

DRAINAGE STATEMENT

Land to the rear of Laburnum, Gretton Fields, Gretton, GL54 5HH

Change of use of land for the stationing of a mix of 10 shepherd's huts, lodges and safari tents for use as short-stay holiday accommodation, car parking and landscaping

July 2021

Introduction

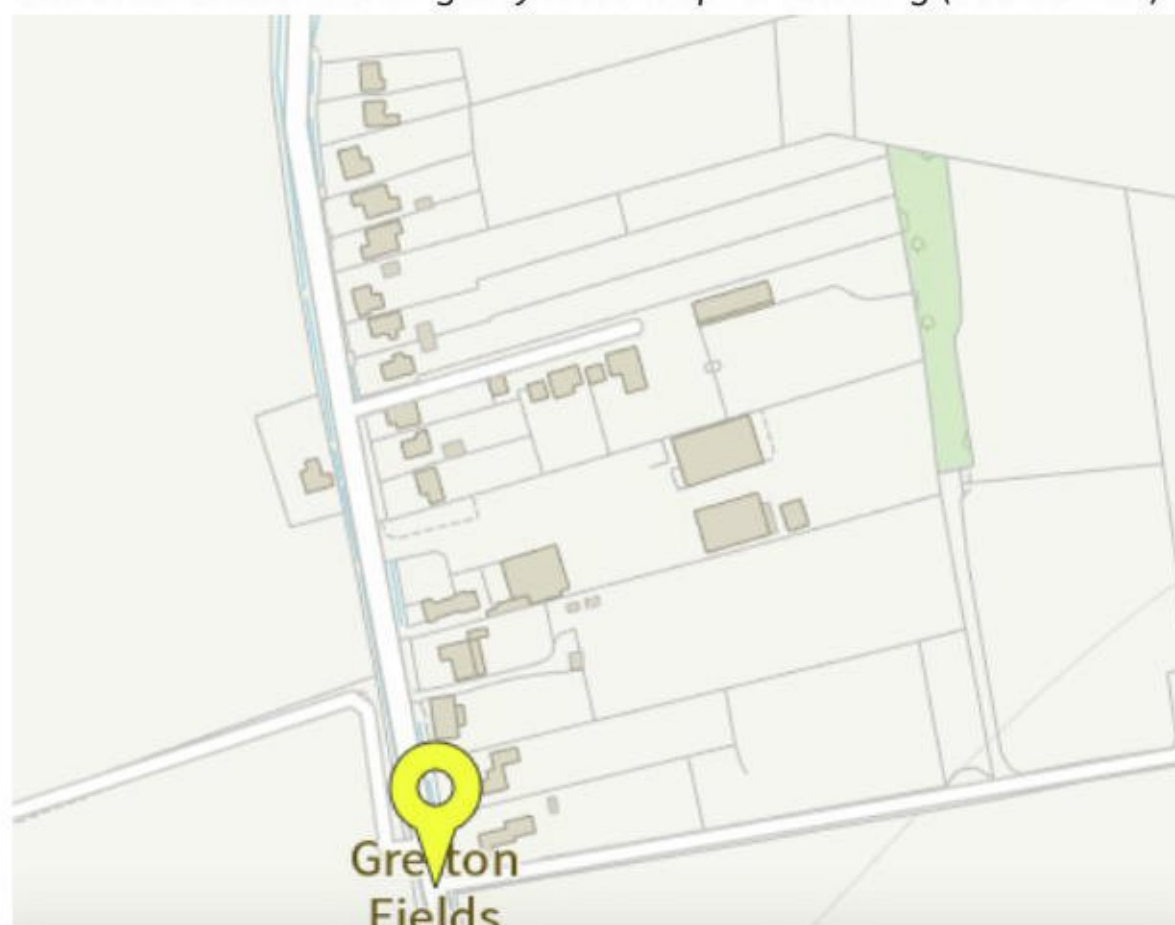
1. Zesta Planning has been appointed to prepare a Drainage Statement to accompany a full planning application for the change of use of land for tourism purposes, to provide for the siting of a mix of 10 shepherd's huts, lodges and safari tents for use as short-stay holiday accommodation, car parking and landscaping on land to the rear of Laburnum, Gretton Fields, Gretton, Cheltenham, GL54 5HH.
2. The level of information provided is commensurate with the small-scale nature of the development proposed. It includes an assessment of flood risk and establishes options for a proposed drainage scheme, including foul sewage provisions.
3. The purpose of this Statement is to demonstrate that the proposal would not cause any fundamental concerns over drainage. The proposed units will be provided with a water flushed, household toilet, the waste of which will be processed through an existing gravity bio system, purifying the waste, allowing for re-entry to the watercourse.

Site Context and the Proposed Development

4. The application site covers a parcel of land to the rear of the properties known as Laburnum, Rosewood and Two Acre Croft at Gretton Fields, which forms part of the extended village of Gretton. The site is located in the eastern side of Gretton Fields and is part of a large cluster of dwellings situated close to Gretton and around 1 mile to the south of Alderton.

5. Immediately to the west of the site, permission was granted for two detached dwellings, which have been subsequently built out (Rosewood and Two Acre Croft). The site also comprises a former stable building which has planning permission for the use as three holiday lets. The conversion works under this permission are currently being implemented.
6. The majority of the site has been used as paddock land and there is a small grouping of fruit trees forming a modest orchard in the north eastern corner of the site.
7. The site is bounded by mature vegetation and hedgerow along the north, east and south boundaries. The Gilder Transport Yard is located directly to the south of the application site, which extends the built form of Gretton Fields out to the east.
8. In terms of policy designations, the Local Plan Proposals Map shows that the site is within a Special Landscape Area (SLA). There are no other planning or environmental constraints or designations affecting the site, which is located within Flood Zone 1 (lowest risk) as shown on the Environment Agency's most up-to-date Flood Maps.
9. This proposal is for the change of use of land for holiday use including the stationing of a mix of 10 shepherd's huts, lodges and safari tents. Parking, landscaping and other associated works are also included within the proposal. It is important to note that the permission is for the use of the land only as the holiday accommodation comprises of non-fixed structures that do not comprise operational development in their own right.
10. The proposed site would be located wholly within Flood Zone 1 (low risk) as defined by the Environment Agency's (EA) Flood Maps for Planning. A copy of the EA Flood Map for the area is shown below and demonstrates that the whole area is at low risk:

Extract of Environment Agency Flood Map for Planning (Source – EA)



11. The site is therefore not considered to be at risk of fluvial flooding. In addition, the EA Maps also confirm that this site is not susceptible to surface water flooding. Wastewater will be processed through an existing gravity bio system. A gravity bio treatment plant uses gravity to discharge the processed waste into the allocated discharge point.

Site Specific Flood Risk and Addressing the Sequential and Exceptions Tests

12. The NPPF 2021 makes clear that it is the Government’s intention to steer new development to areas with the lowest probability of flooding (Flood Zone 1). Development proposals in areas of higher risk of flooding should be resisted, but where it is necessary, it should be made safe without increasing flood risk elsewhere. This is achieved by applying a ‘Sequential Test’, which requires an assessment of sites available in Flood Zone 1 first, and only where such sites are not available will higher risk zones be considered.

13. The current application shows that the site falls wholly within Flood Zone 1 and therefore passes the Sequential Test. Paragraph 066 of the PPG sets out the Flood Risk Vulnerability Classifications. Table 2 defines this type of use as a ‘More Vulnerable’ use in flood risk terms. Table 3 then defines the types of use acceptable in each zone:

Flood Zones	Flood Risk Vulnerability Classification				
	Essential infrastructure	Highly vulnerable	More vulnerable	Less vulnerable	Water compatible
Zone 1	✓	✓	✓	✓	✓
Zone 2	✓	Exception Test required	✓	✓	✓
Zone 3a †	Exception Test required †	x	Exception Test required	✓	✓
Zone 3b *	Exception Test required *	x	x	x	✓*

Key:
 ✓ Development is appropriate
 X Development should not be permitted.

14. This guidance shows that 'More Vulnerable' uses are acceptable in principle in Flood Zone 1 meaning that the Sequential Test is passed. As such, it is not necessary to apply the Exceptions Test. The proposed site is not considered to be at risk of flooding in itself, nor would it increase the risk of flooding to third party property. The site can be safely evacuated to the front along main road which is on dry land within Flood Zone 1.

Surface Water Drainage Strategy

15. An initial inspection of the ground conditions, is that surface water drainage can be adequately addressed by a combination of infiltration techniques, including soakaways and water butts.
16. The proposed structures will be built on transportable structures, leaving no permanent change to the landscape. Water will be collected from roofs via water butts, which will be used to water the site in general. Given the small-scale nature of the proposals and the extent of planting on the site, the collection of rain water and the processing and recycling of waste water via a gravity bio system, this will be sufficient to manage water on site.
17. Should it be required, further details of drainage proposals can be secured by means of planning condition and/or Building Regulations.
18. As for flood resilience, the scheme could sign up to EA flood warnings in the event of an impending flood. This is where the Environment Agency contact all listed households and businesses on their flood database in the event of an impending flood. This provides some pre-warning of a likely event and time to make any necessary evacuation plans. The units will be on raised, moveable structures, preventing them from taking on water, in the case of an extreme weather event.
19. The proposal ultimately includes an acceptable form of sustainable drainage techniques, having regard to the Council's Flood and Water Management SPD and local planning policy.

SuDS Maintenance Plan

20. In accordance with Ciria SuDS Manual C753, the following maintenance schedule will be applied to the proposed drainage features and ancillary components:

Maintenance Schedule	Required Action	Frequency
Regular maintenance	Inspect for sediment and debris.	Annually
	Cleaning of gutters and any filters on downpipes	Annually (or as required based on inspections)
	Trimming any roots that may cause blockages within the drainage system	Annually (or as required)
Occasional	Remove sediment and debris/oil.	As required, based on maintenance inspections
Remedial actions	Reconstruct system and/or replace or clean void fill, if performance deteriorates or failure occurs	As required
Monitoring	Inspect all silt traps and note rate of sediment accumulation	Four monthly in the first year and then annually
	Inspect stream outfall – to be clear of silt/debris. At all times, clear as necessary	Annually

General Notes:

21. Maintenance will usually be carried out manually, although a suction tanker/jetter can be used for sediment/debris removal as required. If maintenance is not undertaken for long periods, deposits can become hard packed and require considerable effort to remove.
22. Silt and debris to be removed from the site and disposed by approved contractors.
23. Replacement of water butt systems will be necessary if the system becomes blocked with silt or other debris. Effective monitoring will give information on changes in infiltration rate and provide a warning of potential failure in the long term.

Foul Drainage

24. Paragraph 020 of the Government's National Planning Practice Guidance (PPG) provides a hierarchy of foul drainage options that must be considered and discounted as part of a sequential approach, having reasonable regard to factors such as costs and practicality. The sequential order advocated by the PPG is as follows:
1. Connection to the public sewer (where there is one available)
 2. Package Treatment Plant
 3. Septic Tank
 4. Cesspool
25. The general presumption is that connections will be made to the public sewer where such provision is a possibility, having regard to reasonable cost and land constraints. However, where such provision is not reasonably possible, Bio-disk Package Treatment Plants and Septic Tanks will be considered.
26. Whilst there is a mains sewer that runs along the Gretton Fields Road, it is noted in this case that the application site area is sited on a significantly lower ground level and a substantial distance from the public network. Given the levels of the land, it is not possible to secure the land fall necessary to provide a gravity connection to the mains, without substantially raising the ground levels of the site. Such an engineering operation would have the potential to significantly affect the landscape and visual features of the site and is therefore undesirable. It would also be cost prohibitive.
27. As such, the next sequentially preferable approach is to provide a Bio-disk Package Treatment Plan, and that is what is proposed in this case. The location for the proposed treatment plant is shown on the Illustrative site layout plan. The details of the proposed specification model can be secured by means of planning condition if necessary or through Building Regulations, as can any details over discharge. Nevertheless, this provides a reasonably sustainable location for the disposal of foul sewage from the site.

Conclusions

28. The purpose of this assessment has been to describe the proposed drainage strategy options for the development and consider the water management of the proposed development, having regard to the requirements of national and local planning policy guidance.
29. The Statement confirms that all operational development associated with this proposal is located within Flood Zone 1 and is not considered to be at risk of flooding. In this regard, this element of the proposal passes the Sequential Test.
30. In terms of site-specific flood risk, the ground levels of the site demonstrate that the proposed site is in an area at a higher level than the 1 in 100-year flood event. The proposal is therefore not considered to be at risk of flooding. It is proposed that surface water be addressed by use of water butts and other forms of above ground SuDS techniques, which can be provided within the site and is commensurate to the size of the development. There is no reason to suspect that this is not achievable in this location.
31. The proposal therefore complies with flood risk policies contained within the Development Plan, NPPF and PPG. The proposal ultimately constitutes sustainable development from a flood risk and drainage perspective.
32. In terms of foul drainage, this Statement explains the reasons why it is necessary to dispose of foul waste via use of a bio-disk treatment plant. This is due to the practical issues surrounding the low-lying ground levels of application site, in comparison to the significantly higher levels of the existing mains sewer system that runs along Gretton Fields Road. The impracticality and cost prohibitive nature of these factors, make the Bio-disk treatment system the next most sequentially preferable solution.
33. This arrangement complies with the requirements of paragraph 020 of the Government's PPG and the requirements of the Council's adopted Flood and Water Management SPD.



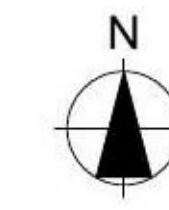
Example Photo of Proposed Shepherd Hut



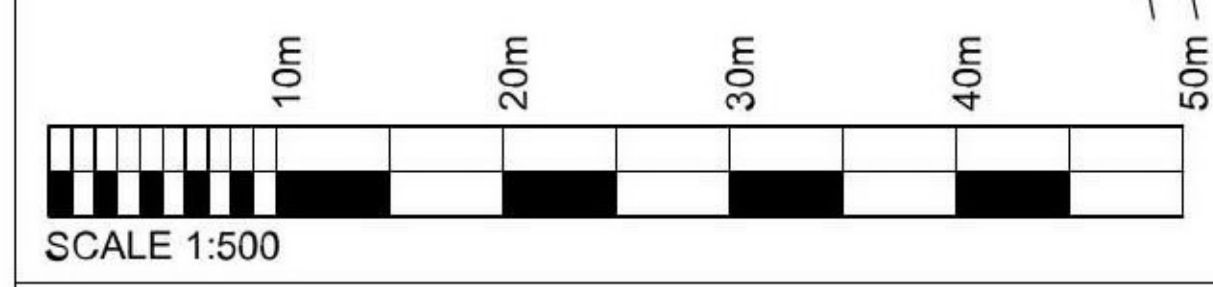
Example Photo of Proposed Safari Lodge



Example Photo of Proposed Lodge



- 1** PROPOSED SITE ACCESS, EXISTING ACCESS DRIVE PROVIDES 5.7M WIDTH, REDUCING TO 5.0M AFTER PASSING POINT
- 2** LANDSCAPED PINCH POINT/PASSING POINT
- 3** SHARED ACCESS DRIVE, SHARED ACCESS COURTYARD / VEHICLE TURNING AND PARKING PROVISION FOR HOLIDAY LETS
- 4** HOLIDAY LET PROVISIONS - 3NO SHEPHERD HUTS (5.4X2.3M), 3NO TWO BED LODGES (5.2MX8.6M) & 4NO SAFARI TENTS (6.0MX4.0M)
- 5** HOLIDAY LETS APPROVED UNDER PLANNING APPLICATION REFERENCE - 17/01147/FUL
- 6** APPROVED RESIDENTIAL DEVELOPMENT UNDER PLANNING APPLICATION REFERENCE - 17/00268/FUL
- 7** EXISTING ORCHARD TREES RETAINED AND PROTECTED
- 8** PROPOSED HEDGE AND TREE SCREEN PLANTING
- 9** EXISTING EASTERN BOUNDARY HEDGE AND TREE PLANTING RETAINED AND PROTECTED
- 10** EXISTING SOUTHERN BOUNDARY HEDGE AND TREE PLANTING RETAINED AND PROTECTED



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Revisions		
P4	02/03/21	Package Sewage Treatment Plant added to layout.
P3	01/07/21	Lodge example updated, bin collection area added.
P2	13/05/21	Proposals updated to client comments

Project
 Proposed Holiday Lets To Land At 2 Acre Croft

Client
 2 Acre Croft
 Gretton Fields

Title
 Proposed Sketch Site Layout Plan

Drawing No.	Date	
2102 - SK02	May 2021	
Revision	Scale (if A2)	Drawn
P4	1:500	AY

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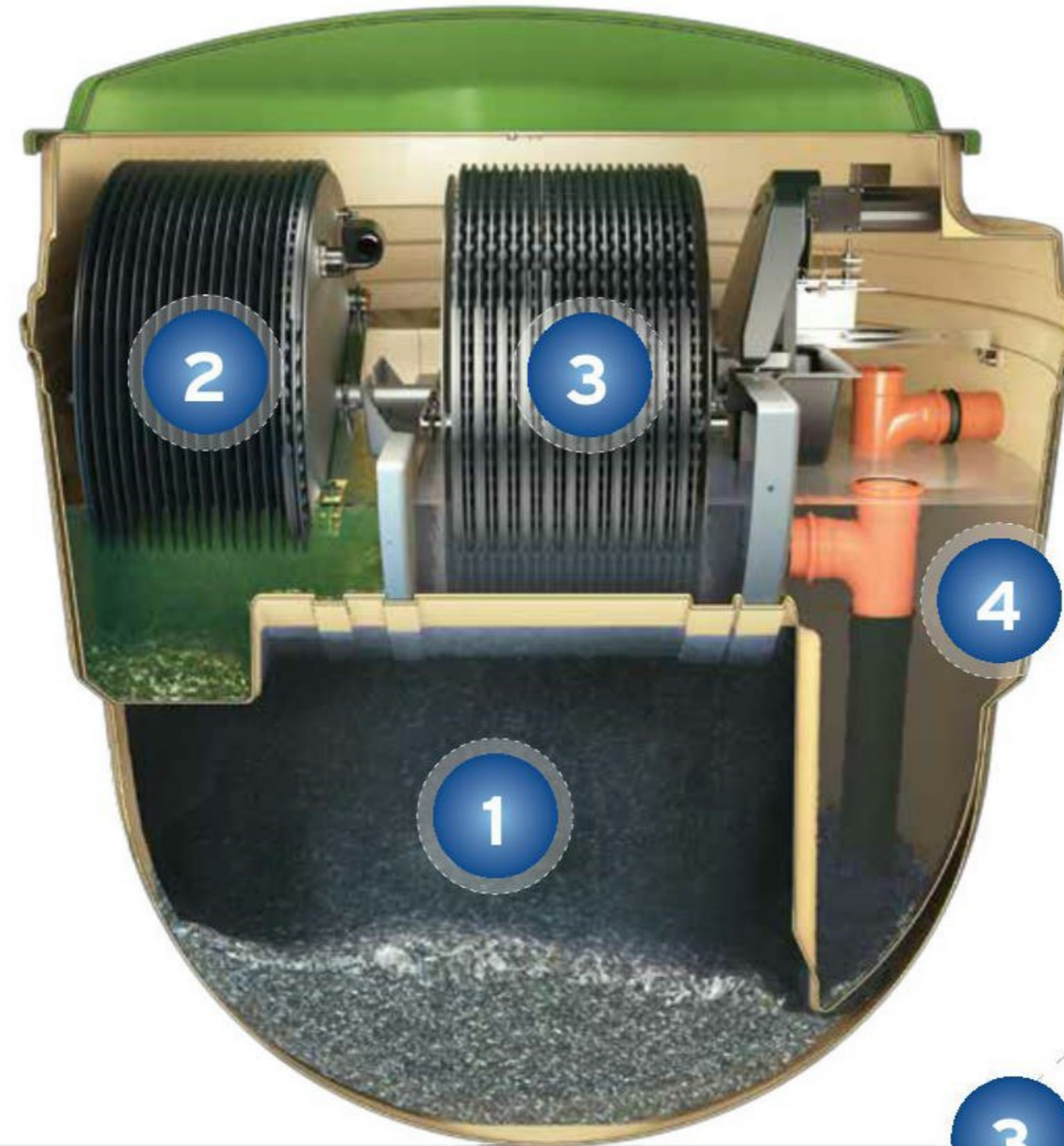


BioDisc® HOW IT WORKS

The Rotational Biological Contactor (RBC) is central to the operation of each Kingspan Klargester BioDisc®. It supports a biologically active film or biomass onto which aerobic micro-organisms, naturally found in sewage, become established. Natural breakdown of sewage can then occur as described below.

UNIT SIZE	SINGLE HOUSE		MULTIPLE HOUSES	
	BA	BA-X	BB	BC
Population Equivalent	1 House up to 4 bedrooms	1 House up to 7 bedrooms	2 House up to 8 bedrooms	3 House up to 12 bedrooms
Overall diameter / Width (mm)	1995	1995	1995	2450
Standard drain inlet (mm)	750*	750*	750*	600†
Standard outlet (mm)	835	835	835	685
Depth from invert to base (mm)	1400	1400	1400	1820
Pipework Diameter (mm)	110	110	110	110
Sludge storage period (Approx)	12 Months	9 Months	6 Months	7 Months
Standard power supply	Single Phase	Single Phase	Single Phase	Single Phase
Motor rating	50W	50W	50W	75W
Weight (tonnes) standard units	0.388	0.418	0.418	0.650

* BA-BB 450/1250 † BC 11000

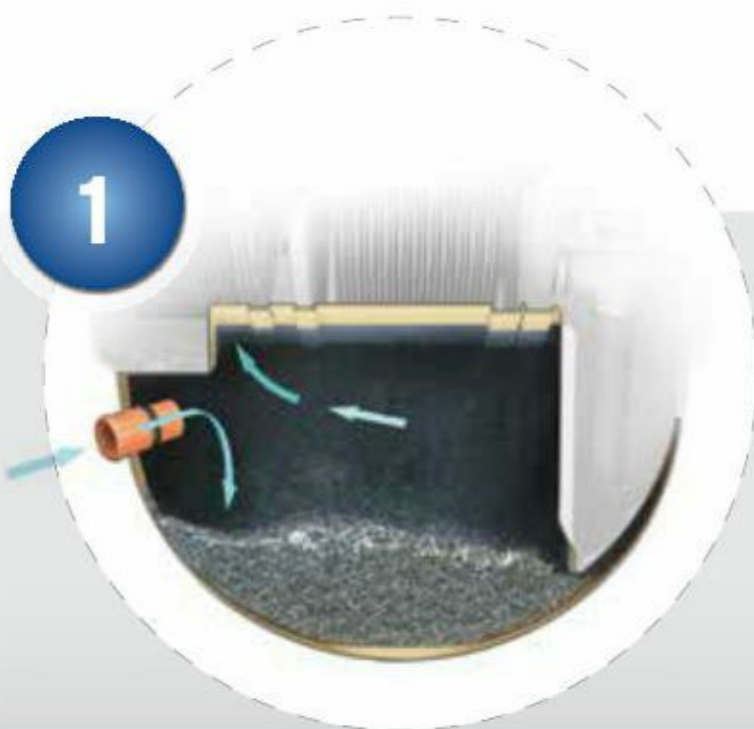


ROTATING BIOLOGICAL CONTACTOR (RBC)

The RBC comprises banks of vacuum formed polypropylene media supported by a steel shaft. This is slowly rotated by a low energy consumption electric motor and drive assembly.

BioDisc® from Kingspan Klargester

For further technical information and videos on the BioDisc® treatment plant visit our website at kingspanklargester.com



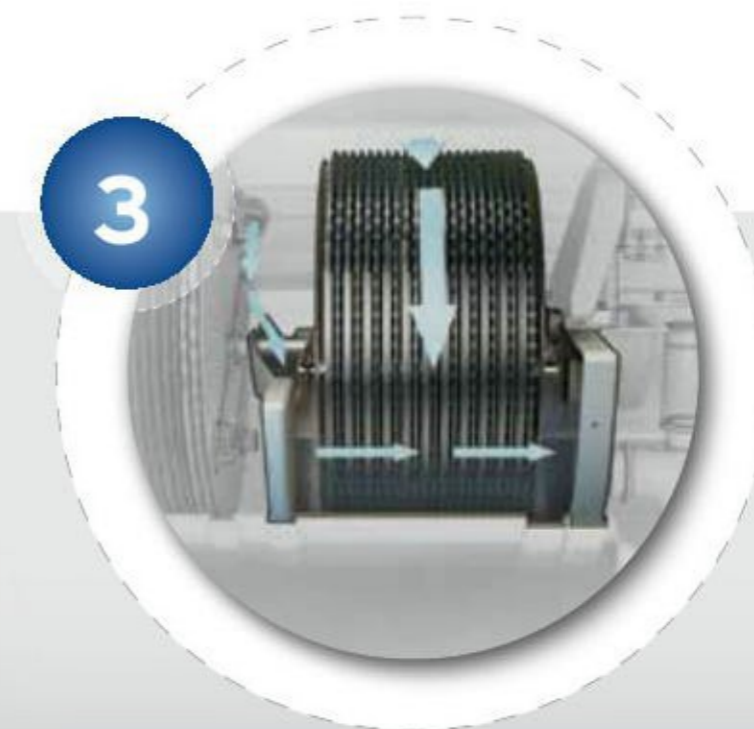
PRIMARY SETTLEMENT TANK

Wastewater and sewage flows into the primary settlement tank where the large solids are retained for future removal.



FIRST STAGE BIOLOGICAL TREATMENT

The liquor and fine solids then flow into the Biological Treatment Zone 1 where the first stage of treatment occurs.



SECOND STAGE BIOLOGICAL TREATMENT

The liquor is then fed forward at a controlled rate into Biological Treatment Zone 2 for further cleaning.



FINAL SETTLEMENT TANK

The clean liquid passes into the final settlement tank where it can be discharged to ground or water course.