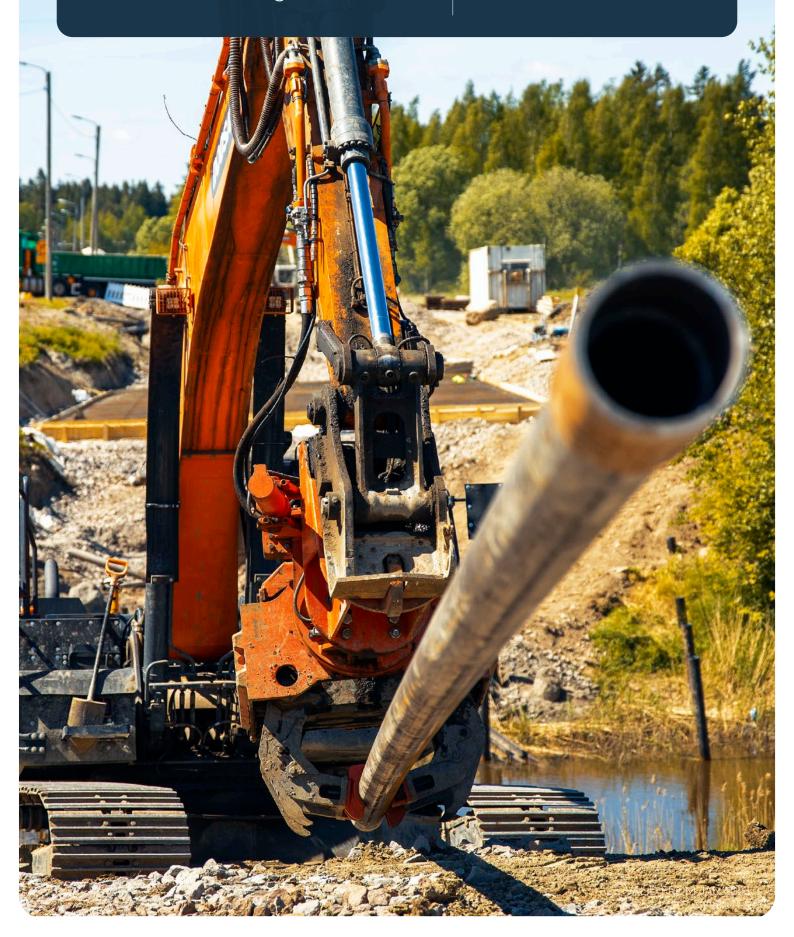
# MOVAX Total Piling Solutions

INTRODUCTION TO MOVAX WAY-OF-PILING



#### THE COMPANY

## INTRODUCTION

Movax Oy, established in 1993, is a Finnishprivately-owned based, world-leading innovator, developer and manufacturer of excavator-mounted piling and foundation equipment with highly advanced automatic control systems and information management solutions.

Movax Oy is the inventor of the modular, vibratory side grip pile driver technology. Movax Oy's inventions have resulted in numerous patents (50+) and its trademark, MOVAX®, is registered and well known for the quality it represents all over the world.

Movax Oy is strongly committed to continuously develop its products and services in close cooperation with its customers and local partners.



#### 1993

Established in Hämeenlinna, Finland

#### 1996-1997

1st auto-steering for hydraulic excavator

#### 2009

ISO 9001 certificate

#### 2012

Resonance-free side grip pile driver















#### 1994

1st side grip pile driver

#### 2006

Terra Patris Group main owner

#### 2011

New generation modular side grip (SG) pile driver

#### 2014

Introduction of new generation MCS Lite & Pro Control Systems

### **MAJOR MILESTONES**

#### A TOTAL SOLUTION.

Movax Oy focuses solely on solutions for the piling & foundation industry. The comprehensive range of excavator-mounted piling & foundation equipment and customized solutions cover a complete range of piling technologies - including both driven and bored piles.

#### UNIQUE, VALUE-ADDING TECHNOLOGY.

Movax Oy's piling and foundation equipment provide the optimum way-of-working - MOVAX WAY-OF-PILING™ - when constructing foundations, building retaining walls, both temporary and permanent, cofferdams and when performing trenching and excavation work and soil stabilisation in a wide range of applications.

#### GLOBALLY LOCAL CUSTOMER CARE.

Movax Oy focuses on superior customer service and support together with a world-wide network of local partners, established in more than 30 countries all over the world.

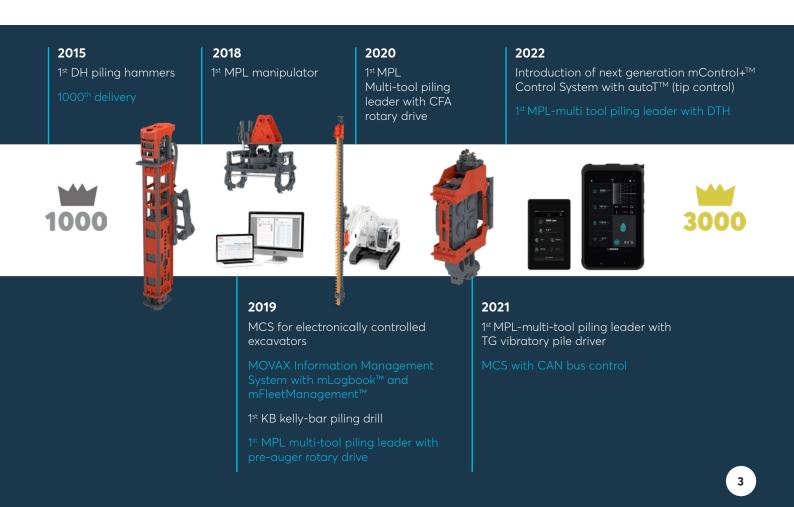
#### GLOBALLY PROVEN.

With 30 years of experience and more than 3000 units delivered to all over the world and with a clear focus on the piling and foundation industry, MOVAX has a deep understanding and know-how of varying site and soil conditions - and of all kinds of different type of excavators and rail roaders.

Movax Oy's experience also covers a wide range of applications ranging from Rail, Road and Civil to Waterways & Piers, Utilities and Environmental & Energy.



Higher productivity – Significant savings fast, efficient, versatile, safe, accurate, reliable.



#### THE TOTAL SOLUTION for

## PILING, FOUNDATION & SOIL STABILISATION

MOVAX excavator mounted piling equipment and customised solutions are available for different piling technologies, including both driven and bored piles, and for varying site and soil conditions and requirements.

The MOVAX Control System links the excavator with the MOVAX piling equipment and customised solutions whereas the MOVAX Information Management System (MIMS) provides essential information about the piling process and the pile installation - and about the MOVAX piling equipment.







#### PILE DRIVERS

Side grip vibratory-type pile driver for handling, pitching, driving & extracting a complete range of driven piles, including sheet piles, H-beams, tubular steel piles and timber piles.

#### **PILING HAMMERS**

Hydraulic, double-acting impact-type piling hammers for driving load-bearing piles or assisting in sheet pile driving in even the most difficult soil conditions.

#### **PILING DRILLS**

Telescopic/kelly bar-type piling drills for bored, cast-in-situ (concrete) piles.



#### MOVAX CONTROL SYSTEM

The MOVAX Control System (mControl+) controls all MOVAX piling equipment and customised solutions. The system controls the auxiliary hydraulics of the excavator and all the functions of MOVAX's piling equipment.



## MULTI-TOOL PILING LEADERS

Customised multi-purpose piling leaders with tooling including vibratory pile driver, piling hammer and rotary drives for pre-augering and CFA piling.

#### COLUMN STABILISATION LEADERS

**Customised column stabilisation leader** for increasing strength, improving deformation properties and to increase stiffness of soft soil.



#### **INFORMATION MANAGEMENT**

The MOVAX Information Management System (MIMS) provides essential information about the piling process and the pile installation – mLogbook - as well as about the MOVAX piling equipment itself – mFLeet Management.

#### THE TECHNOLOGY

# UNIQUE, INNOVATIVE & VALUE-ADDING

 $\mathsf{MOVAX} \ \ \mathsf{way}\text{-}\mathsf{of}\text{-}\mathsf{piling}^{\mathsf{TM}} \ \ \mathsf{provides} \ \ \mathsf{a} \ \ \mathsf{most} \ \ \mathsf{efficient}, \ \ \mathsf{fast},$ flexible and versatile, accurate, safe and reliable way-ofworking which results in a higher productivity and thus significant overall time and cost savings in a wide range of piling and foundation applications.

## higher productivity.

fast. efficient. versatile.



## significant overall savings.

accurate. safe. reliable.

#### THE TECHNOLOGY

# HIGHER PRODUCTIVITY - SIGNIFICANT SAVINGS



#### fast.

The fastest way of managing the entire piling process – from handling, pitching and driving to extracting the piles - due to the superior handling capabilities of the side griptechnology combined with the most advanced automated control system. One and the same control system for all MOVAX piling equipment and customised solutions.

#### efficient.

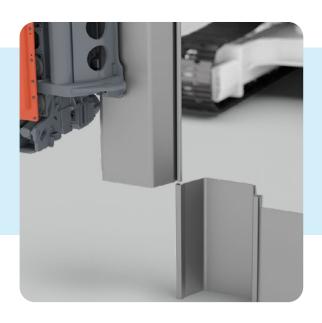
The most efficient – and cost-efficient – way-of-piling with no need of assisting machinery or manual handling, additional work, material or tools and with only minimum assisting manpower. Lesser – and thus cheaper – logistics with less and smaller machinery, tools and manpower.





#### versatile.

The most flexible and versatile usage as the same side grip pile driver can be used for multiple types of piles and different type of piling and foundation work due to the modular design providing the optimum solution for basic piling and foundation work in normal site and soil conditions - and especially suitable when limited access, space or headroom is available and in sensitive environments.



#### accurate.

The most accurate, precise and high quality piling installation due to the side grip technology combined with the state-of-the art, automatic control system – further supported by real-time information about the piling works.

#### safe.

Unsurpassed overall safety because of the inherent safety of the side grip technology combined with high quality manufacture and the multiple safety features of the advanced control system.





#### reliable.

The highest possible availability and reliability due to continued product development already since 1993 and quality of manufacture combined with the modular construction ensuring quick, easy and high quality maintenance and repair.

#### THE MANUFACTURE

## QUALITY BUILT-TO-LAST

MOVAX is made in Hämeenlinna, Finland utilising high-class materials, equipment and components – and modern, state-of-the-art production technologies and machinery ensuring the highest possible quality of manufacture.

Movax Oy's own production is supported by a proven, high quality network of partners. The state-of-the-art production facilities & machinery, long-term, established and reliable partners combined with optimized logistics ensure both quality and cost-efficiency – as well as fast, on-time deliveries.



#### CERTIFIED MANAGEMENT SYSTEM

Movax has a certified Quality Management Systems according to ISO 9001:2015.









#### THE SERVICE

# GLOBALLY LOCAL CUSTOMER CARE

After sales services are provided by Movax Oy's specialists and a global network of trained, skilled and certified local partners. State-of-the art tools such as mFleetManagement enables quick and efficient support by Movax Oy's specialists at any time all over the world – quickly and efficiently.



#### MOVAX mFleetCare<sup>TM</sup>

...is a total service solution intended to maximise the availability of the MOVAX piling equipment and of the productivity and the quality of the piling work.

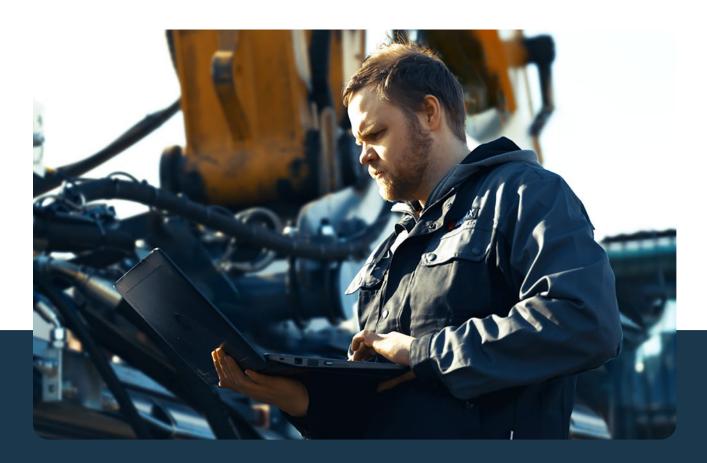
The goal of **MOVAX mFleetCare** is to ensure the maximum and to provide the operator with the required skills and best practises – and with superior support in all conditions and at all times – thus enabling the operator to perform the work with the highest productivity, accuracy and quality.

**MOVAX mFleetCare** addresses all aspects of ensuring the highest possible availability and the best use of MOVAX piling equipment and customised solutions. mFleetCare covers audits and inspections, preventive and corrective maintenance, training services for the continued growth of expertise and skills, efficient and fast on-site and remote support, installation and calibration services, as well as engineering and spare parts services.

#### LOCAL SUPPORT

...is provided by certified local partners in more than 30 countries or regions all over the world. The global network ensures that the essential and required support is always close at hand. With Movax Oy's specialist always able to provide quick, on-line support with the mFleetManagement tool.







MOVAX excavator-mounted piling & foundation equipment and customized solutions for driven, drilled and bored piles.













CIVIL

ROAD

WATERWAYS



MOVAX WAY-OF-PILING™ provides the optimum way of working when constructing load bearing foundations, building retaining walls, both temporary and permanent, cofferdams and when performing trenching and excavation work; and soil stabilisation in a wide range of applications.

## RAIL



"MOVAX piling equipment provides a total, logistically optimum solution covering all piling technologies needed in the construction and electrification of Rail roads."



MOVAX piling equipment provides the total, logistically optimised rail roader-mounted solution required for permanent and temporary retaining walls and piled foundations when working on the railroad; including the construction or repair of railroads, underway passages or platforms, when building piled foundations for electrical overhead lines or traffic signals and constructing noise reduction walls or installing gantry masts.

MOVAX way-of-piling is fast, efficient, accurate and safe - and especially suitable for areas with limited access, space or headroom such as when working underneath existing bridges and power lines.











## ROAD



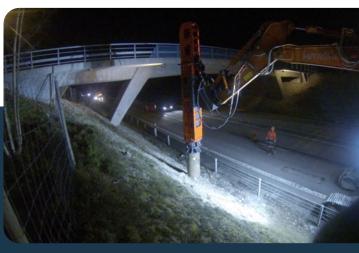
"MOVAX piling equipment is the optimum solution for Road construction, especially when working in areas where limited space, access and head room is available."

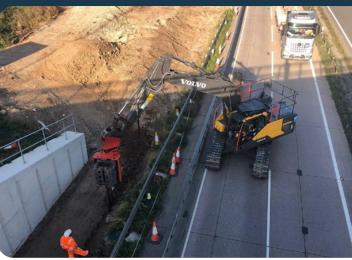


MOVAX piling equipment provides the fastest, most efficient, flexible and versatile excavator-mounted solution for permanent and temporary retaining walls, cofferdams and piled foundations when working on the road; including the repair or construction of roads, ramps and bridges and when constructing noise attenuation barriers.

The inherently safe, fast and efficient MOVAX way-of-piling means that the entire process can be managed and the work done efficiently without manual handling and/or assisting machinery – even in the tightest and most congested areas.

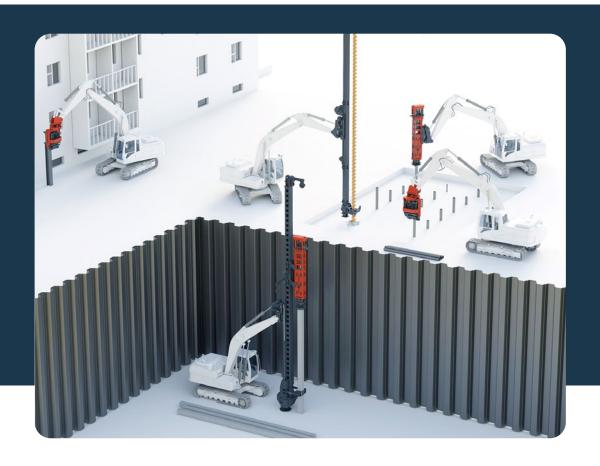








## CIVIL



"MOVAX piling equipment and customised solutions complemented with MOVAX information management solutions result in higher productivity and significant savings in wide range of piling & foundation work related to Civil construction."



MOVAX piling equipment and customised solutions provide the most versatile and productive solution for permanent and temporary retaining walls and piled foundations, and for the construction of cofferdams for civil construction work ranging from foundations of apartment houses and buildings, machines and various structures to the construction of basements and parking garages.

MOVAX information management solutions provide the tools for monitoring, reporting and verifying the piling work: for instance the depth, verticality and load bearing capacity of each individual pile and with the available connectivity to third party 3D-systems also the exact position.



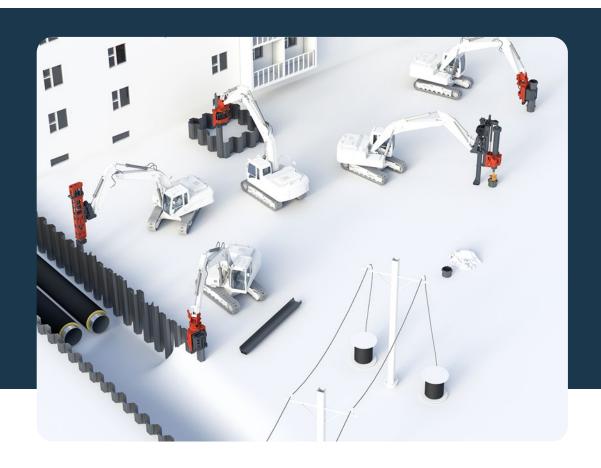








## UTILITIES



"MOVAX piling equipment and customised solutions ensure a fast and efficient piling and foundation installation when performing Utility work and various excavation and earth work."



MOVAX piling equipment and customised solutions provide a fast and productive excavator-mounted solution for a wide range of excavation- and earthwork, for the construction of permanent and temporary retaining walls, cofferdams and piled foundations when installing utilities such as natural gas, oil, drain, waste water & sewage, district heating or cooling or other pipelines and when installing electrical, optical and other type of cabling. MOVAX piling equipment is also utilised in the construction of water treatment plants and when installing storage or fuel tanks.











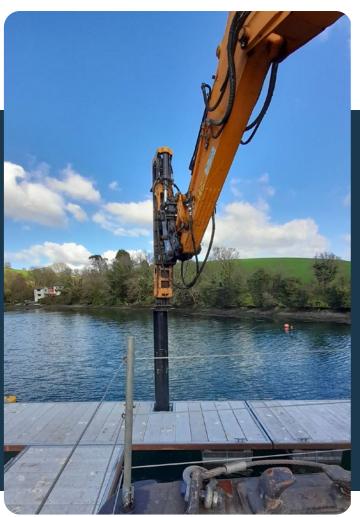
## PIERS & WATERWAYS



"The flexibility, versatility and the accessibility of MOVAX piling equipment provides the most efficient piling and foundation solution when working on Piers and close to Waterways."



MOVAX piling equipment provide a flexible and versatile excavator-, amphibious excavator- or amphibious multipurpose dredger-mounted solution for permanent and temporary retaining walls and piled foundations, and for the construction of cofferdams when working close to rivers, canals or the sea for the construction or repair of canals, piers or docks, when reinforcing canals or embankments and reclaiming the sea. MOVAX piling equipment provides quick and easy access to areas which are otherwise very difficult to reach.







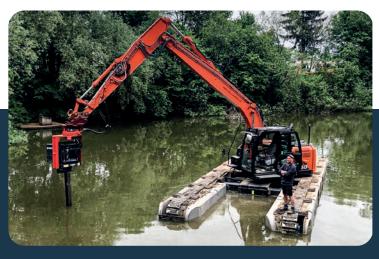
## **ENERGY & ENVIRONMENT**



"MOVAX piling equipment provides the optimum and overall most cost efficient solution for piling and foundation work for Energy & Environmental projects such as the construction of hydro-electric power plant and flood defense."



MOVAX piling equipment and customised solutions provide a fast and productive solution for permanent and temporary retaining walls, cofferdams and piled foundations when constructing hydro power plants or installing electrical power lines and when preventing flooding or erosion, stabilising riverbanks, building and renewing levees, building or replacing groynes on the sea shore; or when for instance removing contaminated soil.









#### THE KNOW-HOW

## GLOBALLY PROVEN

#### **EXPERIENCE**

With almost 30 years of experience and more than 2500 units delivered to more than 65 countries all over the world - and with a clear focus on the piling and foundation industry – MOVAX way-of-piling is a truly and globally proven solution for even the most demanding tasks.



#### **EXPERTISE**

#### Sites, soils & applications

Throughout the years MOVAX has gained a deep understanding and know-how of varying site and soil conditions ranging from the freezing cold of the arctic to the heat of the tropics - and of a wide range of applications from Rail, Road and Civil to Waterways & Piers, Utilities and Environmental & Energy.

#### Carriers

Movax Oy's expertise also covers all kinds of different types, brands and models of excavators and rail roaders from all over the world – both hydraulically and electronically controlled including the latest CAN bus control.





With more than 3000 deliveries to over 65 countries all over the world, Movax Oy is a truly proven supplier of innovative piling solutions.





HIGHER PRODUCTIVITY - SIGNIFICANT SAVINGS fast, efficient, versatile, accurate, safe, reliable.

Movax Ov

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