AGAR GROVE

CONCEPT FOR RAINWATER HARVESTING ON FUTURE PHASES

Rev A 07/11/17

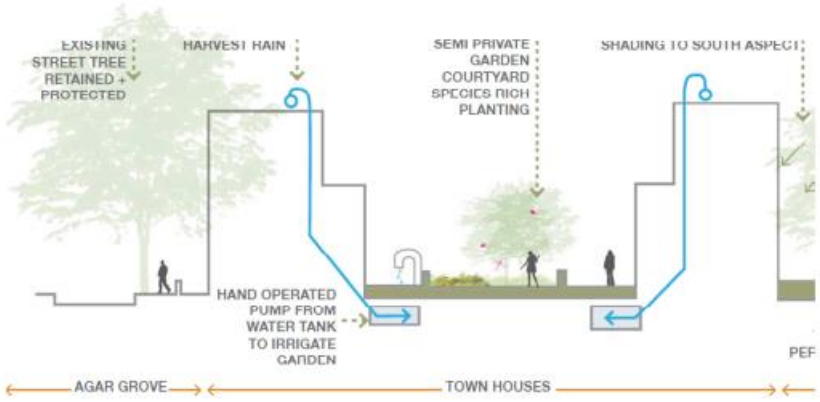
Condition 32 states -	<u>Surface water drainage</u> The development hereby permitted shall not be commenced until a detailed surface water drainage scheme for the site, based on the agreed flood risk assessment (FRA) Agar Grove, Drainage and Flood Risk, December 2013, project reference 28732, FRA issue 3 and technical note, number28732-C-TN03, dated 22.01.14, has been submitted to and approved in writing by the local planning authority. The drainage strategy shall include a restriction in run-off to 28.9l/s (as shown in the technical note, 28732-C-TN03) and surface water storage on site as outlined in the FRA. The scheme shall subsequently be implemented in accordance with the approved details before the development is completed.

PBA FRA states the following:

Table 10 - Rainwater harvesting tanks

Blocks	A	CDE	FGHI	JKL	Whole Site
Rainwater Harvesting Tank Volume (litres)	1080	1170	2970	2220	7440

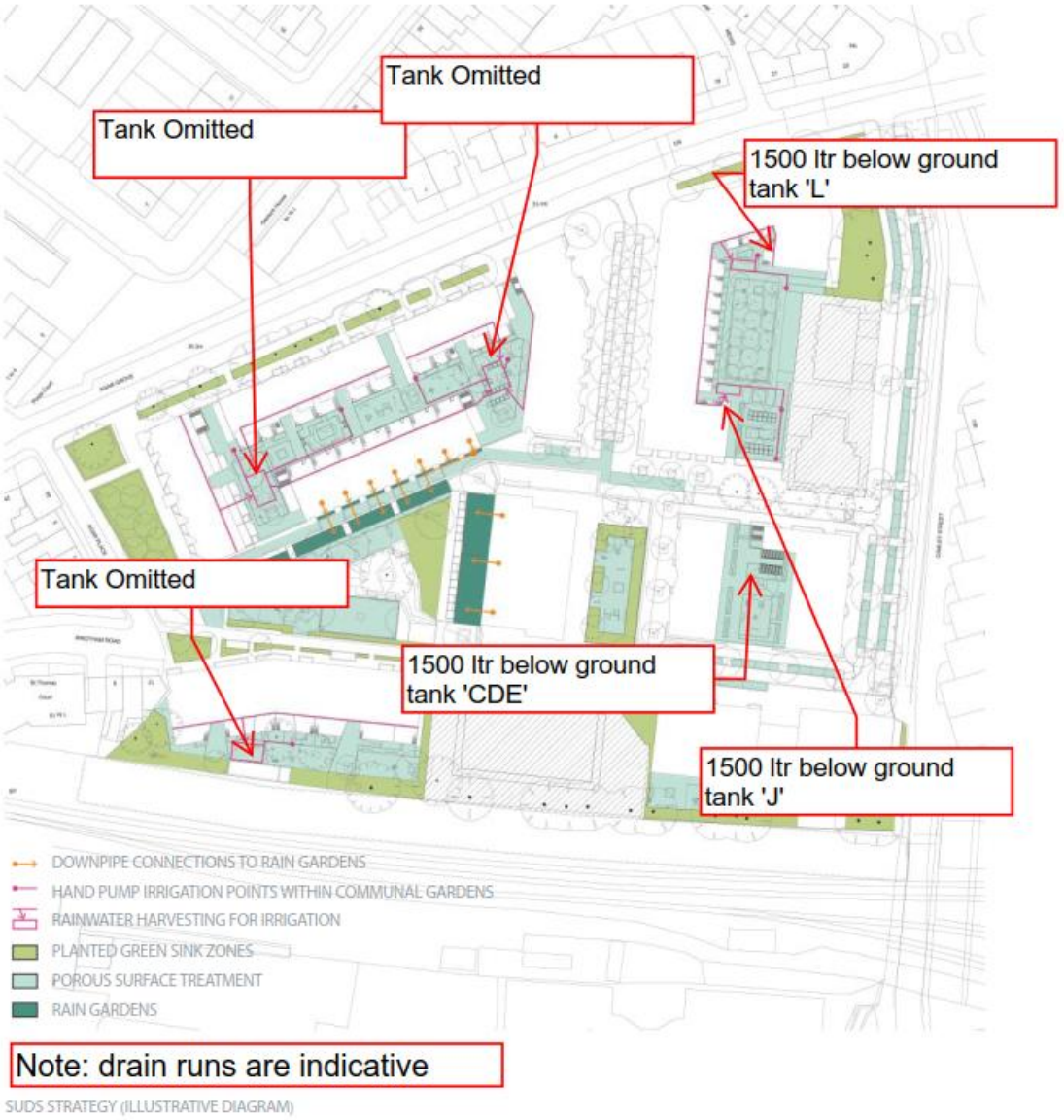
Figure 11 - Conceptual rainwater harvesting proposals (Grant Associates Stage C Proposals)



MAX FORDHAM

The DAS site plan currently shows tanks in A, FGH & JKL only, none shown in CDE:

Update DAS plan to show rainwater harvesting tanks below ground in the locations and numbers shown below.



SUDS STRATEGY (ILLUSTRATIVE DIAGRAM)

Location	**Capacity, ltrs**
A	n/a
CDE	1500
G	n/a
H	n/a
L	1500
J	1500
Total	**4500**

Note that tanks at A, G&H are omitted. As detailed design is already completed on these locations, it would be highly disruptive to re-introduce these at this stage. This will not affect the overall storm water attenuation, as confirmed in a statement from PBA (also see appendix):

"The rainwater harvesting systems proposed for Agar Grove, were designed to serve an irrigation purpose for the public realm / communal garden areas. The volumes proposed for storage of rainwater for re-use, which were included in the PBA FRA (total 7,440l), were specifically not included in the surface water attenuation volumes. This is because there can be no guarantee regarding the volume of spare capacity available in a rainwater harvesting tank, when a storm event occurs.

As such, the decision not to include rainwater harvesting in Phases 1A and 1B has no impact on the surface water drainage strategy detailed in the FRA. "

Local rainwater downpipe(s), are routed to the tank inlet. Laid to required falls; this sets the tank depth. Tank to be located within 20m of downpipe connection. Drainage directly from roof areas only- no surface level water permitted. To drain an area of at least 50m^2 of roof. Pipe work laid to same specification as other below ground drainage on this site- refer to PBA specification.

Provide below ground tanks of 1500 litres actual capacity, for specification refer to attached product (see appendix), or equal and approved. Inline filter and siphon with overflow to drain. Inlet connection with flow smoothing, access hatch. Provide pump chain, NB no electric pump provided. Provide outlet to connect to a hand pump. Overflow connection to storm water drainage (by others).

Provide a single hand pump above the water tank, with connection to RW tank. Hand pump selection to be approved by the CA. Provide signage on pump: "Not drinking water". Pipe work to be MDPE, black and green marking, as per appendix.

Provide a separate, mains-connected & Cat 5 protected outdoor tap for irrigation purposes in case of low rain fall- locations to be identified.

Where downpipes are located in suitable locations; water butts will be provided for garden irrigation.

Maintenance:

All by LB Camden:

Roof, gutters & downpipes to be checked & cleared of debris as necessary 1/year

Tank to be drained, inspected & jet cleaned from above (no access required) 1/year.

Filter to be checked & cleaned as necessary: 1/6 months.

Water quality test as required by HSE- suggest at least 1/year.

No matching project rule suggestions found
RE: FW: Agar Grove. 2013/8088P. Condition 32 - SuDSWesley Wroe to:
b.dixon@maxfordham.com 07/11/2017 09:16
Cc: "Iris Kalaci", "Matthew Wood", "Peter DeSouza", "Claire Hobart"
From: "Wesley Wroe" <wwroe@peterbrett.com>
To: "b.dixon@maxfordham.com" <b.dixon@maxfordham.com>
Cc: "Iris Kalaci" <ikalaci@peterbrett.com>, "Matthew Wood" <mwood@peterbrett.com>, "Peter DeSouza" <pdeSouza@peterbrett.com>, "Claire Hobart" <ch@Grant-Associates.uk.com>

Dear Bertie,

Following our conversation last week, below is the statement from PBA regarding Rainwater Harvesting at Agar Grove.

The rainwater harvesting systems proposed for Agar Grove, were designed to serve an irrigation purpose for the public realm / communal garden areas. The volumes proposed for storage of rainwater for re-use, which were included in the PBA FRA (total 7,440l), were specifically not included in the surface water attenuation volumes. This is because there can be no guarantee regarding the volume of spare capacity available in a rainwater harvesting tank, when a storm event occurs.
As such, the decision not to include rainwater harvesting in Phases 1A and 1B has no impact on the surface water drainage strategy detailed in the FRA.

Does this cover what is required? Please let me know if not, and I can expand it further.

Kind regards,

Wesley Wroe

Civil Engineer

For and on behalf of Peter Brett Associates LLP - Cambridge

t 01223802963
e wwroe@peterbrett.com
w peterbrett.com

From: b.dixon@maxfordham.com [mailto:b.dixon@maxfordham.com]
Sent: 06 November 2017 12:52
To: Wesley Wroe <wwroe@peterbrett.com>
Subject: RE: FW: Agar Grove. 2013/8088P. Condition 32 - SuDS

Hi Wesley,
Do send your bit of text through, and I shall update the summary and issue
thanks
bertie

MAX FORDHAM
42-43 Gloucester Crescent
London
NW1 7PE

Quotation for the supply of Rainwater Harvesting Equipment

Client :

Mr Bertie Dixon
Max Fordham

Site Reference :

Garden Systems for Agar Grove

Prepared by:

Ian Woodcock

ianw@rainwaterharvesting.co.uk

01733 405104 / 07736 45 46 45

Our reference : IMW227811

Date of proposal : 27/10/2017

Your Proposal

Thank you for your time on the telephone yesterday and subsequent email and as requested please find the following information regarding our proposed system.

SHALLOW DIG F-LINE TANK	
	1500
Weight Kg	80
Length	2400
Width	1200
Overall Height	1015 - 1415
Ground to Invert VS60 (635mm Shaft)	320 - 720
Invert to Outlet	162

EXCAVATION	
Length	2800
Width	1600
Overall height VS60	1115 - 1515

Overall height allows for 100mm compacted aggregate

The overall height difference above is because up to 400 mm can be cut off of the 635 mm shaft on site so as to achieve your exact invert level.

The systems below have had the pump removed as requested and the pricing has been based on supplying all 4 at the same time.

If using externally only there is no other requirement for additional filtering or treatment of the water.

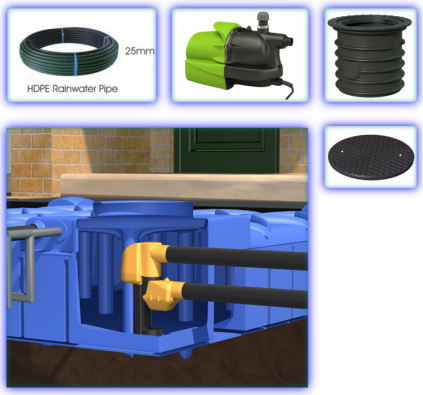
Rainwater Harvesting Limited is a private family owned company, our strong service ethos has been built on many years of experience and this is reflected in our ability to offer both simple to install rainwater harvesting systems and mix and match components to provide bespoke solutions reflecting clients needs. At our 100,000sq ft warehouse in Peterborough we hold over 3000 stock items, we are the largest stockholder of the Shallow Dig Rewatec tanks in the UK and we regularly despatch to site complete rainwater harvesting systems within 5-7 days of order, we also provide full technical support on all our products.

We would welcome the opportunity of supplying your rainwater harvesting system and I can easily be contacted either by phone or email as shown on the previous page

Components and Prices – Supply Only

Product Code **: RWH-1599FL-GUK1.**

1500 Litre Shallow Dig Garden System



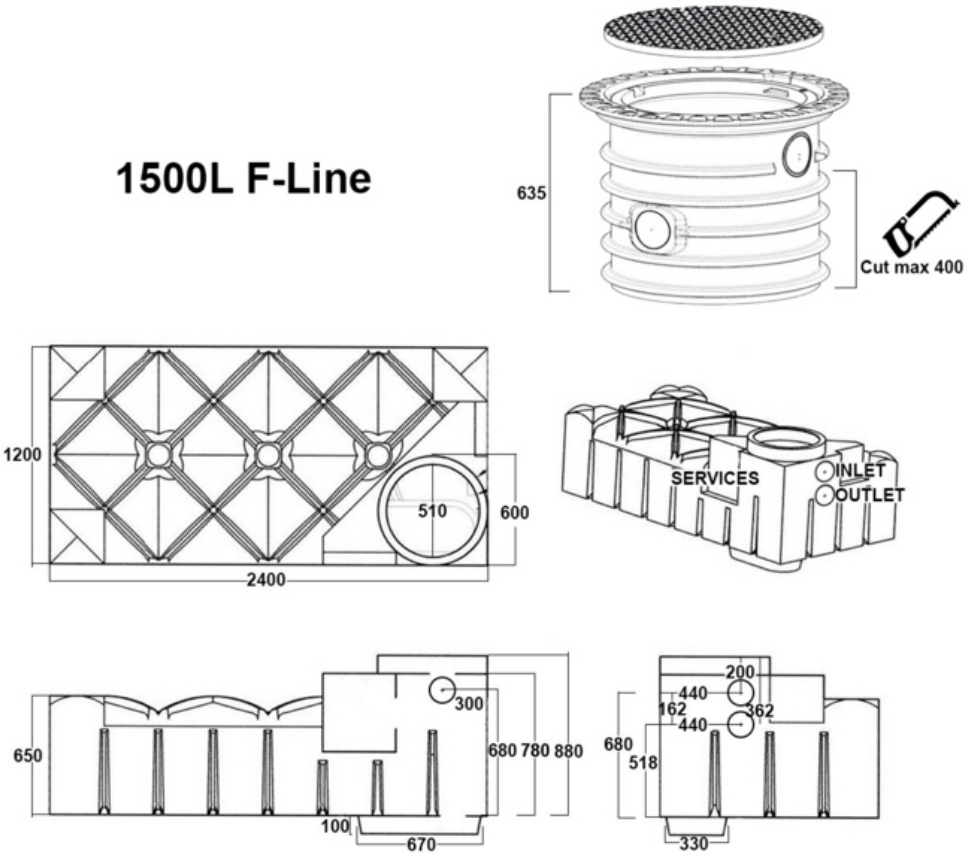
Components

Product Code	Description	Qty
RWFT1500	F-LINE 1500L TANK	4
RWH-RV01	RAINVANTAGE FILTER KIT INC SIPHON & OVERFLOW	4
RWDS0066	F-LINE TANK WALK ON LID	4
RWDS0062	F-LINE TANK 635mm EXTENSION SHAFT - VS60	4
RWH-HDPE25/25	25mm HDPE RAINWATER PIPE - 25m ROLL	4
RWH-PKFLINE-GDN	FLINE INSTALLATION PACK GARDEN / INC LABELS & 90° ELBOW	4

Price : £4,740.00 (£5,688.00 Inc. VAT)

UK delivery is included in the price (Highlands and islands extra)

1500L F-Line


635
Cut max 400
1200
510
600
2400
SERVICES
INLET
OUTLET
650
300
680 780 880
100
670
200
440
162
362
440
680
518
330

Recommended Rainwater Pipe

Rainwater Pipe in HDPE (High Density Polyethylene) for rainwater use as recommended by Water Authorities is available as an option for all tanks and systems. Black with 4 green stripes and available in both 25mm and 32mm diameter. High quality HDPE.

RainWater Harvesting Limited has worked with the UK Rainwater Harvesting Association and listened to WRAS and several of the water companies, to bring to the market the pipe marked with four green stripes. The identification helps maintenance staff and the end user, after installation, to know which pipes on site carry rainwater (which is non-potable in the UK Building Regs). We stock the following two sizes preferred by contractors fitting rainwater systems.

25mm diameter,
flexible, in 25 or 50m coils
Product ID: RWH-HDPE25/25

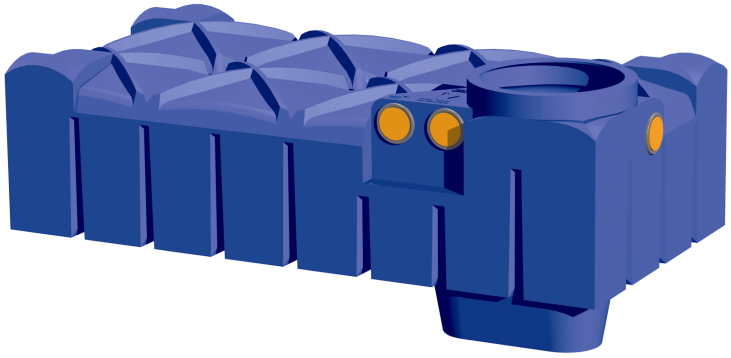
Ship weight of one 25m coil: 4.3 kg

32mm diameter,
flexible, in 25 or 50m coils
Product ID: RWH-HDPE32/25

Ship weight of one 25m coil: 5.5 kg

Other sizes available upon request

F-Line Flat Tank shallow dig underground tank



Why buy this tank?

- The F-Line is a high quality, rotationally moulded, one piece rainwater tank that can be installed without the need for concrete, thereby minimising installation costs and supported by our long term 25 year tank guarantee.
- Minimal installation depth
- Easy and quick to install
- Small excavation pit and little earth excavation preserves your garden
- Ideal for installation in new or existing properties
- Can be installed in ground water up to tank shoulder
- Easy to install

The F-line flat tank can be installed into much higher water tables than a standard round tank. If you don't know what your water table will be like in the winter, you're safer to install a flat tank. The F-Line tanks are flat and the installation depth is up to 60% less than other rainwater tanks. The excavation can be up to 70% less, meaning little earth excavation, easy handling and less cost for you! The small excavation pit is easily filled in and your garden will look just like it did before.