

AARSLEFF GROUND ENGINEERING

# Specialist Retaining Walls



**AARSLEFF**

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“Whatever the client’s remit, problem or challenge, if it involves a retaining solution, we can engineer an approach to help fulfil or tackle it”

## WIDE RANGE OF RETAINING SOLUTIONS



Aarsleff Ground Engineering are one of the UK’s leading specialist ground engineering contractors, delivering high quality bespoke ground engineering solutions to our customers in a safe, smart and sustainable way. With an impressive collection of equipment and access to Europe’s largest fleet of ground engineering rigs, Aarsleff’s Specialist Retaining Walls division (SRW) are equipped to work on a variety of projects delivering a diverse range of geotechnical, piling and retaining solutions. Our highly skilled estimating, design,

manufacturing and installation teams work together to add value for our clients. With high degrees of on-site management, coupled with strong client liaison throughout the life of the project, we deliver ground engineering excellence time and time again. Aarsleff’s work revolves around key construction features: permanent and temporary retaining walls, basements, cofferdams, anchored or propped walls, sheet piled walls, king post walls, secant and contiguous piled walls.

“Through close relations with clients, developers and principal contractors, Aarsleff’s team are able to help develop successful projects, built on reliable and relevant methodologies, whether these relate to permanent installations or temporary ones”



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“We provide a bespoke design service optimising solutions to be cost-effective, environmentally appropriate and risk managed”

## IN-HOUSE DESIGN



Our dedicated design engineers use the latest software technology for limit state analysis and pseudo-finite element, to create information rich format models for accurate planning, manufacture and site installations following the client's approval of the design calculations and drawings. Our design service is very comprehensive and detailed. We provide a full bespoke design service from placement of order to installation of the final retaining structure and adopt a rigorous approach in the design of any

scheme. We analyse the information provided to us to allow for the most cost effective and timely scheme, this allows us to provide value engineered solutions that are beneficial to the client. During the design phase of a contract, we proactively engage with the principle design team to ensure what we are offering is in line with the clients expectations and we are working as an embedded team for the smooth delivery of benefitting the whole project.

“We model many different configurations on a scheme rather than accept that the first set of results are gospel”

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“King Post Walls are quick to install, offering wide ranging flexibility and hand over for follow on trade, and various types of infill panels allow for an aesthetically pleasing finish “

## KING POST WALLS



Aarsleff Ground Engineering construct King Post Walls for significant retained heights, optimising different installation methods. They can be constructed as free standing cantilever walls, propped or anchored structures offering numerous applications including basements, embankment and highway retention. One of the oldest forms of retaining systems used in deep excavations, king post walls are formed of isolated steel columns that are installed along the line of the proposed retaining wall typically at predetermined centres and then infill panels are placed between said columns to form the

retaining structure. The flexible installation allows top-down or bottom-up construction. The space between the H-section posts are excavated and then filled most commonly with a precast concrete panel. For bottom-up construction, back-filling would then take place. King post walls are quick to install and hand over for follow on trades when compared to other techniques. They generate minimal spoil on site and with options for various types of infill panels or complimentary cladding systems, the king post wall finish can be an aesthetic one.

“With Aarsleff’s in-house design capabilities, King Post Walls are designed to relevant codes and can be analysed in the temporary or permanent conditions to optimise solutions”



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“Our experienced project delivery teams work closely with our clients throughout the project life cycle ensuring the development runs to time and budget”

## SHEET PILING



Our in-house expertise enables us to design, supply, install & extract sheet piles whether for temporary or permanent works. Sheet piles can be used for a variety of applications including cofferdams, retaining walls, seawalls, bulkheads, access jetties or other applications where earthworks support is required. Aarsleff has access to a comprehensive fleet of specialist piling equipment. Our experienced project delivery teams work closely with our clients throughout the project life cycle ensuring the development runs to time and budget. Steel

sheet piles have excellent resistance to high driving stresses and can prevent water ingress. Additional support can be provided via hydraulic or in-situ frames, tie-rods or anchors. Working closely with clients, developers and principal contractors, Aarsleff's SRW team design and deliver successful projects, built on reliable and relevant methodologies, whether permanent or temporary. Each project is evaluated and appraised to develop the optimal engineered solution.

“Additional support can be provided via hydraulic or in-situ frames, tie-rods or anchors”

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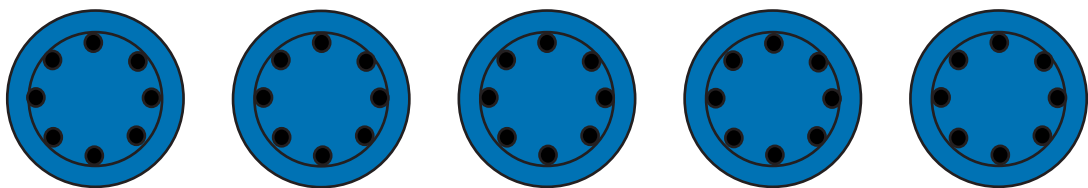
“Typically used in the construction of basements or substructures in close proximity to existing structures requiring restraint or where working space is limited, the technique assists in the control of ground movement and reduces the amount of excavation”

## CONTIGUOUS PILE WALLS



Aarsleff Ground Engineering has the specialist plant and expertise to install contiguous pile retaining walls. Contiguous pile walls are constructed with nominal gaps between adjacent piles, depending on retained heights, installation tolerances and allowable deflections. The gap between each pile is typically 150mm. These can be constructed to provide load bearing capacity as well as a retaining

structure where line loads can be applied to the wall or additional piles to form caps. Contiguous pile walls are ideal when groundwater ingress is not an issue for the finished wall. This type of retaining wall is used on a wide range of engineering projects such as ground stabilisation, underpasses and basement walls.



“Aarsleff Ground Engineering’s retaining wall portfolio are designed in-house by our highly experienced design engineers who focus on delivering a cost-effective engineered solution time and time again”



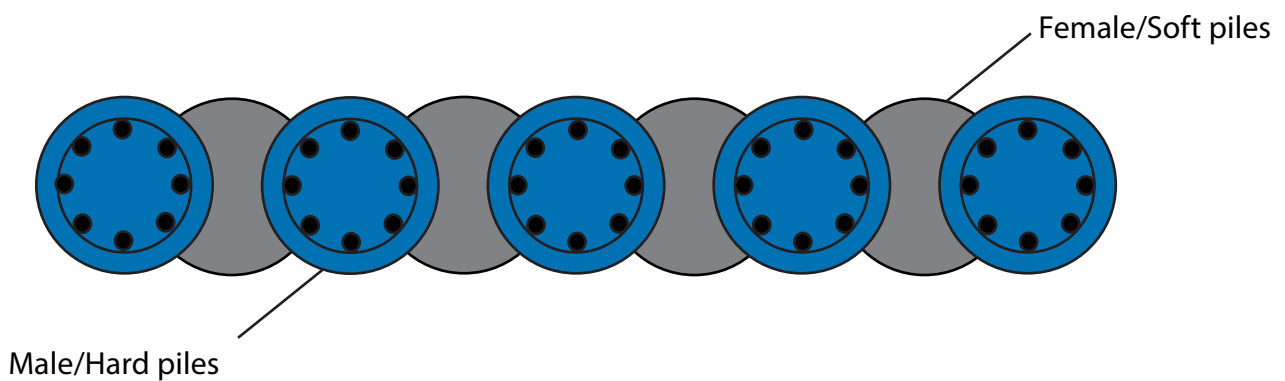
“Secant walls can be used to form a continuous watertight wall which can be an added benefit for the construction of basements and underground car parks”

## SECANT PILE WALLS

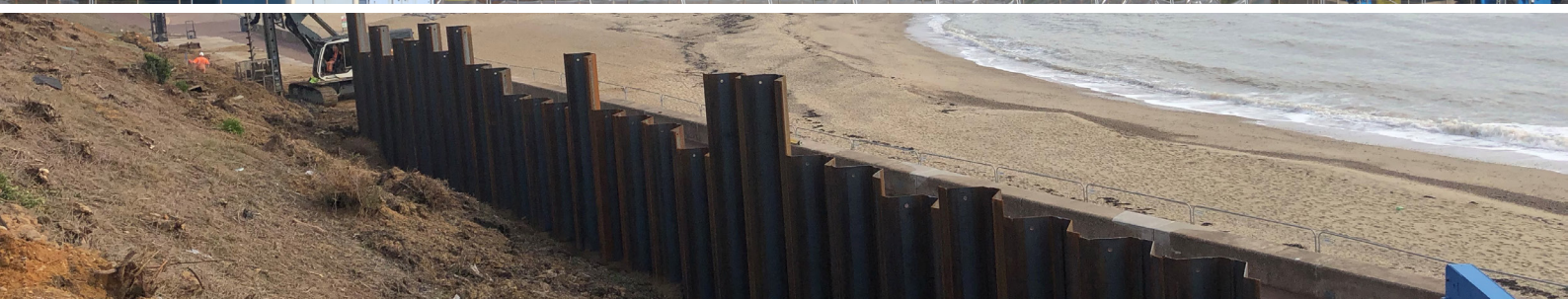
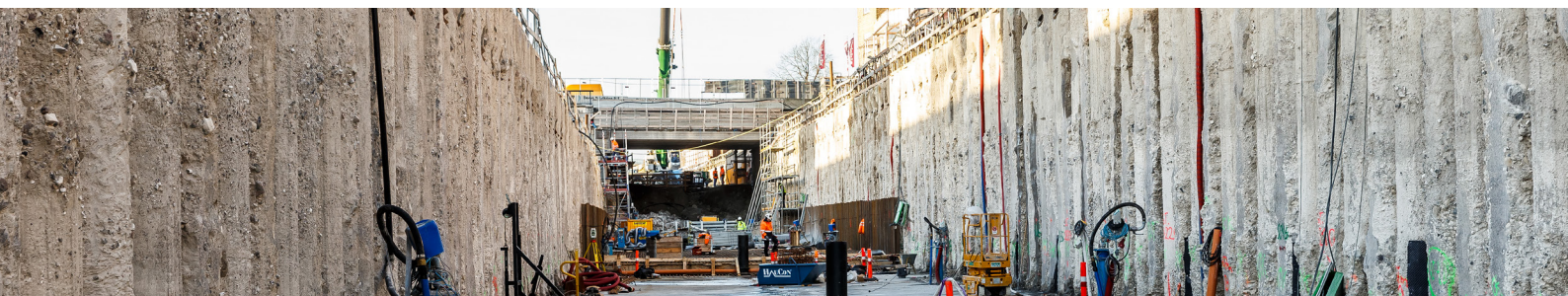


Secant bored pile walls are formed using interlocking primary and secondary piles. The secondary piles are first installed with the primary pile cut in to the secondary pile. The secondary pile can be described as soft, firm or hard depending on the design requirements. A soft and firm pile resists the loss of ground between the structural piles along

with reducing the potential flow of ground water. A hard pile is cast with both structural concrete and reinforced with a square cage adding to the walls capacity. A secant pile wall is a cost effective alternative to diaphragm wall construction and has a greater height retaining capability than a sheet pile.







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