



NICHOLLS

BOREHOLES & GROUND SOURCE

OUR EQUIPMENT





Our Equipment Heading to Site







Our Drilling Rigs

Nicholls Boreholes are one of the very few installers that both drill and install systems in the South East rather than sub-contracting. The installation of the collector is key to the performance of the system and Nicholls can provide a turnkey reliable solution for both water boreholes, ground source heat pumps (GSHPs) and deep bore soakaways.

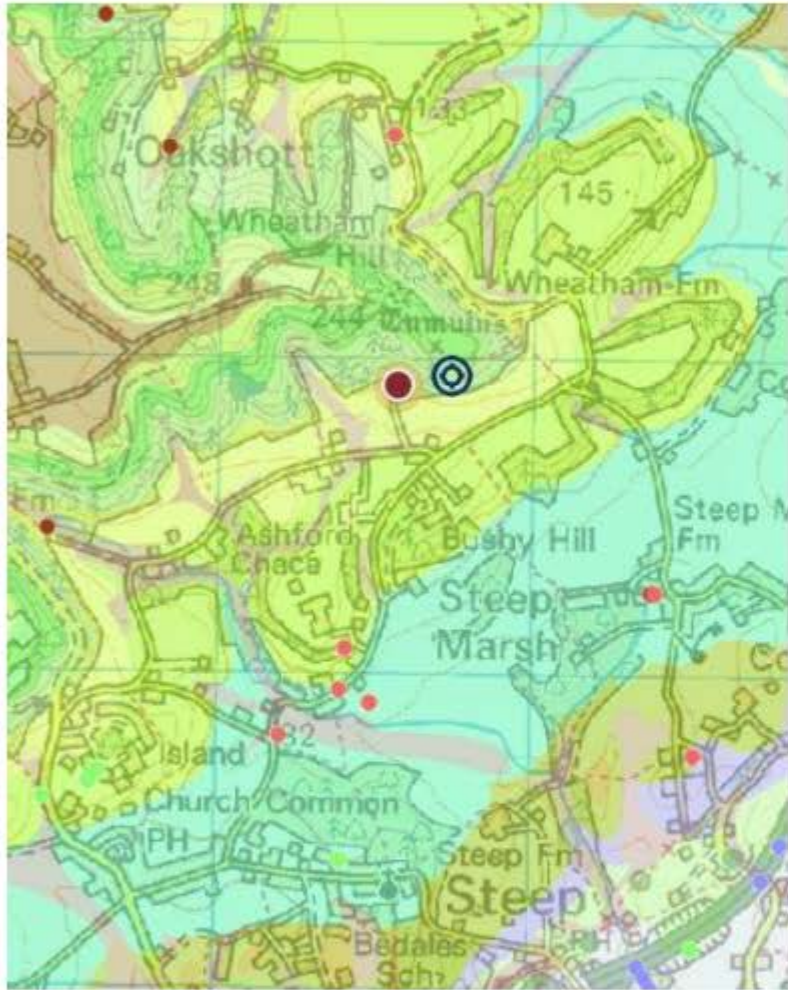
Our drilling equipment is designed to access sites of all sizes with minimum impact.

- Our drilling rigs can drill to depths of 600m+ and to a diameter between 100mm and 400mm.
 - We supply and install geothermal borehole systems and water borehole systems.
 - We undertake deep bore soakaway drilling.
 - We can offer advice on government support schemes and funding.
 - We operate across a large area of the South.
 - We provide solutions for domestic, public and commercial users.

Our Drilling Rigs comprise of:

Massenza MI5 which can drill up to 200m
Massenza MI6 which can drill up to 250m
2 x Massenza MI8 which can drill up to 600m
Massenza MI12 which can drill over 600m















Pumper Dumpers



Mud Tank



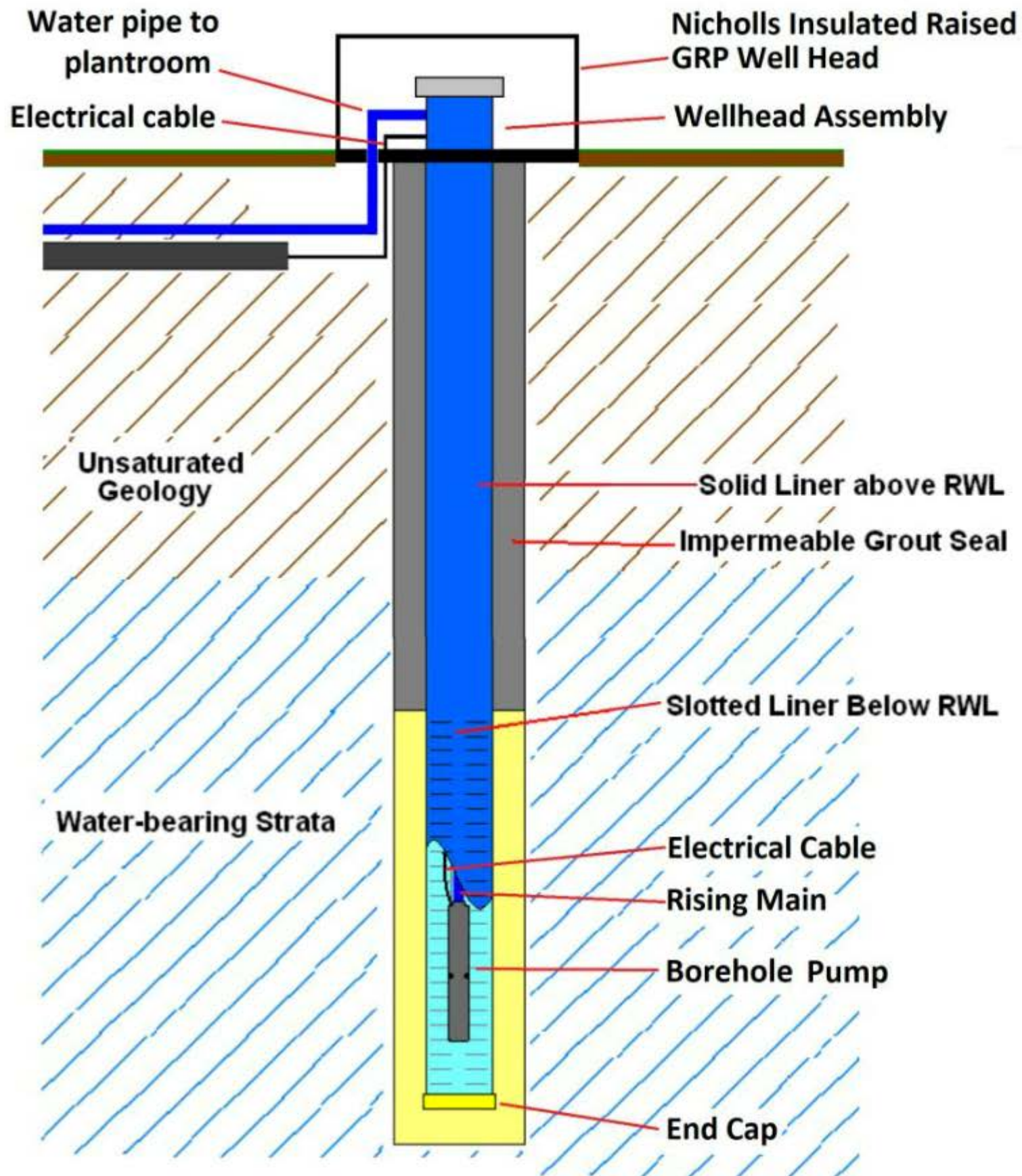
Drilling Fluid Cleaning System







WATER BOREHOLES



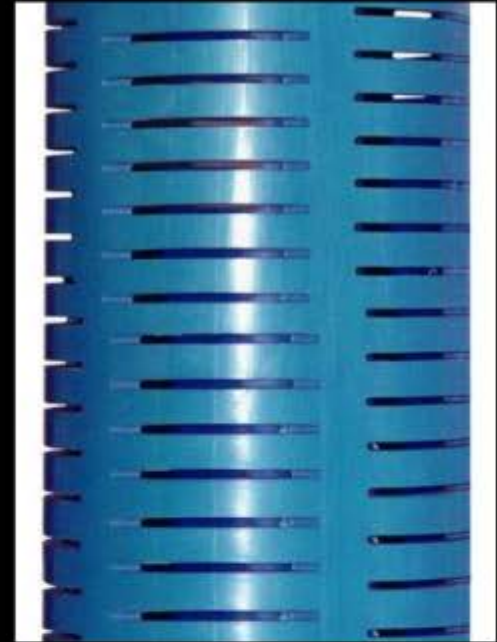
Waterwell Cross Section



Test Pumping Equipment













Nicholls
Boreholes.co.uk

**DANGER
BOREHOLE DRILLING**

 Protective Headgear must be worn	 No open flames or naked flames allowed
 High visibility clothing must be worn at all times	 Safety harness must be worn at all times



Water Storage Tanks
and Plant Room



Natural Swimming Pool
and Insulated Potable
Water Storage Tank





Booster Pump



Filox and Duplex Softener

Abstraction Licensing

What is it?

Water is a precious commodity and the supply of water is limited, so in order to make sure that it is managed and used effectively to meet our needs and to sustain our natural environment the Environment Agency has a licensing system in place.

When is a licence required?

You probably need to apply for a licence if you want to store water or take more than 20,000 litres (4,000 gallons) of water per day from an:

- * underground source
- * river or stream
- * reservoir, lake or pond
 - * canal
 - * spring

So this means you are entitled to drill a borehole on your land and extract up to 20,000 litres of water per day, with no licensing requirement, however if you want to extract more than this amount Nicholls Boreholes can help!

We can guide you through the licensing requirements and application process on your behalf. If your circumstances or requirements change at some point in the future and your licence requires updating to reflect the changes, then we can help with that too.

To talk to us about an abstraction licence application, please contact us.



Nicholls Boreholes undertake Pre and Full Environment Agency Abstraction Licence Applications on behalf of clients, delivering an end to end Licence service. The Nicholls Boreholes experienced team work with the Environment Agency and regulators to secure permission required to proceed with regulated activities. Nicholls Boreholes will ensure the following activities are completed to comply with the conditions and detailed requirements set by the regulating authorities and British Standards;

- * Pre-Application for an Environment Agency Water Abstraction Licence
- * Full Application for an Environment Agency Water Abstraction Licence
- * British Geological Society Notifications
- * Source Protection Zone Checks
- * Catchment Abstraction Management Strategy (CAMS Process) Reviews
- * Applications for Ground Water Investigation
- * Licence Associated Surveying & Water Features Surveys
- * Licence Associated Consented Test Pumping & Monitoring
- * Environment Agency Consultations
- * Environment Agency Returns/Annual Abstraction Returns
- * Water Resource & Abstraction Impact Assessments
- * Risk Assessments
- * Licence Trades or Variations
- * Licence & Permit Renewals

Nicholls Boreholes are unable to guarantee that the Environment Agency will issue a Licence or the volumes requested. However, the Nicholls team will work closely with the client and Environment Agency during the process to present the best possible case, with the final licensing decision being made by the Environment Agency.



Water Borehole Case Study - West Kent Golf Club

We were contacted by Irritech, one of the UK's leading irrigation specialists, to supply a quotation to one of their Golf Course customers. The golf course had received a bad experience with another drilling company who had not found water for them so they were understandably sceptical and cautious about making another attempt at further cost.

We were able to obtain a water borehole prognosis report, which involves a hydro geologist looking at the local geology and borehole records for that area, or areas with similar geology. They were able to offer an independent suggestion of viability and borehole depth. In addition to this we commissioned a water diviner (dowser) who helped identify the best spot to drill on site.

After receiving the go ahead we were able to install a water borehole to 113 metres and along with our in-house pump install team we were able to provide a turnkey installation for our client to provide the water supply required for their golf course irrigation system.

The system is also fitted with mains water back up so that if the course required more than their 20 cubic metres per day limit they are still able to utilise their irrigation system. Alternatively, Nicholls can organise an Abstraction License on behalf of the Client for water supply over 20 cubic metres.

We also provide an annual maintenance service to the Golf Club for their complete peace of mind.

Testimonial from client

Ben was involved at an early stage after being recommended by our irrigation consultant. The Club was a bit nervous on undertaking works for a bore hole as a similar project had failed in the past producing no water.

Ben gave a comprehensive presentation to our Council which gave us the confidence to go forward with the project and the works were completed on time with no complications.

The Club has no hesitation in recommending Nicholls.

Thank you to Ben and the Team at Nicholls Boreholes.



Case Study - Waterwell with Air Pump - Liverpool Football Club

Nicholls Boreholes were contracted to design, supply and install a 110m water borehole system at Liverpool Football Club's new 1st team training ground for pitch irrigation.

The borehole water suffered from extremely high iron levels which was expected at this location, Nicholls installed a bespoke borehole pumping system comprised of both traditional electric pump and air pumps to begin the aeration process down the hole.

Once extracted from the well the raw water is stored in a 60,000 litre holding tank fitted with bubbler bars to further encourage the iron in the water to oxidise. The air is provided by a helical screw compressor allowing for continuous running of the system and delivery of up to 20,000 litres of processed water an hour for 24 hrs a day if needed.

Final filtration is provided by 5 filtration vessels containing the appropriate filter beds, all interconnected and controlled by a central system controller. This system ensures that the filtration can also provide 20,000 litres per hour and still automatically back wash the filter beds at the required frequency. This was extremely successful as shown on the "before and after" photo.

Nicholls undertake annual maintenance service package including "Boresaver" chemical treatment of the borehole and settlement tank as well as preventative maintenance on the filter beds and compressors.



Water Borehole Case Study - Private New Build in West Wittering

Nicholls Boreholes were contacted by LGM Developments of Chichester, a high-end bespoke developer, to supply and install a 160 metre steel lined waterwell to a site in West Wittering. It was to provide water for constructing a new private dwelling as the area lacked sufficient public water supply for the build. The waterwell supply was to be used for all the building works and then once completed supply the property owner with a private water supply for the house and irrigation for their grounds. As part of our commitment to customer service, Nicholls provided an annual maintenance waterwell service to the property owner for their complete peace of mind.

Testimonial from client

"We have been pleased to be working again with Nicholls Boreholes, another good result and we look forward to the next project. LGM Developments Ltd."



Case Study - Solar PV Panels Powering Water Borehole on a Farm in South Downs

Nicholls Boreholes were contacted by a livestock farmer near Graffham, West Sussex to provide a quote for supplying and installing a 177 metre water borehole to provide water supply for their livestock. Due to the farm being situated on the top of the South Downs, in an isolated position and with a lack of electrical supply, the water borehole is powered using solar PV (photovoltaic) panels. Within the small plant room there is back-up equipment for the waterwell. The water supply is being collected in a 20,000 litre water storage tank (pictured) situated next to the plant room. The system has a chlorine dosing unit to ensure the quality of the water. As part of our commitment to customer service, Nicholls provides an annual maintenance service to the farm for their complete peace of mind.

Testimonial from the client

Working with Nicholls Boreholes on this project was a very positive experience. I found them to be extremely customer friendly and professional with a meticulous eye for detail. This was the first solar powered borehole pump that Nicholls had installed and a lot of research went in to deciding on the right equipment for the job. The site is isolated and is in the middle of the South Downs National Park. The borehole itself was deeper than anticipated and we also laid 4km of water pipe to supply livestock troughs, west and east of the borehole, including the Graffham Down Trust nature reserve. I would certainly recommend Nicholls to anyone thinking of installing a water borehole.



Case Study - Waterwell Irrigation for Old Plaw Hatch Organic Farm

Nicholls Boreholes were contacted by Old Plaw Hatch Farm following a recommendation from a local water diviner, Guy Hudson, to install a waterwell. Old Plaw Hatch already had a spring water system, but they wanted to increase their water capacity by installing a water borehole to enable them to irrigate both their produce and supply their cattle.

Old Plaw Hatch Farm is a 200 acre farm on the edge of the Ashdown Forest near Sharpthorne. It has been a biodynamic farm for over 30 years and is owned by a charitable trust. They work with the planetary rhythms for their planting and harvesting of all their crops which enhances their vitality. Old Plaw Hatch also run their own farm shop that is a certified Demeter shop where they sell the full range of the farm's produce such as dairy produce, meat, fruit, vegetables, eggs and even sheep wool in season. Having a waterwell has enabled them to have easy and affordable water for all their various forms of farming.



Water Borehole Case Study - Wrotham Heath Golf Club

Nicholls Boreholes were contacted by Wrotham Heath Golf Club to quote for supplying and installing a 60 metre water borehole to provide irrigation for their greens that are played on throughout the year.

Within the plant room (pictured) we installed particle filters and a U.V. with an electronic batch counter set to 20,000 litres per day to keep them within their limit before an abstraction licence is required. The water supply is being collected in a 336 cubic metre water storage tank (also pictured) situated next to the plant room.

As part of our commitment to customer service, Nicholls provides an annual maintenance service to the golf club for their complete peace of mind.

Testimonial from the client:

On the recommendation of our consultants Irritech Ltd we approached Nicholls. From the initial meeting with Ben Nicholls to the completion of the contract, including the use of a Water Diviner, the whole operation was carried out very professionally. We have every confidence in recommending Nicholls Boreholes to future users.



Water Borehole Case Study - Aubergine Nursery, Essex

TV Broadcaster Channel 4 contacted Nicholls Boreholes regarding the possibility of filming one of our borehole drilling projects to use as part of Channel 4's The Restoration Man presented by George Clarke. The clients in the episode were restoring a pumping station above an existing borehole.

In December 2015, Nicholls Boreholes Managing Director, Ben Nicholls met George Clarke on site at an aubergine nursery in rural Essex where they filmed Nicholls Boreholes successfully drilling a 125 metre borehole to provide irrigation to the nursery.

This episode was aired in 2016.



Case Study - Commercial Water Borehole for Agrivert in Chertsey, Surrey

Nicholls Boreholes were contacted by Agrivert, a sustainable and cost-effective organic waste management solutions company. We were contracted to drill and install a 250 metre deep water borehole to supply their £11 million anaerobic digestion (AD) plant in Chertsey, Surrey.

As a specialist borehole drilling company we are experienced in supplying, fitting and maintaining commercial water or waterwell boreholes for a wide range of commercial customers. Our experience means we can use precisely the right equipment for any geology, which in this particular case was a clay based strata.

With our own drilling equipment it was necessary to drill to the depth of 250 metres to extract water from the chalk aquifer. The water borehole was steel lined to 178 metres to avoid unwanted water ingress from the clay. We then installed a pump (to raise the water to ground level) and fitted it with a cover to protect the ground water supply from pollution.

Agrivert wanted their own private water supply to mix with the food waste which generates a bio gas. This bio gas is then burnt in a turbine to generate electricity which is exported into the National Grid. This commercial water borehole will in the long term save Agrivert money, provide a cleaner, 'greener' source of water and also added value to their site.



Water Borehole Case Study - Laundry Company in London

Nicholls Boreholes were contacted by a Laundry Company based in South West London to design, supply and install a water borehole to provide them with their own private water supply for laundering their linen. Nicholls drilled and installed a steel lined 130 metre borehole.

The Company is constantly supplying linen to clubs, restaurants and catering companies, but Nicholls carried out the work causing little disruption so their business could continue. The Company no longer need supply from the mains water company.

As part of our commitment to customer service, Nicholls provide an annual maintenance service to the Company for their complete peace of mind.

Testimonial from client

Just for the record, I was most impressed with the drilling team, they were great guys and the conditions they worked in one week were horrific but they were always at site working.



WATERWELL SERVICING

As one of the leading water borehole drilling contractors in the South East, Nicholls Boreholes have installed and serviced many hundreds of water borehole pumping systems with filtration. We also offer annual borehole servicing for most systems, whether or not we installed them ourselves.

The Nicholls Boreholes Premier Waterwell Service Agreement – How it works and what it does.

Nicholls Boreholes' Premier Service Agreement specifically tailored to your system. After commissioning you will be provided with a Completion Pack containing service details, costings and enrolment into your service programme. Should you choose to sign up to our Premier Service Agreement you will be asked to sign a direct debit form for monthly/quarterly payments or a one-off annual payment and our Service Team will contact you annually to arrange a convenient time to undertake your service.

The Premier Service Agreement is a 12-month Agreement offering various benefits.

Benefits of this Service Agreement:

- Receive 10% discount on servicing labour – paid monthly by Direct Debit
- Receive an additional 10% discount on parts and call-outs when invoiced after each visit.
 - Achieve priority call-outs.
 - Have peace of mind
 - Supports warranties
- Pay monthly or quarterly spreading the labour cost over the year
 - Pay annually to receive the discount and other benefits
 - Confidence that you will be looked after



Boresaver

Nicholls also offer a BoreSaver Flushing System which removes iron oxide and bacteria in waterwell systems. It comes in a solid state crystal and is added directly to the water system. The treatment works directly on problem areas loosening and dissolving the deposits and related contamination. A number of other standard rehabilitation methods can then be used, including surging and brushing, airlifting and pump-in well recycling. Followed by safely pumping the deposits and contamination away.

The frequency of follow up cleaning will be determined by the natural conditions in the system. An ongoing maintenance programme is recommended.



DEEP BORE SOAKAWAYS

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Nicholls Boreholes are highly experienced, specialist drillers and installers of deep bore soakaways. These are used where traditional soakaways will not work and the cost of installing adequate traditional drainage is excessive. A borehole for a soakaway is constructed in a similar way to a waterwell borehole and we drill and install the soakway boreholes using British Standard casing.

As well as having extensive experience of creating soakaways in a wide variety of geological conditions, Nicholls Boreholes provides a unique end-to-end service, from the initial survey to the final testing of the soakaway, including all relevant health and safety information and requirements. Once your project is completed we also offer an annual service agreement for complete peace of mind.

Where a traditional style of soakaway won't work because of geological or site conditions, or where the installation of traditional drainage will be too costly, a deep bore soakaway provides a practical alternative.

The Nicholls Boreholes deep bore soakaway service

We aim to make the installation of your deep bore soakaway as simple as possible, with the absolute minimum of disruption. All work is undertaken by our own in-house team and we keep you informed at every stage as well as being available to answer questions or give you updates.

We provide you with advice, a no-obligation site assessment and a free, no-obligation quotation. Then, if you decide to go ahead with your deep bore soakaway, our service includes:

- All relevant health and safety information and requirements.
- Drilling using rotary air/mud drilling techniques to the required depth.
- Installation of the relevant liner using perforated for lower section and solid above (to allow the borehole to be sealed correctly).
- Installation of suitable gravel pack to support the liner and allow easy percolation.
 - Grouting of the borehole.
 - Testing for flow rates and access.
- Supplying and fitting of the siphon head.

Usually the installation of the relevant chambers required is carried out by the groundworks contractor.





Soakaway Boreholes Case Study - London Underground

We were contacted by London Underground to provide a quote for installing 4 x 10 metre soakaway boreholes.

The soakaways were to provide drainage along the Metropolitan Line between Chalfont & Latimer and Chesham stations. Not only did we do the soakaways for London Underground, we supplied and installed purpose built soakaway pits.

As we have the equipment and resources available to undertake their projects, we were registered as an approved supplier of TFL and given the contract for the job and as such look forward to working on another project for TFL in the near future.

Our operatives carry Lucas cards.

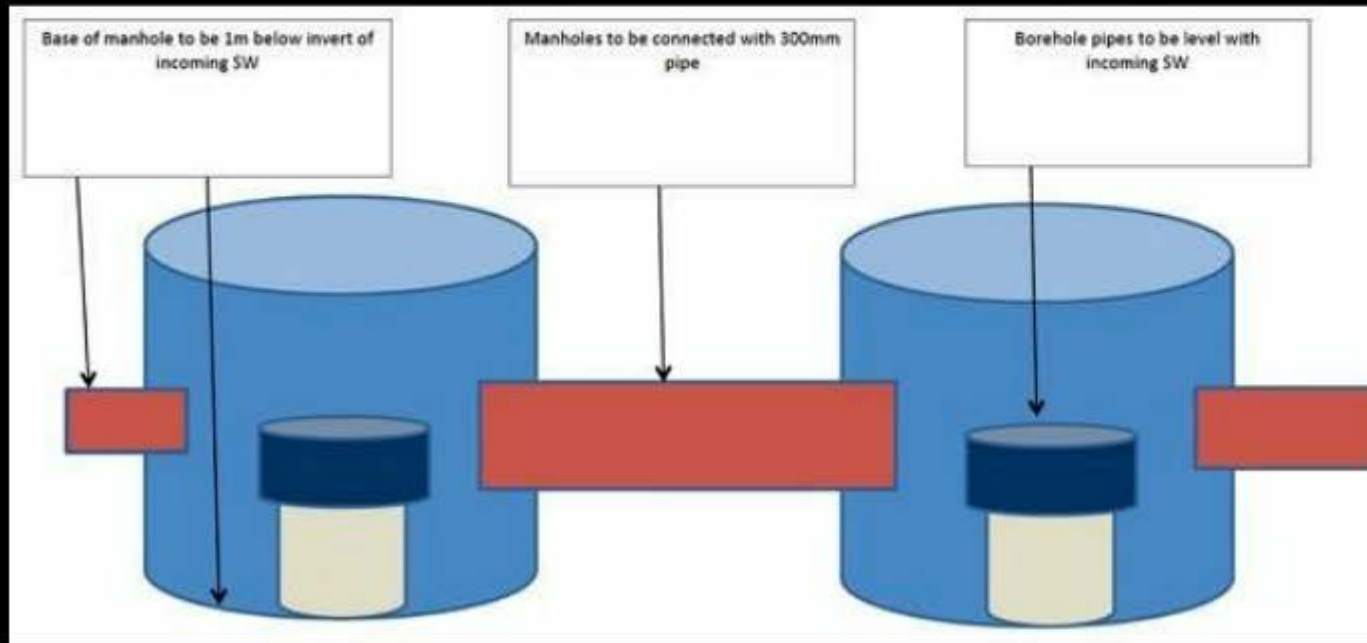




Soakaway Drill Rig



Soakaway Chamber



Soak Test for DBS
and
Syphon Head

25 Soakaway Boreholes for Adenstar Developments

We were contacted by Adenstar Developments to install 25 Deep Bore Soakaways at Sussex University. These were needed for drainage as part of a £150 million development to replace the University's Halls of Residence on the Falmer Campus.

Drilling of the boreholes and soak testing was completed by Nicholls alongside Balfour Beatty, Adenstar and Arup Engineers who also worked on this major development project for Sussex University.





Other Services



Nicholls have invested in a support vehicle for better onsite mechanical support to our plant and machinery and to continue our improved services to Clients.

Drilling Fluid Cleaning System

Our purpose-built mobile drilling fluid cleaning system was developed in house. It is a desander which is mounted over a shaker with a fine mesh screen.

The mud liquid is fed into the inlet and oscillating plates of the shaker separates the particles from the liquid.

The liquid then passes through the hopper and back into the machine.

There are also 3 cyclones which remove the smaller particles helping to increase the lifespan of the drilling fluid. The solids then drop off into a hopper for removal.

The benefits of this machine are that it is labour saving and also increases the lifespan of the drilling fluid creating less waste from the drilling process.



Camera Equipment

Nicholls have invested a considerable amount in a state-of-the-art borehole investigation camera which enables us to survey and record in detail the integrity and construction of boreholes. This enables us to offer a superior service for our clients.

The camera can record the findings and these can be provided on a DVD.





Nicholls Boreholes is run by Ben Nicholls (pictured), Director and founder of Nicholls Countryside Construction Ltd in conjunction with his brother, Richard.

We have over 65 employees all extremely client-focused and trained in their area of expertise. This includes a dedicated Drilling Manager and Installation Manager to oversee their teams to ensure smooth running and efficient projects as proven in the testimonials below:

THEY HAVE PATIENTLY GUIDED US THROUGH EVERY ASPECT FROM THE INITIAL DRILLING TO THE FINAL GRANT APPLICATION.'

Many thanks to the great team at Nicholls. A very large project converting our Grade II listed Georgian property (and pool) entirely to ground source heating. They have patiently guided us through every aspect from the initial drilling to the final grant application. Projects like this will never run entirely to plan but, thanks to the excellent customer service, it has been relatively painless. We are very happy to recommend them.

'THEIR PROFESSIONALISM THROUGHOUT WAS BRILLIANT AND IT WAS A JOY TO COME ACROSS A BRITISH FIRM PROVIDING SUCH A SERVICE.'

I selected Nicholls Boreholes on recommendation, but mainly because all parts of the operation were carried out by this one company. Their professionalism throughout, from the MD Ben Nicholls to every operative was brilliant and it was a joy to come across a British firm providing such a service. I highly recommend them and would be prepared to discuss my experience with any new customers.





Gone Home!

