5

Type 6

Type 7

Type 8

Non-Potable

→

→

→

Please select

Wat 01 Re

2016 Wat 01 Water consumption calculator - Other building types

Please select the option that best defines the building type being assessed

Precipitation zone:

Consumption - Building microcomponents

Component assessed for building type (if specified)

Please confirm if this component type is specified in the building and will be installed
Please select the number of different types of specification that you wish to enter for this component type?

Please confirm the BREEAM water efficient component level achieved for this component - type 1

Please confirm the no. of type 1 components specified

Type 1 - aggregate component level

Please confirm the BREEAM water efficient component level achieved for this component - type 2

Please confirm the no. of type 2 components specified

Type 2 - aggregate component level

Please confirm the BREEAM water efficient component level achieved for this component - type 3

Please confirm the no. of type 3 components specified

Type 3 - aggregate component level

Please confirm the BREEAM water efficient component level achieved for this component - type 4

Please confirm the no. of type 4 components specified

Type 4 - aggregate component level

Please confirm the BREEAM water efficient component level achieved for this component - type 5

Please confirm the no. of type 5 components specified

Type 5 - aggregate component level

Please confirm the BREEAM water efficient component level achieved for this component - type 6

Please confirm the no. of type 6 components specified

Type 6 - aggregate component level

Please confirm the BREEAM water efficient component level achieved for this component - type 7

Please confirm the no. of type 7 components specified

Type 7 - aggregate component level

Please confirm the BREEAM water efficient component level achieved for this component - type 8

Please confirm the no. of type 8 components specified

Type 8 - aggregate component level

Total number of fittings for component

Level achieved for component type

Component weighting factor for building type

Contribution to overall component level achieved

Overall component level achieved

Water Yield - Water Recycling

Greywater system specified and installed in compliance with BS8

Rainwater system specified and installed in compliance with BS8

from the drop down list below how you would like to assess performance of the specified system(s) and

Results

Total Wat 01 BREEAM credits achieved

Total Wat 01 BREEAM Innovation credits achieved



Please select:

Please select



WC	Urinals	Wash hand basin taps	Showers	Baths
No	No	No	No	No

--	--	--	--	--

--	--	--	--	--

--	--	--	--	--

--	--	--	--	--

Note: for the purpose of awarding credits this figure is rounded down to the n



BS8525-1:2010 Greywater Systems - Part 1 Code of Practice

BS15:2009 Rainwater Harvesting Systems - Code of practice

Other permissible source of non potable recycled water

Please give a brief description of source/system e.g. waste water from building process

then enter the relevant % opposite:

Note: input figure t

BREEAM component level achieved for water recycling *Note: credits only a*



Requires building information



Kitchen taps (staff/residents kitchen)	Domestic sized washing machines	Domestic sized dishwashers	Kitchen taps: restaurant (pre-rinse nozzles only)	Waste disposal unit (commercial kitchens only)
No	No	No	No	No

--	--	--	--	--

--	--	--	--	--

--	--	--	--	--

--	--	--	--	--

nearest whole component level, e.g. if the total from the individual component levels is 0.7, then the



--	--	--	--	--

to two decimal places only.

available for achieving BREEAM component level 4 or 5 in the elemental method.



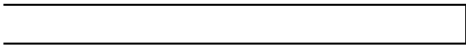
--	--

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--	--

component level achieved is 'Baseline', not Level 1.



Cells that are white with a black border require user input

Cells that are light grey contain fixed data or a formula

Cells that are dark grey are user input cells which are

A red arrow indicates that option selection or manual calculation will not be able to determine the number of cells with no red arrows indicating an absence of option selection

Components covered by BREEAM are typically not present but require assessment under Wat01 using this calculator based on the basis of the performance specification is applicable, but that component is not specified

are specified and present but its contribution to overall performance is negligible. Likewise, those consuming a significant majority of energy (depending on the component level achieved). This contribution is detailed in the factors, below.

to ones requiring user input depending on the users option selection in other cells.

the

re there are

BREEAM International 2016 Wat 01 Water Consumption: Average

Building Details

Building name

BRE Assessment Reference No.

WCs

WC type

1	
2	
3	
4	
5	

Urinals

Urinals - automatically operated flushing cisterns

Urinal Flushing System type	Specification Cistern capacity (litres)
1	
2	
3	
4	
5	

Urinals - Manual or automatically operated pressure flushing valves

Urinal Flushing System type

1	
2	
3	

4	
5	

Taps (excluding kitchen sink taps)

Tap type	
1	
2	
3	
4	
5	

Kitchen sink taps

Tap type	
1	
2	
3	
4	
5	

Showers

Shower type	
1	
2	
3	
4	

5	
---	--

Baths

bath type	
1	
2	
3	
4	
5	

Water consumption

Water consumption

Specification	Quantity (No.)		Total per fitting type
Effective flush volume (litres)			0.00
			0.00
			0.00
			0.00
			0.00
Total	0		0.00

Average effective flushing volume (litres)

Water consumption

Flushing Frequency (flushes/hr)	Quantity (No.)		Total per fitting type
		0	0.00
		0	0.00
		0	0.00
		0	0.00
		0	0.00
		0.00	0.00

Average cistern capacity (litres)

No. of cisterns

Average flushing frequency (flushes/hour)

Specification	Quantity (No.)		Total per fitting type
Flush volume (litres)			0.00
			0.00
			0.00

			0.00
			0.00
Total	0		0.00

Average flush volume (litres)



Specification Flow rate (litres/minute)	Quantity (No.)		Total per fitting type
			0.00
			0.00
			0.00
			0.00
			0.00
Total	0		0.00

Average flow rate (litres/min)

Proportionate flow rate (litres/min)



Specification Flow rate (litres/minute)	Quantity (No.)		Total per fitting type
			0.00
			0.00
			0.00
			0.00
			0.00
Total	0		0.00

Average flow rate (litres/min)

Proportionate flow rate (litres/min)



Specification Flow rate (litres/minute)	Quantity (No.)		Total per fitting type
			0.00
			0.00
			0.00
			0.00

			0.00
Total	0		0.00

Average flow rate (litres/min)

Proportionate flow rate (litres/min)

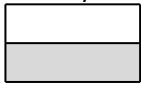


Specification Capacity to overflow (litres)	Quantity (No.)		Total per fitting type
			0.00
			0.00
			0.00
			0.00
			0.00
Total	0		0.00

Average capacity to overflow (litres)

Proportionate capacity to overflow (litres)

Key



Cells that are white with a black border require user input (data entry/option selection)

Cells that are light grey contain fixed data or a formula and do not require any user input

BREEAM 2013 Wat 01 Water Consumption

Current Version	Release date	Description of changes/additions to previous version res
3.0	21/02/2017	Included 'Retail - bar/public house or restaurant' and 'Rei Other building type calculator.
Previous Versions	Release date	Description of changes/additions
2.0	08/11/2016	Fixed error in selecting Residential Institutions - Long ter
1.0	21/03/2016	BREEAM International New Construction 2016 go live ver



ulting in current version

tail - bar/public house (no restaurant)' building types within

m stay building type within Other building type calculator.

sion.