

CAS02 Rossett Road, Rossett
Castle Green Homes Ltd
Revision: G
01 November 2023

SuDS Maintenance and Management

Site: Rossett Road, Rossett
Application Ref.: H6955/A/19/3231048

Management: Private / ~~Adoptable~~
Management Company: To Be Confirmed



For

Castle Green
Unit 20
St Asaph Business Park
St Asaph
Denbighshire
LL17 0LJ

Castle |||| Green



The Institution of
Structural Engineers



Old Marsh Farm Barns
Welsh Road, Sealand
Flintshire CH5 2LY
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PERMEABLE PAVING

Permeable surfaces as permeable block paving, porous Asphalt, gravel or free draining soils that allow rain to percolate through the surface into underlying drainage layers. They must be protected from silt, sand, compost, mulch, etc. Permeable block paving and porous asphalt can be cleaned by suction brushing.

Type and Location

The type of permeable paving proposed is a 'Block paving' product finish for the Roads and Drive/Parking areas.

The areas where permeable surfacing are proposed are indicated on the Proposed Surfacing Materials plans drawing ref. HYD554 - 0102 - E - Castle Green - Southern Land Parcel - Surfacing Areas & HYD554 - 0105 - E - Castle Green - Northern Land Parcel - Surfacing Areas, these areas are wholly within private ownership and do not form part of any highway adoption.

Construction

The exact construction build-up should be confirmed at detailed design.

The block paving finish proposed (80mm) is on 50mm thick Laying Course & 125mm Base Course with a geotextile wrapped sub-base (sub-base thickness varies depending on soakaway infiltration rate). Final construction thicknesses to be determined at detailed design stage of external works and levels design.

The drive/parking construction build-up specification is to be as above excluding the base course.

Typical construction details are shown on the Highway Construction Details - Permeable Surfacing sheet drawing ref. CAS02 - 222 - C - Highway Construction Details - Permeable Surfacing.

In the event of infiltration failure to the southern site and exceedance water flowing overland for a small portion of carriageway (due to design levels) there could be a residual risk to Rossett Road. Therefore, two gullies are provided at the bell mouth to intercept overland flows. These gullies will connect to a separate highways soakaway device located in public open space.

Repair

If there was a need to repair or replace the road structure, this can be accomplished whilst maintaining emergency access and egress. As the overall depth of construction is <1.2m excavation & replacement of the road make-up (surface course, laying course, sub-base etc.) can be achieved through single lane closures and appropriate traffic management (temporary traffic lights, Stop/Go signage etc.) The northern site utilises a conveyance trench which has been located to one side of the carriageway. This allows for half a lane closure to repair if required. The southern site utilises full width infiltration. Should a full width excavation be required then vehicles can traffic across the footpath which has had the construction specification upgraded to allow for vehicle over-run. This allows for half the carriageway to be excavated whilst allowing vehicles to pass. Upon repair the carriageway will be re-instated and the opposite half excavated to allow for repair.



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Maintenance Schedule

Table 1 Maintenance regime for permeable paving

TABLE 1	Operation and maintenance requirements for pervious pavements		
	Maintenance schedule	Required action	Typical frequency
	Regular maintenance	Brushing and vacuuming (standard cosmetic sweep over whole surface)	Once a year, after autumn leaf fall, or reduced frequency as required, based on site-specific observations of clogging or manufacturer's recommendations - pay particular attention to areas where water runs onto pervious surface from adjacent impermeable areas as this area is most likely to collect the most sediment
	Occasional maintenance	Stabilise and mow contributing and adjacent areas	As required
		Removal of weeds or management using glyphosate applied directly into the weeds by an applicator rather than spraying	As required - once per year on less frequently used pavements
	Remedial Actions	Remediate any landscaping which, through vegetation maintenance or soil slip, has been raised to within 50 mm of the level of the paving	As required
		Remedial work to any depressions, rutting and cracked or broken blocks considered detrimental to the structural performance or a hazard to users, and replace lost jointing material	As required
		Rehabilitation of surface and upper substructure by remedial sweeping	Every 10 to 15 years or as required (if infiltration performance is reduced due to significant clogging)
		Repair and replacement of Type 3 sub-base material. Single Lane closures with appropriate traffic management to maintain access & egress.	As required
	Monitoring	Initial inspection	Monthly for three months after installation
		Inspect for evidence of poor operation and/or weed growth - if required, take remedial action	Three-monthly, 48 h after large storms in first six months
		Inspect silt accumulation rates and establish appropriate brushing frequencies	Annually
		Monitor inspection chambers	Annually

(Source CIRIA, 2021)



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Detention Basin

Regular inspection and maintenance is required to ensure the effective long-term operation of the basin. Maintenance responsibility for systems should be placed with a responsible organisation. Guidance on the operation and maintenance requirements that may be appropriate are outlined below; the list is not exhaustive and some actions may not always be required.

Type and Location

The vegetated basin is designed to manage storms up to the 100 year return period event with an allowance for climate change. There is one basin proposed and is located within the northern land parcel as indicated on the Northern Area Drainage Plan drawing ref. CAS02 - 101 - Main Drainage - Northern Land Parcel. The basin is to be within private ownership and does not form part of any adoption.

Construction

Where possible, construction of the basin should take place after the site has been stabilised, in order to minimize the risk of premature system failure due to high sediment loadings in run off from disturbed ground. The basin may be used to manage construction run off and trap construction sediments provided that the basin is fully rehabilitated to original design formation levels prior to handover. The basin is to be constructed with an impermeable pond liner given the proximity of the groundwater levels. The base and sides of the basin are to be vegetated with reed beds at the two inlets.

The proposed basin is sized appropriately to cater for the extreme storm events; approximately 254m³ for the 100yr+40% Climate Change return period. The exact pond shape and size are subject to engineering review at detailed design.

Maintenance Schedule

Table 22.1 Operation and Maintenance regime for Detention Basin (013&014)

Attenuation Basin	
<i>Regular Maintenance</i>	<i>Frequency</i>
Remove litter and debris	Monthly
Cut grass – for spillways and access routes	Monthly (during growing season), or as necessary
Cut grass – meadow grass in and around basin	Half yearly (spring – before nesting season, and autumn)
Manage other vegetation and remove nuisance plants	Monthly (at start, then as required)
Inspect inlets, outlets and overflows for blockages, and clear if required	Monthly
Inspect banksides, structures, pipework etc for evidence of physical damage	Monthly



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Inspect inlets and facility surface for silt accumulation. Establish appropriate silt removal frequencies	Monthly (for first year), then annually or as required
Check any penstocks or other mechanical devices	Annually
Tidy all dead growth before start of growing season	Annually
Remove sediment from inlets, outlets and forebays.	Annually (or as required)
Manage wetland plants in outlet pool – where provided	Annually (as set out in Chapter 23)
<i>Occasional Maintenance</i>	
Reseed areas of poor vegetation growth	As required
Prune and trim any trees and remove cuttings	Every 2 years, or as required
Remove sediment from inlets, outlets, forebays and main basin when required	Every 5 years, or as required (likely to be minimal requirements where effective upstream source control is provided)
<i>Remedial actions</i>	
Repair erosion or other damage by reseedling or re-turfing	As required
Realignment of rip-rap	As required
Repair/rehabilitation of inlets, outlets and overflows	As required
Relevel uneven surfaces and reinstate design levels	As required

(Source CIRIA, 2021)



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SURFACE WATER HEADWALLS

There are two inlet pipes and headwalls from the proposed drainage system into the detention basin and one outlet pipe and headwall conveying restricted flow into the drainage network.

Maintenance Schedule

Inlets, outlets, controls and inspection chambers	
Regular maintenance	Frequency
Inlets, outlets and surface control structures Inspect surface structures, removing obstructions and silt as necessary. Check there is no physical damage. Strim vegetation 1 m min. surround to structures and keep hard aprons free from silt and debris	Monthly Monthly
Inspection chambers and below-ground control chambers Remove cover and inspect, ensuring that water is flowing freely and that the exit route for water is unobstructed. Remove debris and silt. Undertake inspection after leaf fall in autumn	Annually
Occasional maintenance	
Check topsoil levels are 20 mm above edges of baskets and chambers to avoid mower damage	As necessary
Remedial work	Frequency
Unpack stone in basket features and unblock or repair and repack stone as design detail as necessary	As required
Repair physical damage if necessary	As required

Table 3 Maintenance regime for headwalls
 (Source CIRIA, 2021)



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BELOW GROUND CONVEYANCE PIPE NETWORK

There are below ground surface water pipes for conveyance, sized to convey flows up to the 100-year return period storm event with an allowance for climate change; pipe sizes range from 150-450mm diameter.

Maintenance Schedule

Table 4 Maintenance regime for below ground pipes and manholes

Pipes, Manholes and Inspection Chambers (below-ground)	
<i>Regular maintenance</i>	<i>Frequency</i>
Manholes and Inspection Chambers Remove cover and inspect, ensuring that water is flowing freely and that the exit route for water is unobstructed. Remove debris and silt. Undertake inspection after leaf fall in autumn.	Annually
<i>Remedial work</i>	<i>Frequency</i>
Repair physical damage if necessary	As required
<i>Regular maintenance</i>	<i>Frequency</i>
Pipes Following inspection in manholes, if flow is impeded then arrange for CCTV inspection, if significant debris is observable within manholes or inspection chambers then jetting may be required prior to CCTV survey.	Annually
<i>Remedial work</i>	<i>Frequency</i>
Undertake jetting of the system if necessary, undertake root-cutting if necessary, repair physical damage if necessary.	As required



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GULLY POTS

Gully pots contain silt traps which require emptying periodically to maintain effective silt removal and to further minimise the risk of silt deposits within the system. The maintenance regimes for these assets are detailed in the table below.

Maintenance Schedule

Table 5 Maintenance regime for Gully pots

Gully pots	
<i>Regular maintenance</i>	<i>Frequency</i>
Empty the gully pots bi-annually, ideally in spring and late autumn to remove the leaf litter and debris. Note areas where debris is significant or lesser and the schedule can be adjusted accordingly. Inspect for physical damage.	Spring and autumn
<i>Remedial work</i>	<i>Frequency</i>
Repair physical damage if necessary	As required



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SILT TRAP MANHOLES

450mm deep silt traps to be provided upstream of the inlet to the permeable paving sub-base to minimise the risk of silt deposits within the system
 The maintenance regimes for these assets are detailed in the table below.

Maintenance Schedule

Table 6 Maintenance regime for Silt Trap chambers

Manholes and Inspection Chambers (below-ground)	
<i>Regular maintenance</i>	<i>Frequency</i>
Remove cover and inspect, ensuring that water is flowing freely and that the exit route for water is unobstructed. Remove debris and silt. Undertake inspection after leaf fall in autumn.	Annually
<i>Remedial work</i>	<i>Frequency</i>
Repair physical damage if necessary	As required



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Attenuation Storage Tanks

Regular inspection and maintenance is required to ensure the effective long-term operation of below-ground storage systems. Maintenance responsibility for systems should be placed with a responsible organisation. Guidance on the operation and maintenance requirements that may be appropriate are outlined below; the list is not exhaustive and some actions may not always be required.

Type and Location

The type of attenuation storage proposed to cater for the extreme storm event volumes up to the 100 year return period event with an allowance for climate change are geocellular units. There is one tank proposed, located as indicated on the Drainage Layout drawing ref. CAS02 101 Rev K Drainage Layout – Northern Land Parcel.

Construction

The unit cell proposed is Wavin AquaCell Plus; size is 1.0m x 0.5m x 0.4m, alternative cells can be utilised subject to engineering review both structurally and hydraulically.

Cellular attenuation storage tanks

CELLULAR STORAGE TANKS	
<i>Regular Maintenance</i>	<i>Frequency</i>
Inspect and identify any areas that are not operating correctly. If required, take remedial action.	Monthly for 3 months then annually
Remove debris from the catchment surface (where it may cause risks to performance).	Monthly
Remove sediment from pre-treatment structures and internal forebays.	Annually, or as required
<i>Remedial actions</i>	<i>Frequency</i>
Repair/rehabilitate inlets, outlets, overflows and vents.	As required
<i>Monitoring</i>	<i>Frequency</i>
Inspect/Check all inlets, outlets, vents and overflows to ensure that they are in good condition and operating as designed.	Annually
Survey inside of tank for sediment build-up and remove if necessary	Every 5 years or as required



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Surface Water Pumping Station

Regular inspection and maintenance is required to ensure the effective long-term operation of pump systems. Maintenance/Monitoring responsibility for systems should be placed with a responsible organisation. Guidance on the operation and maintenance requirements are outlined in the following documents (*Caring for your Pump Equipment & Proactive Care with Seer Monitoring*). These documents have been provided by a pump specialist.



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Caring for your Pump Equipment

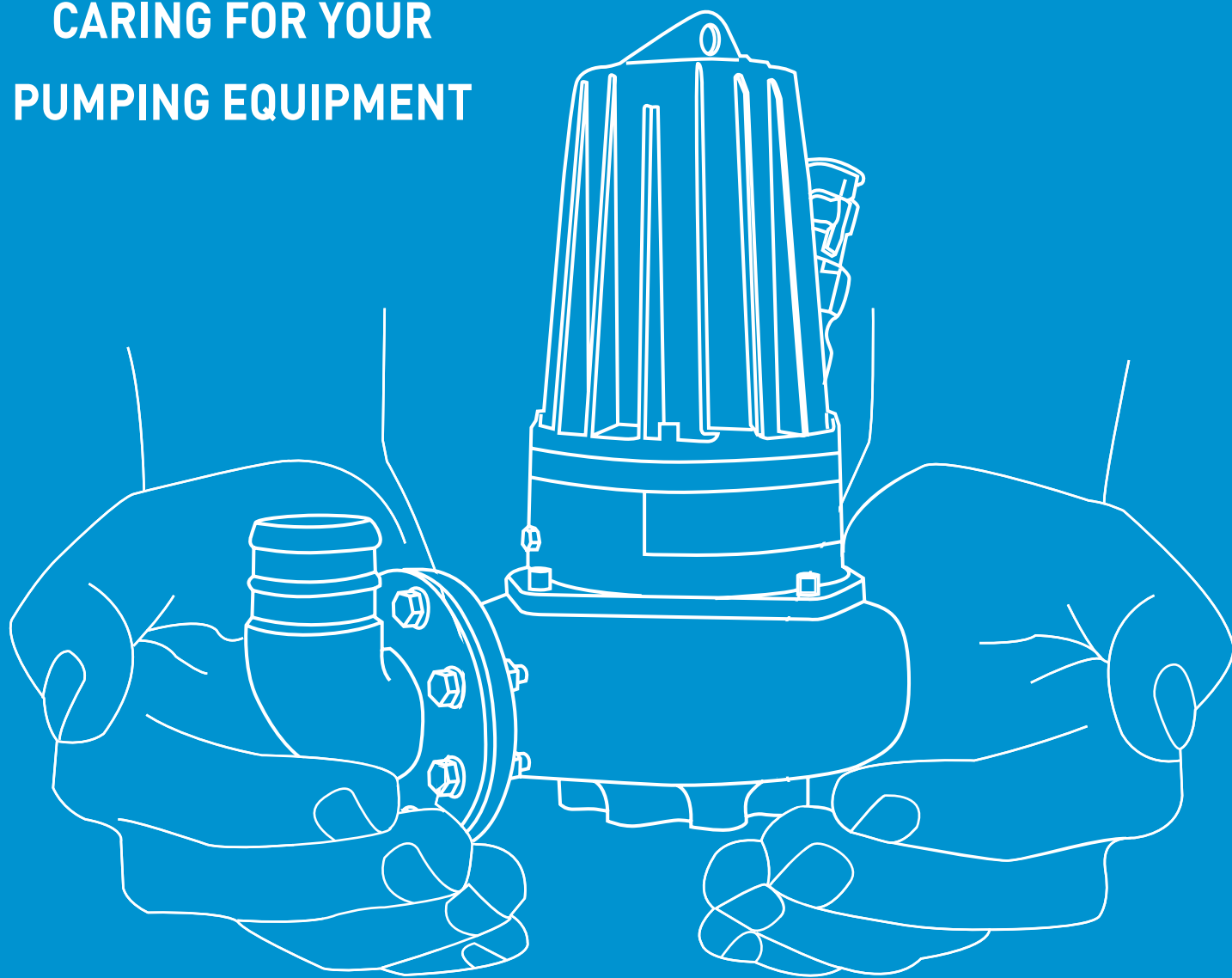


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CARING FOR YOUR PUMPING EQUIPMENT



T-T SERVICE

Service Agreements

As an owner or operator of a sewage or drainage pumping station, you will want peace of mind that your pumping station operates efficiently, whilst also being environmentally friendly. Our service agreements help to meet these aims and avoid unexpected and costly breakdowns.

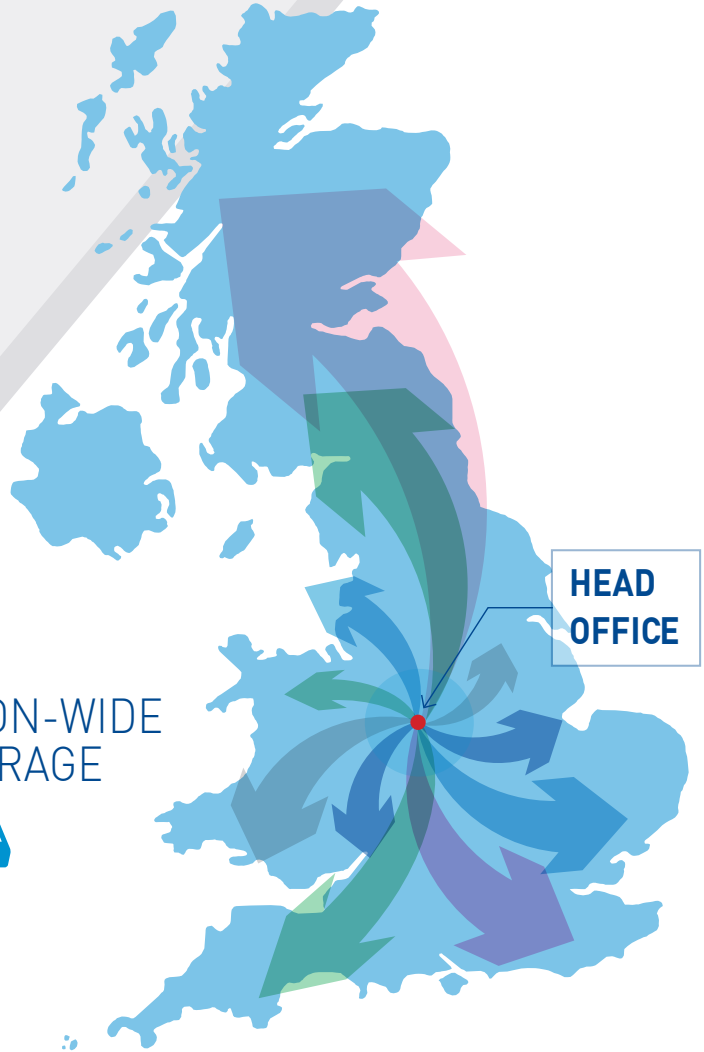
With our skilled in-house group of experts and on-site engineers, we are able to offer a comprehensive after sales service to a large number of customers. Provided by the experienced maintenance team at T-T.

Duty of Care

Avoid detrimental flooding by ensuring your pumping station is regularly serviced. The owners and operators of pumping stations have a duty of care to ensure minimal environmental damage.

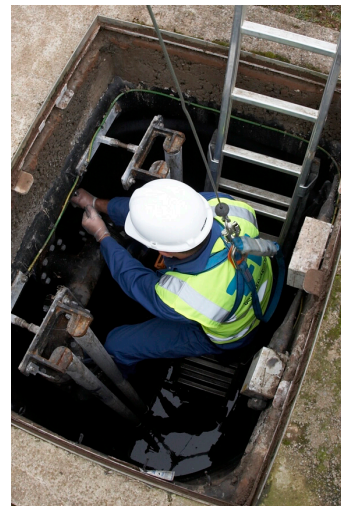


NATION-WIDE
COVERAGE



SERVICE BENEFITS

- REDUCED RUNNING COSTS INCLUDING ENERGY AND MAINTENANCE
- GREATER LIFE EXPECTANCY FOR PUMPING EQUIPMENT
- REDUCED RISK OF BREAKDOWN
- BETTER PLANT UTILISATION AND RETURN ON CAPITAL
- IMPROVED ENVIRONMENTAL PERFORMANCE
- PREFERENTIAL TERMS FOR PARTS AND LABOUR, AND PRIORITY RESPONSE FOR SERVICE ATTENDANCE ON-SITE WHEN YOU HAVE A SERVICE AGREEMENT



	T-T Level 1	T-T Level 2	T-T Level 3
	The standard package includes two services per year for dual stations and one service per year for a single station.	This package includes all the standard package benefits plus our Seer monitoring services. Our monitoring service ensures your station is monitored by T-T 24/7.	Our premier agreement includes two services per year, all parts plus one pump per year if required plus two breakdown call outs included.
	Service		
	Comprehensive service of pumping equipment as per our example service schedule	•	•
	Return of any failed pumps to our workshop for quotation of repair or replacement	•	•
	Full comprehensive service reports	•	•
	Priority breakdown charged at our standard hourly rate	•	•
	15% discount on all T-T products for the site registered on the Service Agreement	•	•
	Arrangement of tankering with our partners. 15% administrator fee	•	•
Monitoring of pumping station, including weekly status reports and advice of failures (subject to conditions of our out of hours contract)		•	
One pump replacement if required			•
Two breakdowns, one T-T pump and all T-T parts (only available on T-T installed stations)			•

SERVICE SCHEDULE

Each Service visit to your site includes the following checks. These checks ensure optimum uptime of your equipment and are necessary to maintain the correct working condition of the pumping system.

Checks made during each visit:

- | | |
|--|--|
| ☒ Clean pump | ☒ Clean and check level control system |
| ☒ Check stator case | ☒ Check discharge connection for leaks |
| ☒ Check motor insulation/resistance/continuity | ☒ Check pump fixings on guide rail |
| ☒ Check cable condition and security | ☒ Run pump and check running amps |
| ☒ Check oil (if contaminated renew mechanical seal /oil) | ☒ Check high level warning system |
| ☒ Check impeller | ☒ Check earth bonding |
| ☒ Check wear ring | ☒ Check lifting chains |
| ☒ Check wear place / suction cover | ☒ Check valves |
| ☒ Check volute | ☒ Check telemetry (if fitted) |
| ☒ Run pump and check bearings | ☒ Monitoring equipment |
| ☒ Check control panel / contactors / sequence | ☒ General site security & safety |
| | ☒ General site condition |

Equipment status

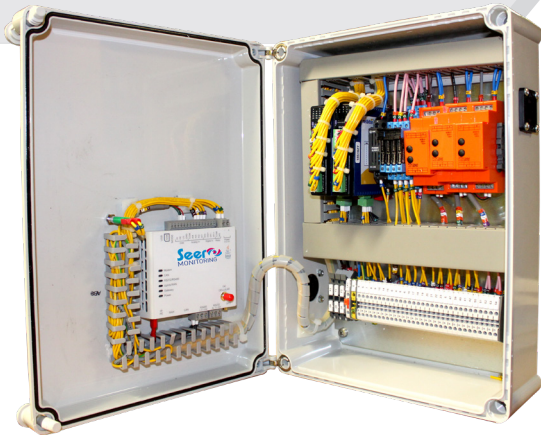
- ☒ Pump type
- ☒ Serial numbers
- ☒ Winding resistance
- ☒ Insulation resistance
- ☒ Capacitors
- ☒ Running amps
- ☒ Hours run
- ☒ Engineers notes

For details on our Service Agreement terms and conditions please visit www.ttpumps.com



PEACE OF MIND MONITORING

Our monitoring service provides 24/7, 365 days a year monitoring of your pumping equipment, using Seer monitoring units. The Seer units use advanced cloud based monitoring, allowing our in-house pump engineers to continually analyse and monitor your pumping station, ensuring smooth continual running.



SEER MONITORING

HOW IT WORKS

EXAMPLE VARIABLES MONITORED

- Power Supply
- High level
- Pump failure:
- Pump No.1
- Pump No.2
- Voltage monitoring
- Pump current
- Pump operating
- Pump under-load
- Pump seal leak
- Wet well Level
- Remote control
- Trip reset
- Pump start
- Remote control active



Service Engineer

The Service Engineer can get the full history integrated with the Pumping Station history. They can also reset remotely.

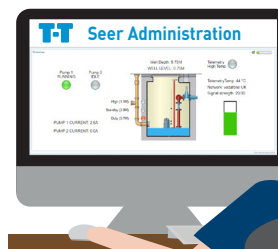


ARGOS CLOUD NETWORK
MACHINE TO MACHINE
INDUSTRIAL SIM

T-T SEER
Data Collection
Condition Monitoring
Alarms
Service History

**OUT OF HOURS
DUTY SERVICE TEAMS**

T-T Service
Seer Administration



DATA TO T-T WEBSITE

Website
ttpumps.com

ALARM CONDITION



Alarm to customer via text or email to multiple recipients or selected people.

**THE CUSTOMER
CAN VIEW ALL
SITES UNDER THEIR
CONTROL**



Benefits

REDUCED COSTS

Reduced maintenance costs due to less unnecessary site visits

MAINTENANCE

Pro-active maintenance

MONITORING

Real-time monitoring by a skilled pump engineer

SECURE HOSTING

Secure hosting of cloud based technology

DATA ANALYSIS

Historical data analysis and performance trending

EARLY INTERVENTION

Early intervention to prevent detrimental failures with remote reset and continual monitoring

REMOTE RESET

Remote reset functionality with on-site engineer safety feature

Want to find out more?
Request a team viewer
webinar session online



A PROBLEMATIC PUMPING STATION RESOLVED BY SEER MONITORING

“The development of this product has allowed us to assist not only major house builders in providing evidence of efficient working of the pumping station to aid adoption but has also diagnosed many issues within hours of being installed on sites.”

As part of the trialing and testing of the new Seer monitoring range we installed a Seer Advanced unit at a David Wilson Homes site based in Crewe, Cheshire. The 72 property development required an Adoptable Pumping Station due to no gravity sewer network being available.

The Adoptable Sewage Pumping Station provided was compliant with Sewers for Adoption 6th Edition (the applicable specification at the time of construction) to United Utilities addendum. The Seer unit provided managed to alert and diagnose an issue on site within 48 hours of installation.

The Adoptable Pumping Station consisted of a 3.0m diameter by 5.3m deep concrete wet well, separate concrete constructed valve chamber, ductile iron pipe work, valves and fittings to full specification compliance along with a T-T Controls manufactured main control panel, plus two 4kW vortex impeller ATEX approved sewage pumps. Installed into the control panel was a Text-Tel Junior SMS text message only monitoring unit, we added the Seer Advanced cloud based unit to enable us to cross correlate any alarms being received.

Within 48 hours of the Seer unit being installed, the monitoring system detected a stuck non-return valve on one of the pump discharge legs, which ordinarily could have continued to be undetected for a considerable amount of time, causing unnecessary wear on the continually running pump and an imbalance in the hours run

on the station. This issue was unknown to both the T-T monitoring department and the site operatives due to the SMS technology being limited to the amount of variables it can monitor. Without the Seer, it would have taken chance to diagnose with an engineer observing on site at the exact time the non-return valve was getting stuck.

In addition we have been able to ‘see’ for the first time, a typical day in the life of each pumping station, in regards to the empty cycles and peak demands to both inflows and operating cycles. This has enabled us to optimise the performance of each pumping station and when combined with our service and monitoring agreement, we have been able to tailor our service and reaction times to suit.

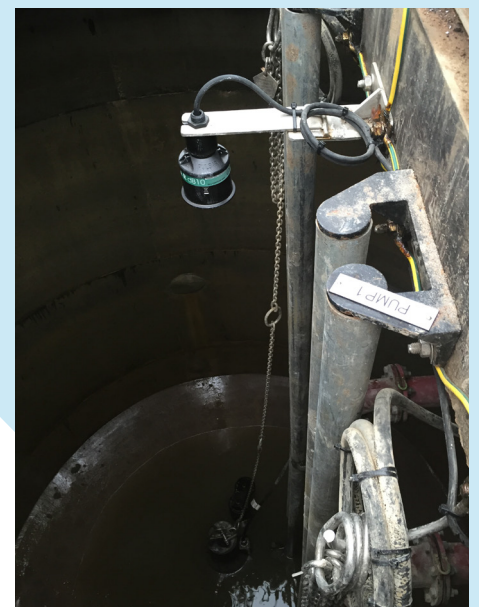
Further to identifying issues specific to the pumping station, the installation of the Seer has allowed us to identify issues, not relating to the equipment provided by T-T but problems with ancillary services, such as issues on the incoming voltage to the pumping station provided by the power supply network and the impact of such issues.

Finally, as well as being a 24/7 real time monitoring and analysis portal, Seer acts as a data logger providing downloadable reports of all data, parameters and alarms.

A document pack can then be produced and supplied to the water authority, as evidence of optimal working conditions to aid with the adoption process.

As this development combined the monitoring equipment, with a T-T service and monitoring agreement we had 24/7 visible data of the pumping station in real time. The categorisation of alarm severity (minor, major and critical) and the ability to visualise the wet well level, continually allowed us to provide a tailored reactive and preventative maintenance package to keep the pumping station in continuous working condition.

The Seer has reduced and will continue to reduce the need for breakdown calls, due to us having the ability to remotely diagnose and reset any issues on site.



TANKERING

We can assist in getting your pumping station tankered and jetted with our tankering partners.

Let us take the stress out of arranging and co-ordinating this for you. T-T only work with professional companies who we have built up good working relationships with and who we trust.

We liaise with the company, book visit, raise purchase orders and pay invoices. We charge a 15% admin fee on top of the tankering company invoice.

Please note: we are unable to give accurate quotes for this service, as it depends on time on site and disposal amounts.



WATER TESTING

We carry out full water testing backed by full certification for TVC22C, TVC37C, E.coli, Conliforms, Pseudomonas and Legionella.

RETROFIT & COMPLETE PACKAGES

1. Purchase your pumping stations from us
2. Have it installed by our fully trained mechanical and electrical engineers
3. Take the worry out of maintaining a pumping station by taking out a T-T Service Agreement



SEWAGE TREATMENT PLANTS

At T-T, we have British Water accredited sewage treatment plant engineers who can service your sewage treatment plant, ensuring it is in optimal working condition.

What are the benefits of having your sewage treatment plant regularly serviced?

- Trouble-free operation
- Avoid the risk of pollution and potential fines
- Minimise smells
- Reduce energy and running costs
- Improved plant utilisation and return on investment



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Proactive Care with Seer Monitoring

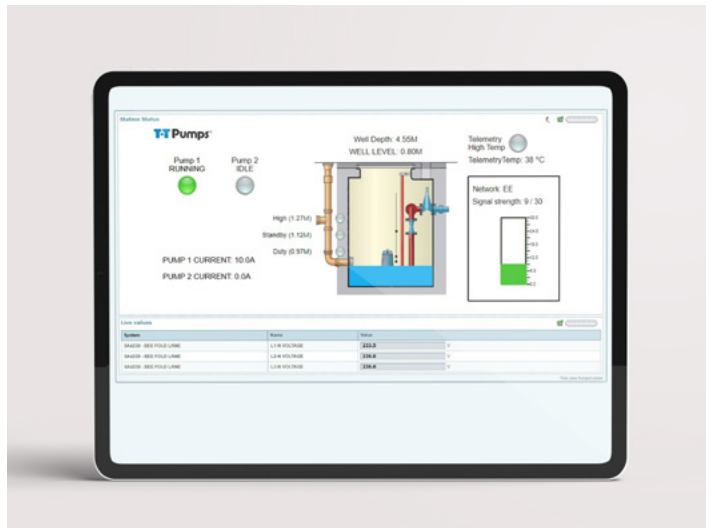
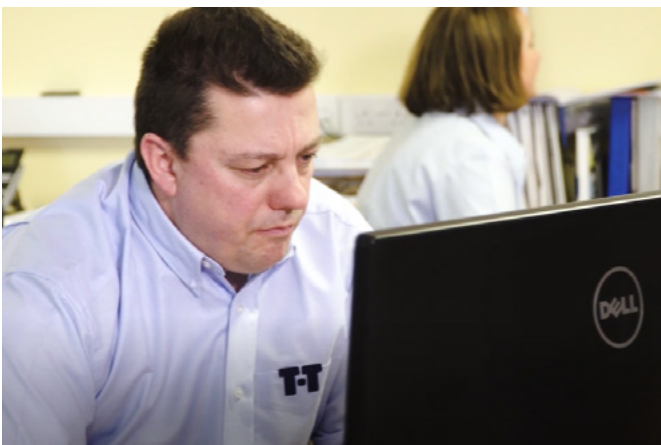


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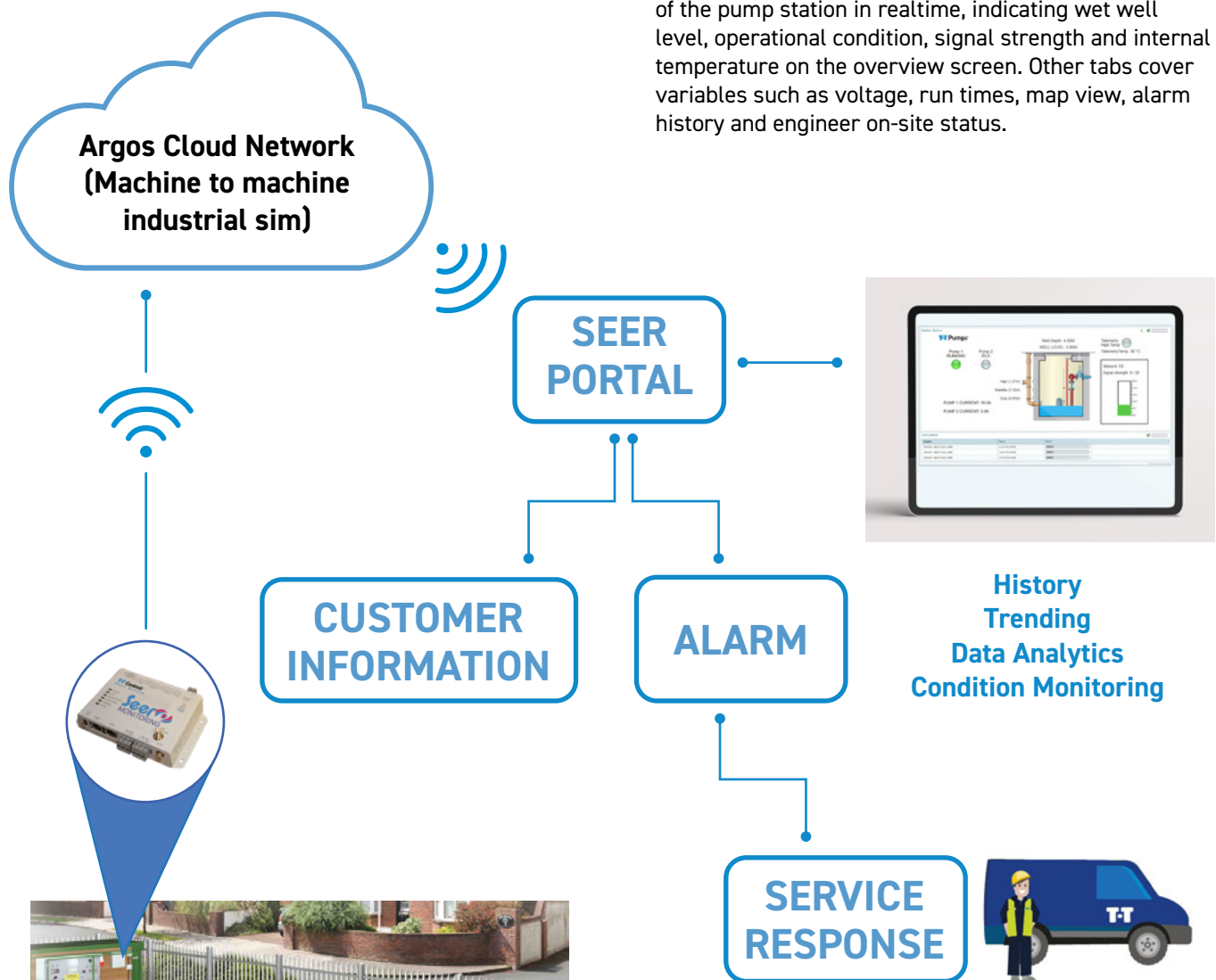
Proactive Care with Seer Monitoring



Seer Monitoring Offers Peace of Mind

Why Choose Seer?

The Seer monitoring range is an advanced data logger that uses cloud-based technology to continually communicate operational status to an internet-based portal. With a data refresh every 10 seconds, it gives a pictorial overview of the pump station in realtime, indicating wet well level, operational condition, signal strength and internal temperature on the overview screen. Other tabs cover variables such as voltage, run times, map view, alarm history and engineer on-site status.



How Seer Works

- The Seer unit sends information to the Argos Cloud Network.
- Data is collected and distributed and the T-T Service Team are alerted to any alarms.
- If necessary, the T-T engineers are deployed to site.
- The customer can view the status and activity of the station via the Seer portal.
- The Seer monitoring team can access the historical reports to ensure the station is working as intended. They can decipher if there are external factors affecting the pumping station and suggest changes to ensure it is in healthy working order.

Benefits of Seer Monitoring

Reduced maintenance costs due to less unnecessary site visits.

Pro-active maintenance reducing environmental impact.

Real-time monitoring by our skilled pump engineers.

Early intervention to prevent detrimental failures with remote reset and continual monitoring.

Data at request detailing the full history which can then be used in the preadoption handover.

Reduce Environmental Risk by detecting risks early on we can help prevent any damage to the environment.

Remote Reset functionality with onsite engineer safety feature when used with a compatible control system.

Analogue Data

- Pumps(s) running current
- Wet well level (mA signal required)
- Pump total run time
- Unit integral temperature
- Network provider/GSM signal strength
- Station location co-ordinates

Seer Micro



Seer Junior



Seer Advanced



Digital Data Signals

- Common pump(s) tripped
- High level float active
- Remote reset

Digital Data Signals

- Pump(s) overload tripped
- Pump(s) overheat tripped
- Pump(s) under-load tripped
- Pump(s) seal leak tripped
- High level back up float active
- Remote reset

Digital Data Signals

- Pump(s) overload tripped
- Pump(s) overheat tripped
- Pump(s) under-load tripped
- Pump(s) seal leak tripped
- High-level back up float active
- High-high level float active
- Engineer on site
- Remote reset



WATCH THE VIDEO ON
OUR YOUTUBE CHANNEL

SCAN TO WATCH



Built-in Features

- Real-time reporting, offering the ability to remotely diagnose faults.
- Visually represented data and alarm screens.
- Historical data held for plant comparison and analysis.
- Fully configure alerts via email.
- Download data scheduling options.
- Secure hosting of cloud-based technology.
- User profiles and notifications fully customisable.

ttpumps.com

response@ttpumps.com

01630 647200



Case Study



A PROBLEMATIC PUMPING STATION RESOLVED BY SEER MONITORING

"The development of this product has allowed us to assist not only major house builders in providing evidence of efficient working of the pumping station to aid adoption but has also diagnosed many issues within hours of being installed on sites." Commented Jane Delicata manager of T-T Controls and Automation.

As part of the trialing and testing of the new Seer monitoring range, we installed a Seer Advanced unit at a David Wilson Homes site based in Crewe, Cheshire.

The 72-property development required an Adoptable Pumping Station due to no gravity sewer network being available. The Adoptable Sewage Pumping Station provided was compliant with Sewers for Adoption 6th Edition (the applicable specification at the time of construction) to United Utilities addendum.

The Seer unit provided managed to alert and diagnose an issue on site within 48 hours of installation.

The Pumping Station consisted of: 3.0m diameter by 5.3 deep concrete wet well, separate concrete constructed valve chamber, ductile iron pipe work, valves and fittings to full specification compliance along with a T-T Controls and Automation manufactured main control panel plus two 4kW vortex impeller ATEX approved sewage pumps. Installed into the control panel was a Text-Tel Junior SMS text message only monitoring unit, we added the Seer Advanced cloud based unit to enable us to cross correlate any alarms being received.

Detection of the problem

Within 48 hours of the Seer unit being installed the monitoring system detected a stuck non-return valve on one of the pump discharge legs. This could have continued to be undetected for a considerable time, causing unnecessary wear on the continually running pump and an imbalance in the hours run on the station.

Fixing the problem

Thanks to the combination of the monitoring equipment with a T-T service and monitoring agreement, we had 24/7 visible data of the Pumping Station in real-time. The T-T Monitoring team were able to pick up the issue straight away and alert an engineer to the problem.

The Seer monitoring range has reduced and will continue to reduce the need for breakdown calls due to us having the ability to remotely diagnose and reset any issues on site. The Seer acts as a data logger, providing downloadable reports of all data, parameters and alarms. The document pack can be supplied to the water authority as evidence of optimal working conditions to aid with the adoption process.

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The Seer monitoring range can be an invaluable asset to your Pumping Station.

- 24/7 peace of mind
- Our monitoring team on hand 24 hours a day for your support
- Diagnosis and severity status of the problem from our headquarters
- Reduced breakdown calls
- Downloadable reports available