



▶ **SITE CLEAN-UP**
INDUSTRIAL SERVICES
WASTE DISPOSAL
SEWER SERVICES
SPILL MANAGEMENT AND RELATED TECHNOLOGY

Site Clean-up

Solutions with Ideas

LOBBE®

Tar and Sludge Site Clean-up



Outstanding Technique

In bringing its “vertical cutter” all the way to market readiness during the late 90s, Lobbe established a new method for the permanent solidification of substances with different consistencies. It provides a solution for the management and disposal of slurries, pitches and oil sludge, allowing quick remediation of landfills and other storage sites. Among known processes, Lobbe's invention is to this point the only one suited for use on-site and in-situ. Site clean-up projects using that method therefore stand out for their extremely high efficiency.

No. 1 in Tar Remediation

In contrast to conventional methods Lobbe works autonomously on site, without additional equipment and other peripheral machinery. This is decisive for example during the conditioning of tars



Patented Process

and pitches of different consistencies and origins. Lobbe today is considered the European market leader in this sector. It has conditioned and disposed of more than a million tonnes of tar. As far as possible, the reconditioned tars into are directly converted into energy.

Perfect Partner

The pool of knowledge that Lobbe has collected in the area of solidification since the late 90s is evidenced by the company's many references. Seasoned, conclusive and at all times transparent project management guarantees optimal

remediation, both in terms of time and money. This know-how, the individual solution concepts and the pure and applied science backgrounds have made Lobbe to a wellknown perfect partner for challenging remediation projects in Germany and beyond.

Overview of Most Important References (Germany)	Total Volume	Substance	Other residues
Terpe and Zerre Tar Pits	585,000 tonnes	Tar residues	Water, soil
Rositz Tar Dumpsite	265,000 tonnes	Tar residues	Water, soil
Magdeburg Gas Works	85,000 tonnes	Tar residues	Water, soil
Lauta Tar Pits	70,000 tonnes	Tar residues	Water, soil
Espenhain Tar Area	45,000 tonnes	Tar residues	Water
Tröbitz Dumpsite	35,000 tonnes	Oil and chemicals	Water
Brilon Dumpsite	25,000 tonnes	Slurry	Water



Water Purification

Groundwater remediation projects aim at either actively removing the contaminants or preventing the continued spread of contamination. A series of different processes have been successfully applied to this task in recent years, primarily on

abandoned contaminated sites and former military bases. In some cases significant kerosene, petroleum and diesel contamination was present in amounts magnitudes above 300,000 litres per damage case. For groundwater remedia-

tion projects, Lobbe assumes the complete project management, including necessary supplementary measures for groundwater lowering and continuous cycles of water influx.



Wide Spectrum

Ejector Pumps

Water pollution caused by any kind of contaminants with a density lower than water can be treated effectively by Ejector technologies. These special pneumatic pumps are particularly cost effective for continuous operation, even during use in explosive areas.

Ejector pumps are almost entirely maintenance free and are resistant to even the most aggressive substances. Moreover they separate contaminants emulsion free and are not damaged when run dry. Installation is possible for shafts with a diameter 50 mm and above.

Mopmatic Wringer

Mopmatic Wringers have proven their reliability in numerous long-term projects. The devices skim floating contaminants such as oil, kerosene,

diesel, heating oil, crude, etc from the water's surface. Contaminant recovery is emulsion free. Mopmatic units can be used either in a fixed position or portably and operate effectively in any kind of weather. A single Mopmatic Wringer can separate as much as 3,000 litres of pure contaminant per hour.

Separator for Low Density Liquids

This mobile container-based equipment can separate up to 90,000 litres of oil-water mixtures per hour. They are easily transported and quickly installed. The different densities of oil and water separate the two liquids via gravitation.

Stripping Units

Stripping units are highly effective purifiers. They are easily maintained and easy to operate. This brings significant benefits during the remediation process

for acute spills (petroleum or solvents) as well as during long-term remediation projects.

UV-Oxidation

In most cases UV oxidation guarantees decontamination of the contaminated water without any residues. The technique can be used for wastewater and process water as well as for leachate and ground-water contaminated by substances such as hydrocarbons, BTEX, phenols, tensides or cyanides.

Active Charcoal Filter

Active charcoal filters are always proportioned individually for the damage event. They absorb contaminants dissolved in the medium. Saturated charcoal is then either reconditioned or burned.



Soil Site Clean-up

On-site or off-site: Lobbe has the know-how and experience to remediate contaminated soils safely and properly. The priority is regaining a position in the resource economy. Cleaned soils are

generally suitable for problem-free utilisation in areas like road construction or for the re-cultivation of industrial or fallow land. The Site clean-up of contaminated soil has taken on an

increased importance, not least through acute environmental accidents. Three stationary soil site clean-up centres with annual capacities of nearly 300,000 tonnes form a solid basis for quick and



Innovative Technology

flexible reaction to the operative needs of civil authorities, police and fire departments. Lobbe has two classic facilities to receive soils contaminated by petroleum, kerosene, diesel or other mineral oils. Purification is conducted on a microbiological basis. A desorption treatment facility is available for soils particularly permeated by mercury and other heavy metals. A two-step process is used to distil out the contaminants, achieving a roughly 99 percent purity grade in the end.



The in-situ processes used by Lobbe for the removal of volatile solvents traditionally includes soil vapour extraction. Air wells are used if the contaminated soil is difficult to access and the ground cannot or should not be transported elsewhere

for external remediation, so long as the contaminants are positioned above the groundwater table. The required equipment components are installed completely on site, with direct links as needed to comfortable monitoring

facilities for online inspection and control. The contaminated air extracted during soil vapour extraction is usually then purified through catalytic reheating. The type and concentration of contaminant determines which technique is applied.



Contaminant Sanitation

Schools, universities, theatres, sports arenas, banks, administrative buildings, kindergartens, department stores, industrial enterprises: most of these have a long list of contaminants if they were built before the relevant contaminants were prohibited. However the year of construction alone is not the only reason

why sanitation measures become necessary. Technical consultants and environmental toxicologists are the experts who can assess such risk potentials, which may arise through ageing, the appearance of cracks, temperature fluctuations or accidental release. If buildings are converted,

modernised or gutted the old contaminants have to be removed.

Another challenge is the sanitation of buildings and industrial plants whilst these are still in use. A perfected project management ensures that the work can carry on undisturbed around the sani-



Safe Competence

Risk Contaminants in Buildings and Plants

Asbestos (carcinogenic natural mineral fibres)	incl. fireproof linings, ventilation ducts, sewage pipes; spray asbestos; asbestos cord; asbestos board	Sprayed asbestos forbidden since 1972; general ban on asbestos in 1993; EU since 2003.
Artificial Mineral Fibres (carcinogenic synthetic rock or glass wool)	incl. insulating material; thermal insulation on lines and plant components; boards for suspended ceilings	Mineral fibre products used before 1996 are generally classified as hazardous.
PCB (carcinogenic polychlorinated biphenyls)	incl. permanently elastic joint materials; fire-retardant varnishes and coatings; capacitors	Their use in Germany has been forbidden since 1984.
PAH (carcinogenic polycyclic aromatic hydrocarbons)	incl. adhesives containing tar, in particular parquet floor adhesive; damp-proof layers	Used in parquet floor adhesives up to around the end of the 1970ies.
Moulds (allergenic, infectious, toxic fungal attack)	incl. through the effect of moisture; pipe breaks; moisture damage caused by a lack of ventilation	

tation activities. Top quality service is indispensable in such cases: prudence and reliability, expert knowledge and experience, seriousness and discretion are taken for granted as part of the standard.

Successful projects from former years underline our competent handling of this sensitive topic as do large-scale projects from the recent past. These have proven that experience in administrative, technical and

organisational fields guarantee a smooth accomplishment of complex projects.



Site Restoration

For a time, the term "restoration" used in this context tended to refer to environmental restoration of former military lands. In recent years, however, public

funding has also been applied toward the restoration of abandoned industrial grounds into new commercial and residential zones, or for sports facilities.

This both protects existing natural settings and slows the trend of new development of lands that had been accelerating in recent years.



Complete Project Management

Services

Lobbe invests in all required services for take-over, remediation, preparation of land for building and marketing of abandoned industrial and military sites, including the design of objective strategies (“use-dependent site clean-up of abandoned contamination sites” or “load-dependent utilisation”).

Particularly in heavily populated metropolitan areas with few available commercial/residential areas or mixed-use zones, this process can be very promising for communities and rural districts or private building promoters and real estate firms.

Site conversion projects reflect Lobbe's entire operative service spectrum. That

includes soil and water remediation and necessary purification and/or demolition measures for old industrial plants, as well as the removal of any residues, chemicals and other substances that are still extant. Lobbe can also implement immediate measures in situations with acute hazards.

Efficient Concepts

Yet in spite of many successful examples of land restoration, many of these sites remain fallow. One factor is a lack of public financial funding for Site clean-

up. Pure real estate speculators shy away from the risks associated with acquiring and remediating “questionable sites”. Lobbe is filling that gap through holistic project concepts that guarantee

efficient land restoration of abandoned sites and a variety of qualified services from one source, including financing and marketing concepts.



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