Rainwater Harvesting at Trenchmore Farm, Burnthouse Lane, Cowfold, Horsham – Water off set for Devine Homes PLC

Date- 03/03/2025

Background

The evidence within this document relates to the installation of a rainwater harvesting system at Trenchmore Farm, Cowfold. The offset relates to the construction of 22 new dwellings by Devine Homes at Sandygate lane, Lower Beeding (application – DC/22/0708) and S106.

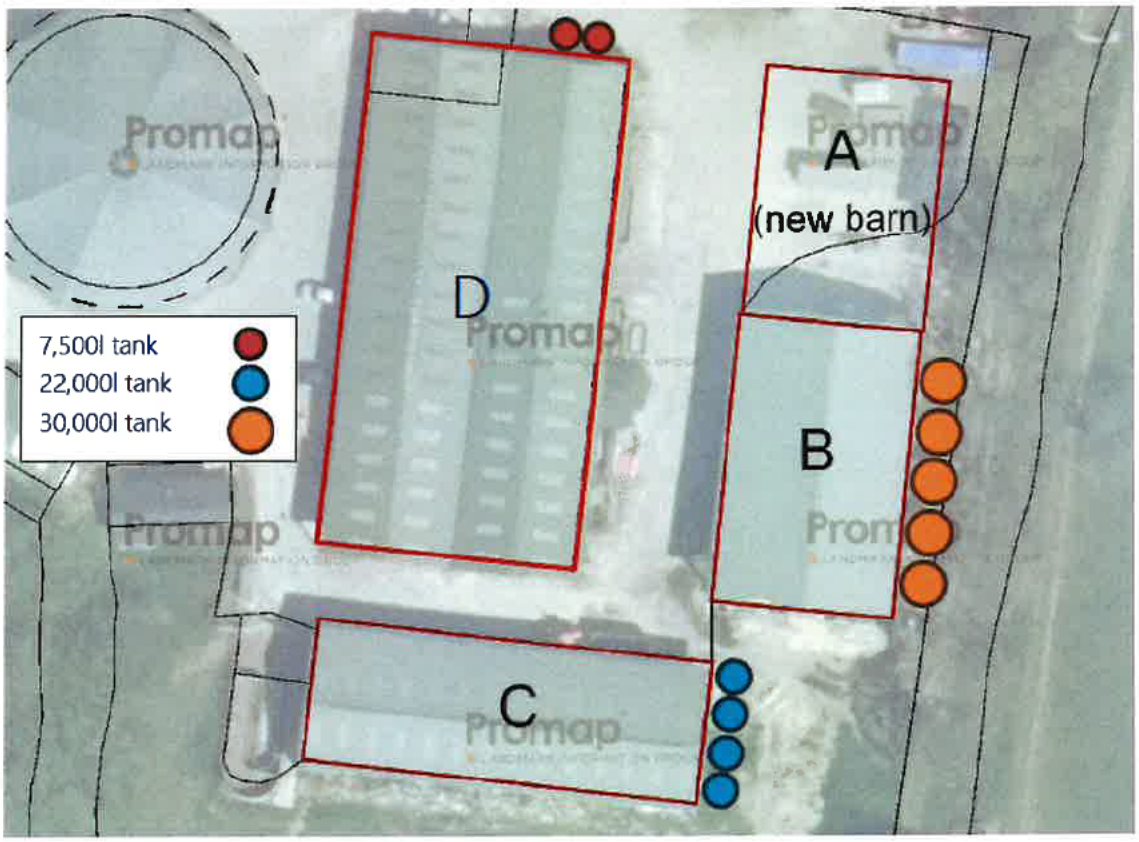
The dated s106 agreement- in respect of land on the south side of Sandygate Lane, Lower Beeding, Horsham and land on the east side of Burnthouse Lane, Cowfold was dated 24th August 2023. (legal Ref LM/2679)

The document is submitted in accordance with schedule 4 para 4

"Prior to the first Occupation of the Development, to submit evidence in writing to the Council that the Offsetting Measures in the approved Water Neutrality Strategy have been implemented in full at the Offsetting Land, the evidence to include the specifications and photographs of the installed rainwater harvesting equipment."

Trenchmore Farm

The rainwater scheme consists of 5 x 30,000l tanks located at barn "A /B". Additionally, this area includes the pump house. 4 x 22,000l tanks at barn "C" with the water from here pumped to the 1st 30,000l tank (nearest the pump house) finally 2 x 7,500l tanks alongside barn "D" which are stand-alone for use for jet washing water / wash down of equipment. The water from the pump house is pumped to the manifold located in barn "D" where from here the water is distributed to drinking troths throughout the farm. The scheme was completed and fully operational as of 25th February 2025.



Below Is a photographic timeline and account of the installation. Finally in the appendix is the specification evidence.

Index of Appendix

1- Groundworks invoice.
2- Tank and filter order.
3- Quote for installation of tanks, guttering and filters.
4- Pumping, treatment and connection invoice and specification

1- **Pre start photos** - 19th July 2024

Location of the 5 x 30,000l tanks and pump house barn "A/B".



Location of 4 x 22,000 tanks at barn "C"



2- Groundworks- 24th July 2024

Please note – no ground works were required at barn "D" as intending to use existing concrete slab and no pipe work is required as standalone tanks.

Installation of underground pipes and pipe ducting – Pipes to run to the water mainifold in Barn "D".



Pipe work for pump house



Pipe work to link Barn "C" to tanks at Barn "A/B"



Ground preparation (subbase) for concrete slabs.







Finished concrete slabs- August 21st 2024.

Barn "C"



Barn "A/B".



Existing Slab for tanks at barn "D".

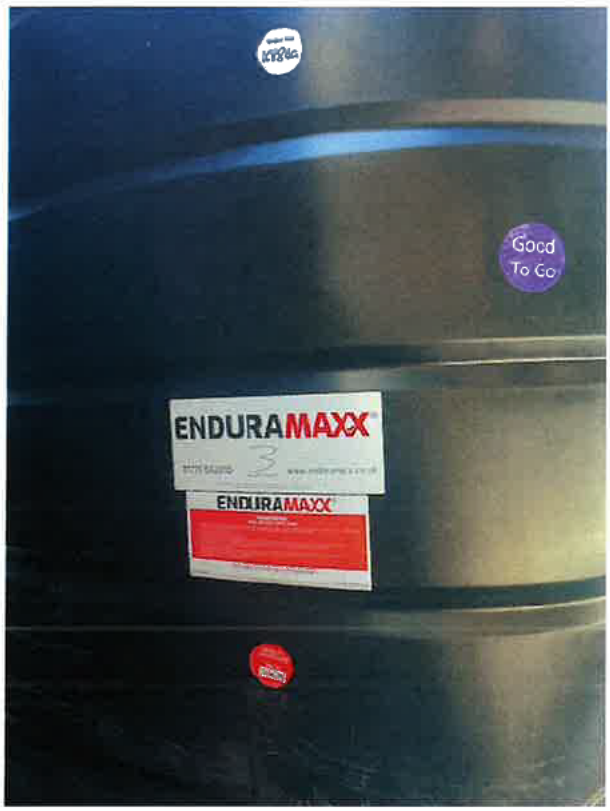


3. Delivery of tanks - 19th September 2024.








Good
To Go
ENDURAMAXX
ENDURAMAXX

4. Installation of tanks , filters and guttering – 24th September 2024







Filter installation



Pipe works run into the pump house



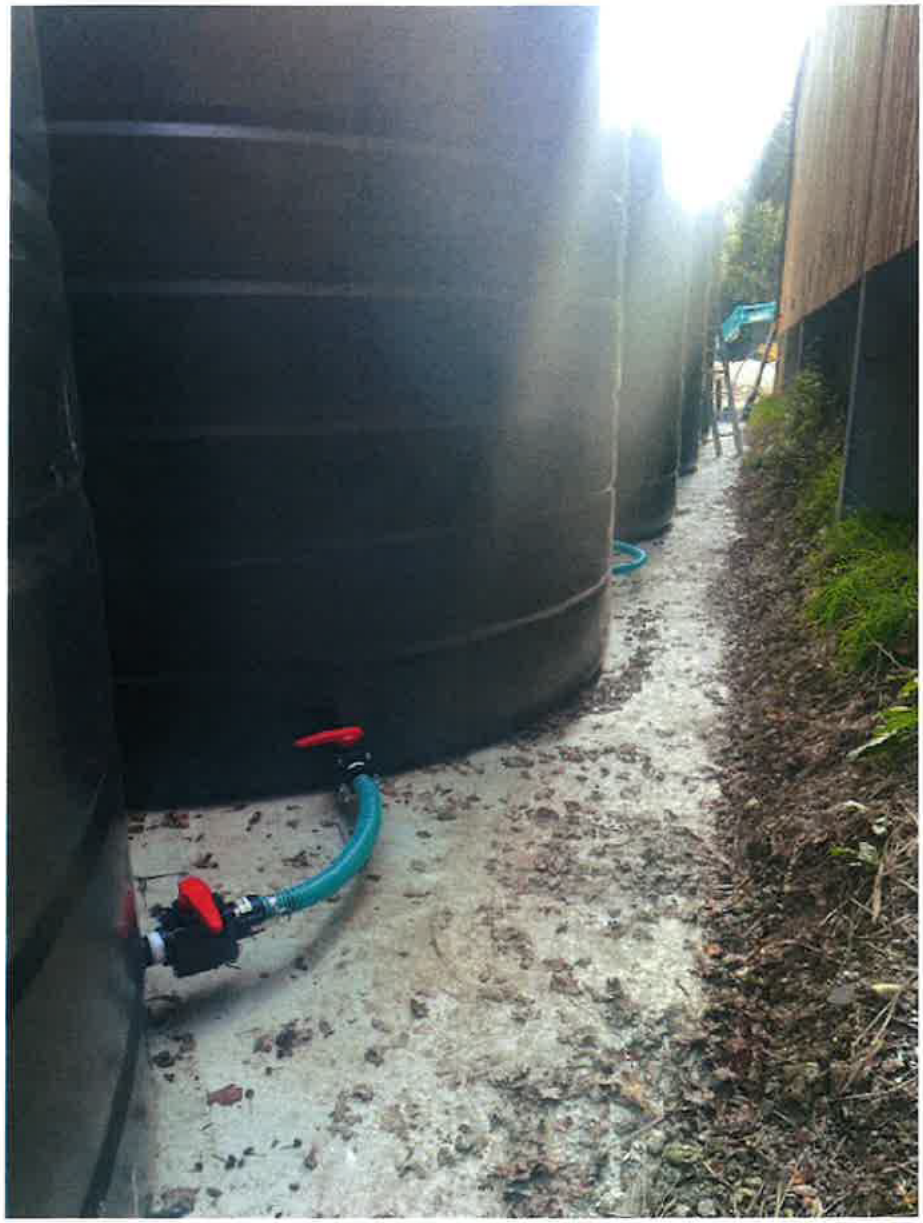
Pump house construction completed



All tanks installed and plumbed to rainwater pipes on barns completed - February 18th 2025

5 x 30,000l tanks and pumphouse at barn "A/B"





4 x 22,000 l tanks at barn "C"



2 x 7,500l tanks at barn "D"



5. Final stage – Pumping / treatment and connection 26th February 2025

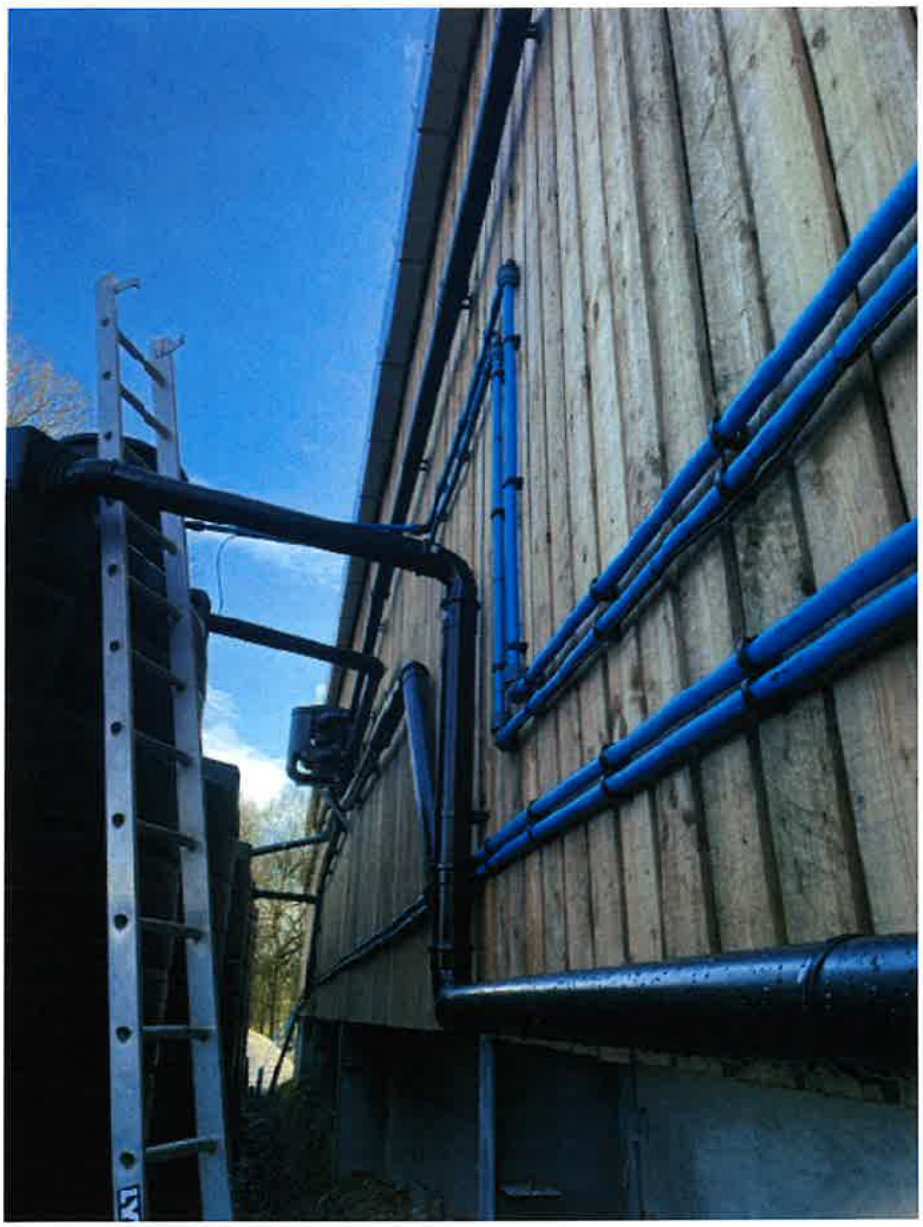
Pump house with pump, filter and UV treatment.



Water being pumped from barn "C" to last 30,000l tank by pump house.



Guttering, pipes and filter for tanks at barn "A/B" .



Manifold in Barn D.

Red arrows shows treated rain water entering from the top and then distributing around the farm.



Cat and mouse tank level indicator showing water level as of 26th February 2025.



Appendix 1 – Groundworks invoice

STONEHOUSE

GROUNDWORKS LTD

Lancasters Farm Littleworth Lane Partridge Green West Sussex RH13 8EJ
Tel 01403 864619
Jake@stonehousegroundworks.co.uk, Justin@stonehousegroundworks.co.uk

To :
Devine Homes
St Michaels House
111 Bell Street
Reigate
RH2 7LF

Date 13th August **2024**

Your Order Number : **Our Invoice Number : INV1672**

NARRATIVE:	PRICE (£)
Trenchmore Farm Cowfold	
Invoice for the following works To lay 24M x 4.5M concrete pad and associated ducting as per quotation To lay 16M x 4M concrete pad and associated ducting as per quotation Bank Details Clydesdale Bank Ltd Sort Code: 82 64 02 Account No: 50018151	[redacted] [redacted] [redacted]
Customer to account to HMRC for the reverse charge output tax on the VAT exclusive price of items marked 'reverse charge' at the 20% VAT .	Reverse charge VAT Applies [redacted]
Gross	[redacted]
VAT No: 849848163 UTR 1661224920	

Appendix 2– Tanks and filter order

JRH
water management

Home Close
East Firsby
Market Rasen
Lincolnshire
LN8 2DB

Date:23/08/2024

To:
Devine Homes
Trenchmore Farm
Burnthouse Lane,
Cowfield, Horsham
RH13 8DG

Salesperson	Job	Payment Terms	Due Date
MICHAEL JORDEN	Rainwater Harvesting Systems	50% deposit then 50% due on day of final delivery to site	

Qty	Description	Unit Price	Line Total
Overview	To supply only RWH system to site –		
RAINWATER HARVESTING SYSTEM – SHED C	SUPPLY ONLY • 4 x 22,000L tanks with 2" outlet and 2" fxf tap • 3 x 2" tank linking kits with camlock taps • 1 x 3" outlet and 3" camlock tap (customer to support the 3" tap on site) • 1 x Filter kit and wall mount • Tank over flow and calmed inlet • 1 x tank seal 110mm • 1 x Tank level gauge		
RAINWATER HARVESTING SYSTEM – NEW SHED inc extension – A & B	SUPPLY ONLY • 5 x 30,000L tanks with 2" outlet and 2" fxf tap • 4 x 2" tank linking kits with camlock taps • 1 x CAT 5 turret factory fitted • 1x Filter kit and wall mount • Tank over flow and calmed inlet • 2 x tank seal 110mm • 1 x Tank level gauge		
RAINWATER HARVESTING SYSTEM – Shed D	SUPPLY ONLY • 2 x 7500L tanks with 2" outlet and 2" fxf tap • 1 x 2" tank linking kits with camlock taps • 1 x Filter kit and wall mount • Tank over flow and calmed inlet • 1 x tank seal 110mm • 1 x Tank level gauge		
MAINS WATER BACK UP VALVE	SUPPLY ONLY • 1 x 1" mains water back up valve • This valve is to be fitted to the right hand 30,000L tank on SHED A & B – to be fitted by customer and piped to mains water supply.		
PLEASE NOTE			

	• Telehandler & driver needed for tank offload and siting – provided by customer • JRH are not liable for system design or setup, any damages or problems from 3rd party installers • Access to site for delivery`s at all times on site • Rubbish removal by customer		
		Subtotal	[redacted]
		VAT 20%	
		Total	

TERMS:
ALL PRICING IS VALID FOR 30 DAYS FROM DATE OF QUOTATION
JRH RESERVE THE RIGHT TO AMEND PRICES SHOULD SUBSEQUENT INFORMATION BE AT VARIANCE TO THE SPECIFICATION RECIEVED
PAYMENT TERMS AS PER ABOVE AND FINAL PAYMENT DUE WITHIN 48HRS OF JOB COMPLETION
JRH DO NOT GUARANTEE THE QUALITY OF THE EXISTING PIPE WORK AND CANNOT BE HELD RESPONSIBLE FOR ANY LEAKS CAUSED THROUGH DEFECTS IN THIS PIPE WORK
ALL MATERIALS REMAIN THE PROPERTY OF JRH WATER MANAGEMENT UNTIL FULL PAYMENT IS RECEIVED

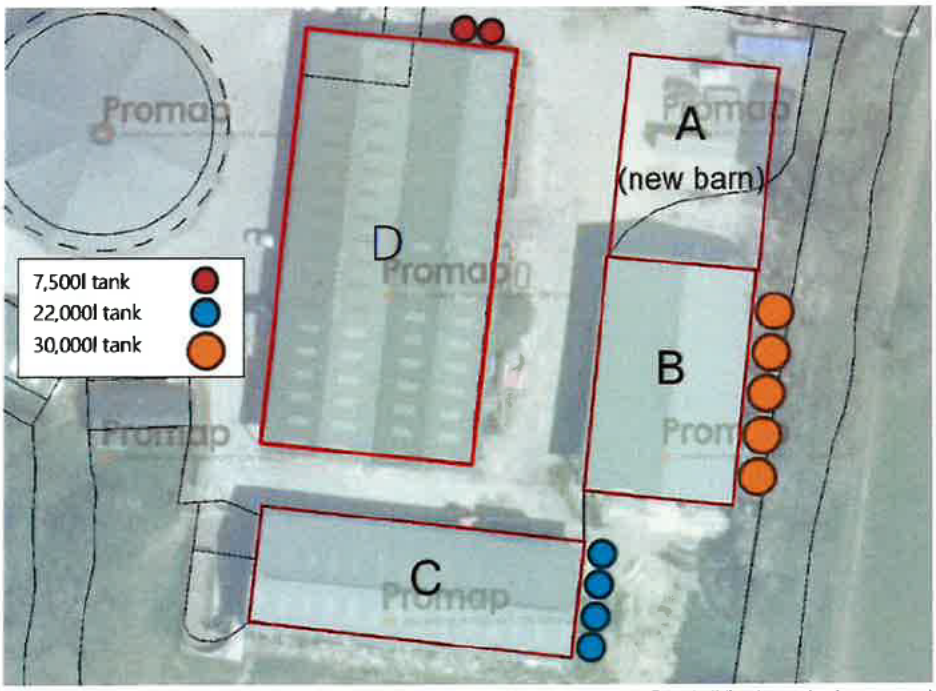
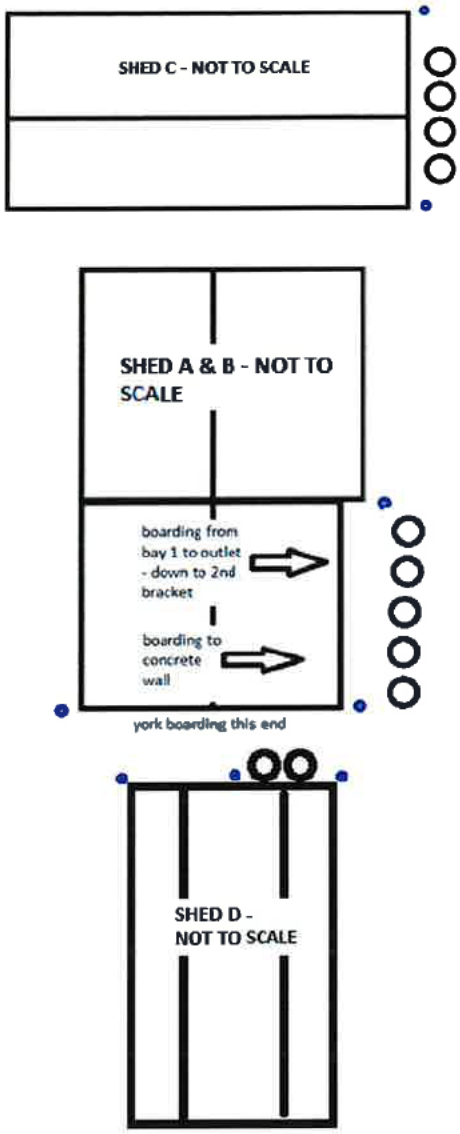


Figure 2: Trenchmore Farm building layout (tanks not to scale)


SHED C - NOT TO SCALE
SHED A & B - NOT TO SCALE
boarding from bay 1 to outlet - down to 2nd bracket
boarding to concrete wall
york boarding this end
SHED D - NOT TO SCALE

INVOICE

Devine Homes PLC, St Michael's House, 111 Bell Street, Reigate, RH2 7LF

Invoice Date
23 Aug 2024

Account Number

Invoice Number
INV-1798

Reference
Trenchmore Farm, RH13 8DG

VAT Number
197783537

JRH Water Management Limited
Home Close
East Firsby
MARKET RASEN
Lincolnshire
LN8 2DB
GBR

Description	Quantity	Unit Price	VAT	Amount GBP
50% deposit invoice for Trenchmore Farm - as per quotation dated 23/08/24	1.00	[redacted]	20%	[redacted]
TERMS - once payment is made items will be ordered for delivery. Final 50% payment due on the day of the final delivery to site				

Subtotal	[redacted]
Total VAT 20%	
Invoice Total GBP	
Total Net Payments GBP	
Amount Due GBP	

Due Date: 30 Aug 2024

BACS Details: **Account No: 53849268** **Sort Code: 30-67-76**

City & Guilds Qualified WRAS bpec

PAYMENT ADVICE

To: JRH Water Management Limited
Home Close
East Firsby
MARKET RASEN
Lincolnshire
LN8 2DB
GBR

Customer	Devine Homes PLC, St Michael's House, 111 Bell Street, Reigate, RH2 7LF
Invoice Number	INV-1798
Amount Due	[redacted]
Due Date	30 Aug 2024
Amount Enclosed	

Enter the amount you are paying above

INVOICE

Devine Homes PLC, St Michael's House, 111 Bell Street, Reigate, RH2 7LF

Invoice Date
17 Sep 2024

Account Number

Invoice Number
INV-1807

Reference
Trenchmore Farm - RH13 8DG

VAT Number
197783537

JRH Water Management Limited
Home Close
East Firsby
MARKET RASEN
Lincolnshire
LN8 2DB
GBR

Description	Quantity	Unit Price	VAT	Amount GBP
Supply only of RWH tanks, filters etc as per quotation dated 08/08/2024	1.00	[redacted]	20%	[redacted]
			Subtotal	
			Total VAT 20%	
			Invoice Total GBP	
			Total Net Payments GBP	
			Amount Due GBP	

Due Date: 23 Sep 2024

BACS Details: **Account No: 53849268** **Sort Code: 30-67-76**

City & Guilds Qualified WRAS bpec

PAYMENT ADVICE

To: JRH Water Management Limited
Home Close
East Firsby
MARKET RASEN
Lincolnshire
LN8 2DB
GBR

Customer	Devine Homes PLC, St Michael's House, 111 Bell Street, Reigate, RH2 7LF
Invoice Number	INV-1807
Amount Due	[redacted]
Due Date	23 Sep 2024
Amount Enclosed	

Enter the amount you are paying above

Appendix 3 – Quote for installation of tanks, guttering and filters.

OAKLAND CONSTRUCTION & LANDSCAPING

QUOTE

Trenchmore farm LLP

Date
17 Jul 2024

Expiry
31 Jul 2024

Quote Number
QU-0039

Reference
labour only quote

VAT Number
335638879

Oakland Construction and
Landscaping Ltd
60 St Michael's Way
Partridge Green
West Sussex
RH13 8LB
UNITED KINGDOM
07864626949

Description	Quantity	Unit Price	VAT	Amount GBP
labour only quote to install water harvesting system. No materials will be supplied. This quote includes cherry picker hire, tools, and labour. I'm allowing for three bloke's and two weeks to do the total install.	0.00	0.00		0.00
labour	1.00	[redacted]	20%	[redacted]
cherry picker If we can do the install of the water harvesting system at the same time we erect the new infill building we can use the same picker and save this hire off the final bill.	1.00	[redacted]	20%	[redacted]
Electrician for 1 days labour to install power. All materials to be provided by yourself. A test certificate for electrical install can be provided at an extra cost of £150+VAT	1.00	[redacted]	20%	[redacted]
Some questions for the supplier. I've installed many of these systems before. But would like from them a basic plan (diagram) of the install of the system, In regards to where filters and over flows need to be fitted and pipe sizes for each run. I say this just because they will allow a certain amount of pipe and fittings and wouldn't want to use more than we have to and where in the pump house they want the pipes to be left and what power and isolators do they require.				

Subtotal	[redacted]
TOTAL VAT 20%	
TOTAL GBP	

Appendix 4– Pumping, treatment and connection invoice and specification.

Invicta Water Treatment
89 Castle Drive
Horley
Surrey RH6 9DD
T. 01293 781077
Mobile. 07970 154529
Email. sales@invictawatertreatment.co.uk www.invictawatertreatment.co.uk

Luke Eldridge
Devine Homes
By email:
05/08/24

Dear Mr Eldridge,

Re: Rain Water Treatment System; Outside Transfer Station; Manifold Upgrade at Trenchmore Farm

Further to my site visit:

Information Supplied & Site Observations to Date

- Manifold upgraded to physically separate mains and treated rainwater as required by Water Regs
- Building B – 5 x 30 m3 tanks
- Building C – 4 x 20 m3 tanks
- Building D – 2 x 7.5 m3 tanks
- Rainwater (RW) treatment plant room to treat B tanks to supply existing manifold. Mains water top up to B tank No 2 via CAT5 tank turret. B tank No 2 also to be filled with RW from C tanks via transfer pump. High level inlet exposed to elements so lag and trace heat. RW to be recirculated during daylight hours from tanks B to tanks C in a loop. Max recycle rate is some 50 lpm. Outside ½" tap to be fitted for local use
- B tanks may be daisy chained. Manifold option will allow greater flexibility of operation as each individual tank can be isolated, drained and cleaned. B tanks 1&2 will operate at all times, while tanks 3,4,5 will only be full during parts of the year.
- C tanks transfer pump
- D tanks are independent and will be pumped/piped by others
- All pumps will be the same with dry boxed standby
- We assume all rainwater will be coarse filtered before the collection tanks minimising detritus
- External 32 mm pipework to be MDPE or ABS, whereas plant room will be PVC (as frost protected)
- Tank manifolds and fittings by others
- Trace heating for 2 x 32 mm fill lines to tank B No 2 with the CAT5 turret only
- Common type pumps with dry boxed spare

Client – Works Required

- Plant room for RW treatment system with 3 x 230V socket (pump + UV + recycle/fill panel). To be weatherproof, spare twin socket 230V, light, frost stat heating (simple plug in fan type will do)
- 230V socket for transfer pump at tanks C

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- Tank B connecting manifold to plant room
- Plant room to Tank C recycle line
- Tank C to Tank B No.2 top up line
- Mains water top up to Tank B No.2
- CAT5 turret on tank B No.2
- Associated lagging and trace heating of external pipework

Design Information
Drinking Water Demand Calculations
From end-user:

- Treated rainwater for cows c. 5,000 lpd
- Max treated flow approximately 50 lpm (assumed), but allow for 15 lpm average
- Mains water top-up, 25 mm, so approximately 15 lpm

Pressure Loss Calculations
Minimal pressure loss for 32 mm pipework at 15 lpm.

Waste Water
None as no backwashable filters.

Treated Water Quality
Simple filtration and UV deemed satisfactory by end-user for cows' drinking water. No treated rainwater is for human consumption.

Commissioning Chlorination
I will conduct a one off, high strength chlorination of the new system from the new filters through to the existing 32 mm lines to the manifold and to local direct fed taps. I have not included disinfecting the tanks.

IWT Installation Works

- Within confines of the pant room: connect 2" inlet from tanks B to new pump, filter and UV. Fit interconnecting 32 mm PVC pipework. Connect to 32 mm return to tanks C recycle line. Connect to treated RW to manifold. Fit control panel for recycle and tank filling to wall. At Tank B CAT5 turret: fit 1" solenoid fill/recycle valve and wire back to plant room. Fit level switch to control Tank B fill and recycle operation; wire back to pant room.
- At tank C: fit new pump with valves using 32 mm MDPE
- At manifold: remove manifold and repipe for removable spool pieces. Connect treated RW 32 mm MDPE and mains top up feed 32 mm MDPE
- Design and build level control/recycle panel and test. Requires 230V socket in plant room

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[redacted]
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Process Design
Coarse filtered rainwater will fill tanks B and C along with necessary pipework between tanks and new plant room, designed and installed by others.

When there is demand for treated rainwater, it will be pumped through a 5 um filter and UV disinfection chamber into supply. A timer-controlled recycle loop from tanks B to tanks C will operate for a few hours per day. The programme can be set from the new control panel.

When tanks B empty to a certain level (to be advised by the rainwater system designer), the fill valve will open allowing pressurised water from tank C transfer pump to fill the No.2 tank until such time it is full. This No.2 tank will be fitted with an mains auto-top up valve.

During recycle, a solenoid valve in a return line from the plant room will take filtered/UV water back to tanks C, from where it will be repumped into tanks B No.2 tank; the fill valve will also be open, as controlled by the panel. This will continue for a few hours everyday. The recycle flow rate will be limited (by reducing flow through the recycle valve) so that there is priority of treated rainwater for service. The recycle time and duration can be programmed at the panel.

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IWT Scope of Supply

Item	Description	No.
	Plant Room	
1	Raw water booster pump. 230V, 5 A maximum (+ spare boxed spare)	2
2	5 um cartridge filter with spare elements	1
3	Stainless steel UV Unit with UV sensor, rated at 79 lpm. Spare lamp and quartz sleeve. 230V, 3A	1
4	Bespoke control panel with LEDs for Tank B level (full/filling); Tank B filling override; mains fill override; Recycle programmable timer controller; Recycle override. 230V, 2A	1
5	1" solenoid valves (Tank B fill & Recycle to Tank C)	2
6	32 mm PVC pipework, valves and fittings; R/L clips, sample valves, O/S tap for ½" hose; interconnecting wiring	1 set
7	Outside plant room – DN25 differential fill valve for Tank B No.2 to be fitted to CAT5 turret at highest point	1
8	Level switch	1
9	Installation and commissioning labour	1
	Tank C Transfer Pump	
10	Raw water booster pump. 230V, 5 A maximum	1
11	32 mm MDPE, valves, fittings	1 set
12	Installation and commissioning labour	1
	Manifold Cider Shed	
13	32 mm PVC pipework, valves and fittings; MDPE pipework as necessary; 2 pool pieces fabricated from 32 mm PVC	1 set
14	Installation and commissioning labour	1
15	[redacted] exVAT based on survey to date	

Terms –Payment 80% with order then 20% on completion of installation, payable before final documentation is released. IWT T&C's apply. We do require an order signed by an owner/director on headed paper to proceed or an email from said owner/director. Delays and standing time will be chargeable. All goods and certs remain the property of IWT until payment is received in full. No retentions, discounts or unreasonable indemnifications applicable to the contract. All services and materials not specifically mentioned in the Scope of Supply are excluded. The price does not include for pre contract meetings, sampling or ongoing sampling, or any other samples other than those quoted. All licences and permissions by others. All civils and making good by others including plinths, bases, buildings, woodwork, decorations. All utilities by others. We reserve the right to redesign and reprice the works at any time based on site conditions or any other information discovered which impacts the Scope above. Prices valid for 30 days from quotation date. Liaison with agents, DWI, councils and similar bodies to be charged at consultancy fee rates. Rain water tanks, connecting pipework, guttering, manholes and leaf filters by others. Distribution pipework, borehole connection, drains, utilities and other systems beyond the plant room by others. Electrician to fit power sockets, lights, heating as necessary and check all installation work. Offloading and positioning by others. Delivery to gate only. Risk in the goods passes to the client upon delivery to site. All external pipework including tank B &c low level manifold and valves, tank recycle and mains filling pipework. All lagging and trace heating of external pipework.

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Summary
This document covers the information to date and the project will progress and may require redesigning from any subsequent discussions. The information is for guidance only. Please check the Scope of Supply to see of any shortages, especially for the connecting pipework and tank joining manifolds, along with insulation and trace heating. We can quote for these other items extra to the above Scope. Just let me know.

Please feel free to call or [redacted] if you need any parts of the quotation clarifying.

Regards

Stefan Massingham BSc (Hons Chem.) MSc (Cran) MWMSoc
Director - Invicta Water Treatment Limited
Qualified UKAS Private Water Supply Sampler

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Liability: This document contains information and may contain conclusions and recommendations. Every effort has been made to ensure that the information is accurate and that the opinions expressed are sound. However, Invicta Water Treatment Limited cannot be made liable for any errors or omissions or for any losses or consequential losses resulting from decisions based on the information.

Invicta Water Treatment Limited
89 Castle Drive
Horley
Surrey
RH6 9DD

INVICTA WATER TREATMENT

Invoice	**Page** 1

VAT Reg No: 920230282

IWT BANK: LLOYDS TSB SORT: 30-91-60 ACCT: 03770170
All goods remain the property of IWT until payment is received in full. IWT T&Cs apply.

Devine Homes PLC
St Michael's House
111 Bell Street
Reigate
Surrey
RH2 7LF

Document	2931
Tax Date	27/02/2025
Order Number	ELDRIDGE
Account Number	DEVINEHO

Quantity	Details	Unit Price	Net Amount	VAT Rate	VAT
1.00	50% balance for Trenchmore Farm RwH System	[redacted]	[redacted]	20.00	[redacted]
0.00	Payment by return please Works are complete	0.00	0.00		0.00

Delivery to:
Trenchmore Farm
Burnt House Lane
Cowfold

Total Net Amount, £	[redacted]
Carriage Net, £	
Total VAT Amount, £	
Invoice Total, £	

Invicta Water Treatment Limited
89 Castle Drive
Horley
Surrey
RH6 9DD

INVICTA WATER TREATMENT

Invoice	**Page** 1

VAT Reg No: 920230282

IWT BANK: LLOYDS TSB SORT: 30-91-60 ACCT: 03770170
All goods remain the property of IWT until payment is received in full. IWT T&Cs apply.

Devine Homes PLC
St Michael's House
111 Bell Street
Reigate
Surrey
RH2 7LF

Document	2888
Tax Date	30/09/2024
Order Number	ELDRIDGE
Account Number	DEVINEHO

Quantity	Details	Unit Price	Net Amount	VAT Rate	VAT
1.00	50% of contract value as agreed with Luke Eldridge, to be paid with your order for Trenchmore Farm (ref our quote 05/08/24)	[redacted]	[redacted]	20.00	[redacted]
0.00	Payment by return please	0.00	0.00		0.00

Delivery to:
Trenchmore Farm

Total Net Amount, £	[redacted]
Carriage Net, £	
Total VAT Amount, £	
Invoice Total, £	