



Lanes
Group plc

Best Practice Series:

Production and Manufacturing



Why production and manufacturing?



The production and manufacturing industry in the UK covers a wide range of business types and sizes,

from SMEs to multinational corporations with multiple sites and locations. Markets range from food, motor vehicles and metal fabrication, to rubber and plastic, electronics, pharmaceuticals, paper, furniture, chemicals, machinery, textiles and many, many more - the list is long and varied.

Despite a relative decline in manufacturing over the years, it still accounts for 44% of all our exports and the UK is currently the eighth largest industrial nation (themanufacturer.com). This is big business involving big numbers: according to the Office of National Statistics (ONS), the value of UK manufacturers' product sales in 2018 was over £390 billion. Of that figure, food production was the largest sector contributing £71.8 billion (18.4%) of the total. The manufacturing sector also directly employs 2.6 million people in the UK.

Production and manufacturing plants will be as many and varied as the companies that operate in them. So, when it comes to drainage for instance, whilst they may have certain issues in common, there is no 'one-size fits all' solution. Whatever the extent and nature of the operation though, all organisations will still have to manage and maintain their assets according to their own needs, requirements and current legislation. Where processes involve hazardous materials and waste, COMAH regulations may apply, whilst other businesses may be tied in to ISO14001 standards. It is worth noting that 'drainage' here refers to all surface water, foul waste and process effluent pipework.

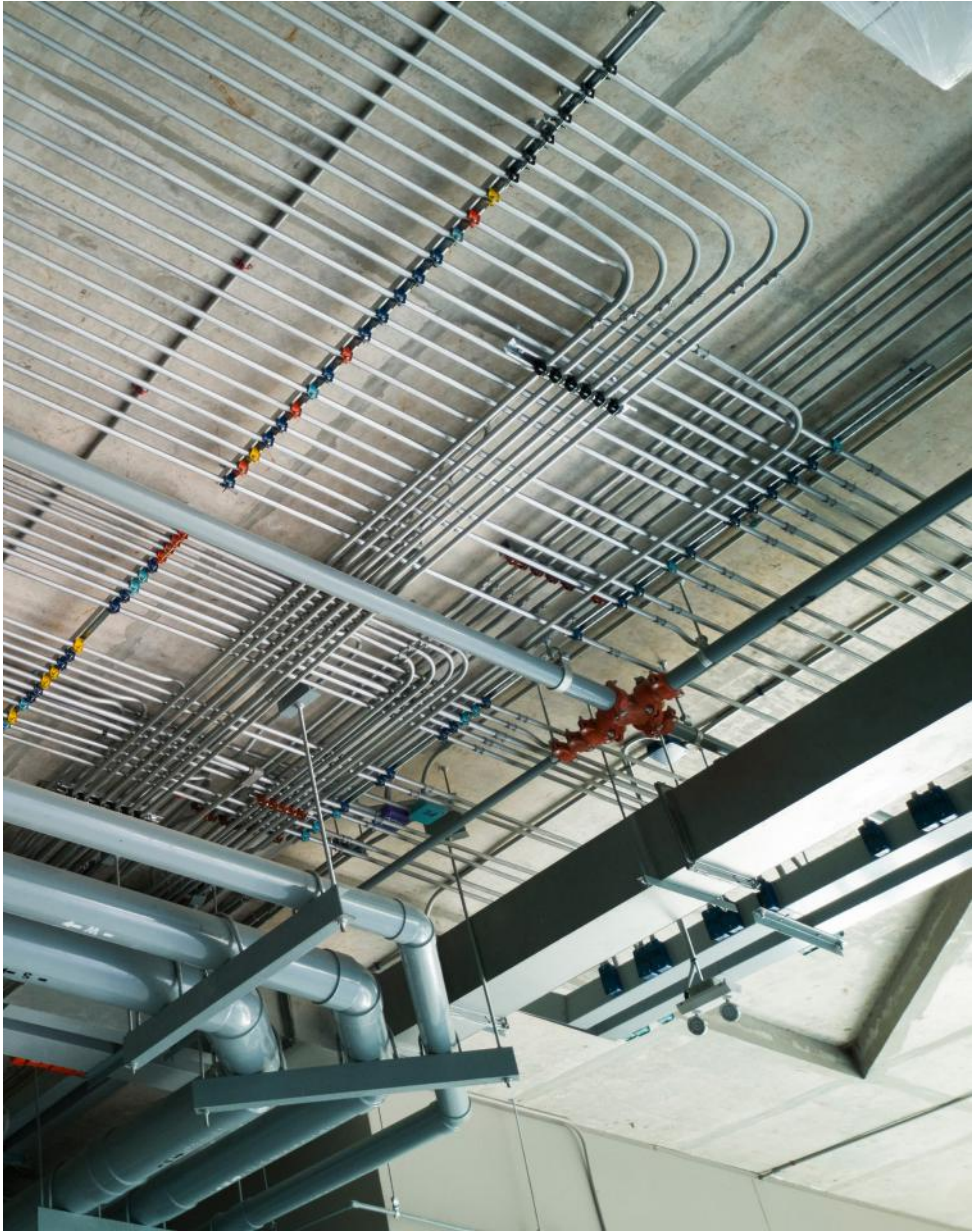
Acknowledging the massive variation of business types in the industry as a whole, this guide offers general best practice advice for controlling and maintaining drainage assets and for meeting environmental obligations, whatever the size or structure of an operation.

Knowing where drains are located and their condition is the most basic starting point. From there, it is a matter of establishing a regular maintenance programme to keep them in good operating condition, and having the documentation and audit trail to prove it.

Organisations may outsource drainage management to an FM partner, who will, in turn, sub-contract to a drainage specialist (like Lanes). Others may work directly with the drainage contractor. Either way, ensure that your operator has the specialist knowledge, range of services, and resources to meet the exact needs of your operation.

Look for breadth of services on offer, add-ons (such as tankering for waste disposal of production effluent), flexibility, good investment in plant and people, reputation and longevity. They are all good indicators of a drainage contractor you can rely on, and one that will tailor its products to match your requirements.

Essential Drainage Services



How you manage drains will depend on a number of factors, but should involve the following, where relevant. Each area is examined separately below.

A) Planned Maintenance

B) Reactive or Emergency Maintenance

C) Asset Maintenance through CAPEX

D) Extra Services: Waste Disposal Tanker Fleet

A) Planned Maintenance

Usually funded from the maintenance budget, a PPM (pre-planned maintenance) agreement is the best way to make sure drainage systems stay in good working order.

A PPM is good housekeeping and will cover all drain types, eg:

Surface water: PPM involves annual (or other frequency) visits by your drainage partner to cleanse and de-silt all surface water pipes, channels and gullies. Wet weather and seasonal changes (such as heavy rain, melting snow, leaf fall, etc) may require more regular checking, emptying and cleaning. Any resultant waste must, of course, be removed and disposed of according to regulations.

Interceptors: Regular maintenance of interceptors (also known as drain separators) prevents fuel and other contaminants from polluting natural watercourses.

This is particularly relevant for operations with heavy transport activity on site, with movement of lorries and other vehicles on (usually concrete) loading and unloading areas. Extreme weather or increased seasonal activity may cause interceptors to fill up more quickly, so they may need to be emptied and cleaned more often. A professional contractor will provide additional checks in between standard PPM visits. Advanced interceptor monitoring hardware may be advisable in certain cases: your drainage partner will advise.

Process / foul waste: For process effluent and foul waste pipes, the frequency of PPM visits will be dictated by the production activity: the higher the risk, the higher the maintenance regularity. For instance, the generation of fat and grease as a by-product of food production may mean monthly, or even weekly visits, to clean and empty pipes, tanks and silos. Your drainage contractor should be flexible enough to accommodate all this.

What to look for in a PPM contractor

- **Flexibility:** schedules to suit you, with out of hours or shutdown working where appropriate.
- **Standards:** stringent health and safety to protect your staff, property and the operatives themselves.
- **A to Z:** a complete range of services from one contractor.
- **Resources:** trained people, proven experience and investment in technology.
- **Legal backing:** a registered waste operator's licence, for instance.
- **Reputation:** what other people say is a good indicator of what to expect.

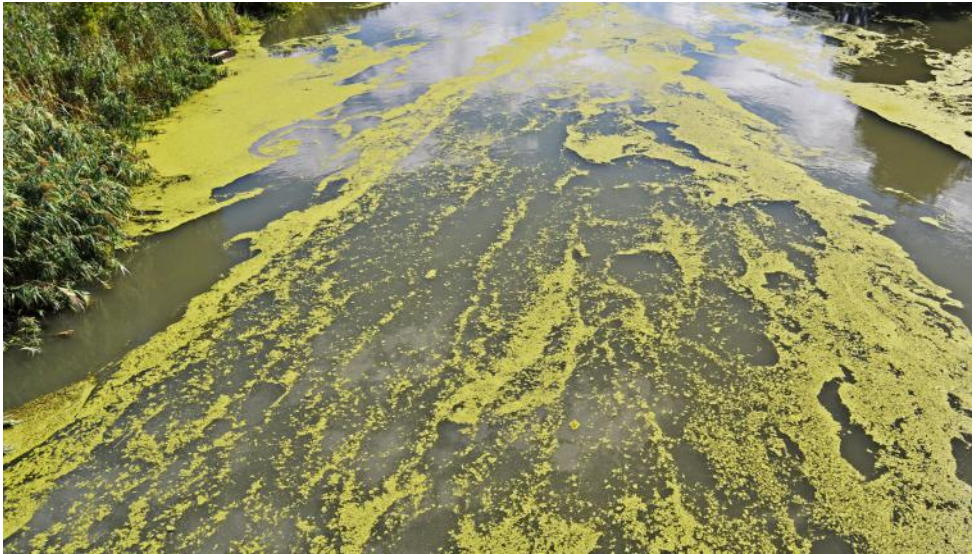
B) Reactive or Emergency Service



For organisations without a PPM in place, there is a higher likelihood of a drainage emergency occurring, so it is prudent to know who to call if it does happen. A drain emergency may threaten staff or public health and safety, cause an environmental pollution incident and/or affect your production schedule.

What causes an emergency?

Drainage emergencies such as blockages, leaks, floods, and spills from surface drains or foul/process effluent waste pipes may be caused by extreme weather; pollution spillages; blockages thanks to debris, silt build up, root ingress; or pipe collapse. Any of the above may affect your business adversely, physically, logistically or legally.



What to look for in a reactive drainage specialist

- True 24/7, 365-day service
- Fast response to emergency call outs
- National operation (if you have multiple sites)
- Efficient call centre with people who know their stuff
- Appropriate people, plant and technology
- Ability to identify and fix (temporarily if necessary) the problem
- Clean up and reinstatement as standard
- Registered waste disposal operator licence
- Engineers who will not leave until you have a functioning system
- Recommendations for remedial works if require

C) Asset Maintenance through CAPEX



This is all about the big picture and takes the longer-term view of an operation's drainage needs. A strategy for asset maintenance strategy will contribute to your environmental compliance through COMAH and ISO14001.

Any asset strategy should start with an initial assessment, in the form of a systematic CCTV drainage survey. This provides the basic drainage geography and knowledge for anyone working on the site and drainage, now and in the future. In case of any drainage issues, it helps to know where drains run and ultimately end up. It also establishes the current state of the pipes and identifies any which require attention or replacement.

A drainage strategy for the future

Setting up a three- or five-year drainage asset strategy involves prioritising remedial or renewal work according to seriousness, risk, production schedules and budgetary constraints.

From the initial CCTV survey, your drainage specialist should produce a full report with recommendations. This will feature remedial work according to a grading system, so that pressing issues are addressed first.

If the report shows damaged or partially collapsed pipes, do not despair. Sewer and drain replacement does not necessarily require extensive excavation. Pipes may be rehabilitated using no-dig technology, more quickly and cost-effectively, and with much less disruption to your business.

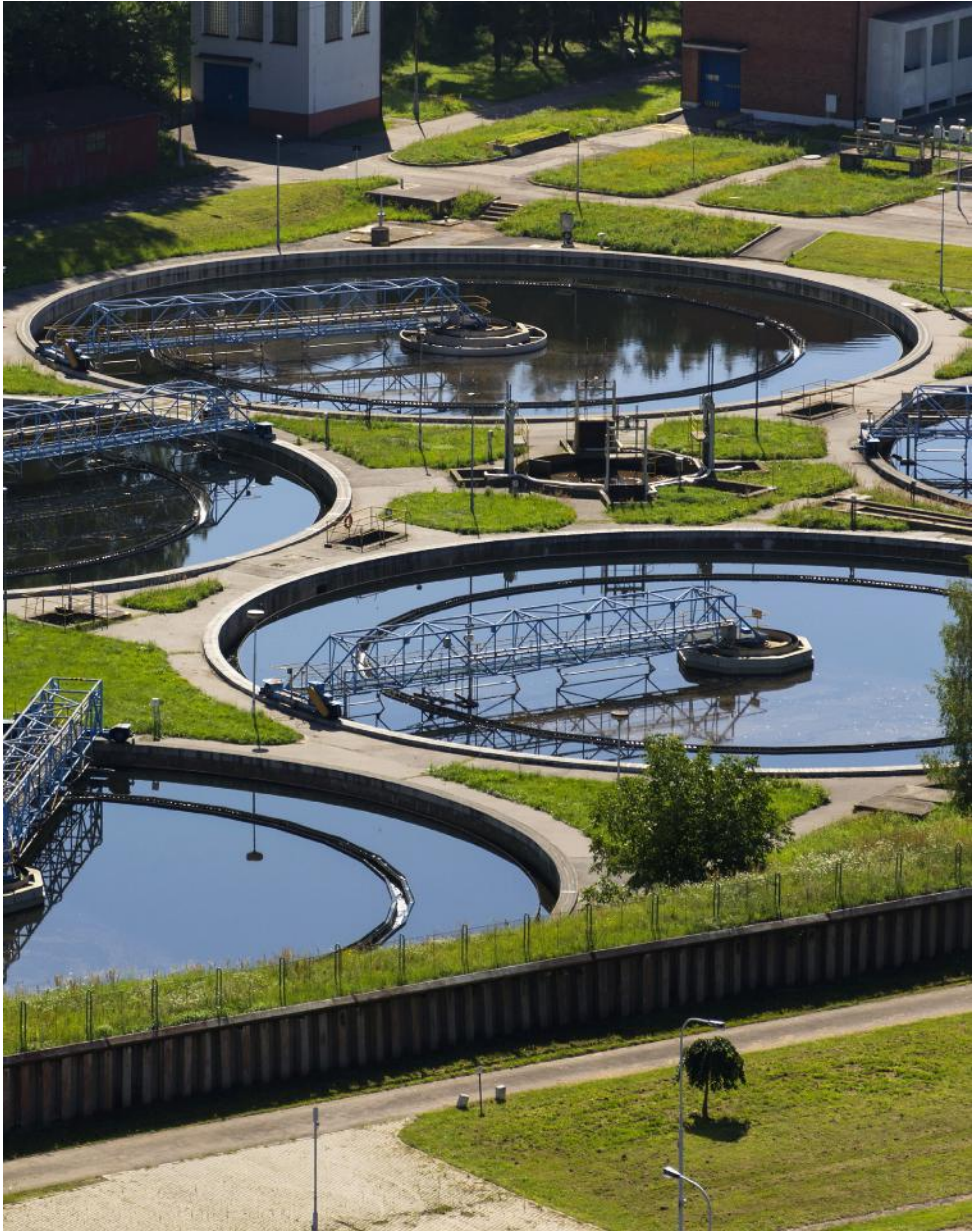
By relining existing drains, the integrity of damaged, cracked or semi-collapsed pipework can be restored without excessive trench-digging and disruption to the local area. Known as CIPP (cured in place pipe), it involves installing a liner inside the underground pipe, from manhole to manhole — hence the term 'no-dig'. And, with a range of cure techniques and lining materials, there are solutions suitable for specialist plants involving food and beverage production, chemicals, and others.

A full asset strategy will ultimately prioritise and schedule work over a given period of time (3- or 5-years, for instance). Remedial or renewal projects can be allocated to capital expenditure (CAPEX) budgets in ways designed to optimise the financial impact on the company, whilst still meeting EMS compliance. Work is planned to minimise site disruption, keep your workforce safe, protect the environment and ensure your operation benefits from a fully functioning drainage infrastructure — particularly crucial if your business follows COMAH regulations, is already ISO 14001 accredited, or is working towards it.

What to look for in an asset management partner

- CCTV surveys carried out by sophisticated, remotely-controlled equipment, such as robotic crawler cameras. These are driven through the pipe network whilst recording high-definition video.
- Measurements and positional data providing an accurate map of the infrastructure
- Surveys carried out to suit you: in one pass, or in phases across larger sites
- Existing site drainage plans updated and / or transferred to CAD drawings
- Full report with recommendations and costs for any repairs
- Repairs graded so that the most serious (eg environmental risk) are prioritised, whilst others are scheduled appropriately for CAPEX purposes
- Project management skills to operate the strategy on your behalf to agreed timescales and budgets

D) Extra Services: Waste Disposal Tanker Fleet



Production and manufacturing

operations often require professional tankering and waste disposal services for the removal of process effluent and other liquid waste from site. This is a specialist solution not always offered by standard drainage contractors, but it is an essential one.

Not disposing of production waste to meet your legal obligations can result in serious financial penalties, not to mention serious harm to the environment. And there are many court cases to prove the point. When a paint stripping company in the Midlands, for instance, was found guilty of dumping illegal chemicals into the sewers, it had to pay nearly £8000 in fines and costs. The implications of such behaviour may cause sewage treatment works to be shut down, inconveniencing other users in the area; contaminated sludge having to go to landfill instead of for agricultural use; pollution to the environment, and increased risk of health and safety issues for the public and wildlife.

Using a professional waste disposal service is the only way. It means that a responsible and registered waste management contractor will collect your hazardous and non-hazardous liquid waste, sludge and slurry from all devices — including septic tanks, petrol interceptors, drains, sewers, gullies, production silos / storage tanks — and take it to reputable and certified sites. The contractor will also provide all relevant documentation for your audit trail.

(Note: As a long time, registered waste disposal operator, Lanes has invested substantially in a fleet of advanced tankers to carry out regular and ad hoc collection and disposal for clients across the UK. The tankering division was created to meet growing customer demand. Ask for details.)

What to look for in a waste disposal contractor:

- Capacity to manage the required volume of waste
- Adequate resources (tankers and drivers)
- Flexibility to work within your production needs
- Registered waste handling licence
- Access to the registered waste disposal site network
- Network of depots across the country (for national operations)
- Ability to accommodate one-off jobs or intensive contract operations

Luxfer Mel

Luxfer Mel Technologies is a leading developer and producer of highly engineered zirconium and magnesium materials. At its Manchester plant, it relies on its drainage partner Lanes to carry out reactive, planned maintenance (through a PPM agreement), and asset management through which scheduled CAPEX work continues on a monthly basis.

Kelloggs

The famous Kelloggs brand first appeared in Manchester in 1938 in the form of a brand new, \$2million factory. Its UK head office relocated to the North from London, the same year. Kelloggs' drainage partner Lanes manages an ongoing PPM agreement at the plant, which includes weekly flume (chimney) cleaning, as well as regular surface water checks and de-silting, etc. Kelloggs also uses Lanes for 24/7 reactive services if required.

Tulip Foods

Tulip, one of the UK's largest meat processing plants, chose Lanes to support a £8 million renovation programme involving a change of layout to the butchering and packaging areas, the installation of a new ventilation system and enhanced hygiene segregation.

A jet vac tanker and CCTV drainage survey team from Lanes' Manchester depot spent 12 weekends over four-months cleaning and surveying the drainage system at the 2.6-hectare site. The company wanted the precise location of all drainage pipes before drilling into concrete floors.

Tulip now has a fully-updated site drainage map to help plan any future site developments. The cleaning and CCTV survey programme incorporated all wastewater pipework on site, including surface water drains and gullies, production effluent pipes, and foul drains.

BAe

When a major flood threatened to cause £millions of damage at BAe's Wharton site, Lanes discovered that a flap valve had become blocked with building materials. Without a confined space permit in place at the time, the crew managed to release the valve from ground level and release the flow through the system. After the incident, Lanes CCTV surveyed and cleaned that section of the network.

In another flooding incident at BAe Samlesbury, Lanes' jet vac team pumped 140 tonnes of floodwater and set up a 6" water pump. Within 6 hours, all floodwater was rerouted and the cause — a defective float in the filtration system — identified. Engineers then fixed and re-installed the float to get the site back up and running without further delay.

ABN

Lanes supported an asset management project to re-lay 1200 square metres of concrete slab at ABN's animal feed processing plant in Bury St Edmunds, Suffolk. Drain rehabilitation teams installed patch repairs (short liners) in surface and foul water drains to increase structural integrity, negating the need for excavation and allowing plant operations to continue unhindered. Traffic management and strict H&S procedures ensured works were carried out safely.

Bevisol

Lanes has a three-year contract with beverage manufacturer Bevisol to remove drinks production effluent for anaerobic digestion. A dedicated driver makes up to five journeys a day in a 30,000-litre tanker to collect waste water, created during cider production at the Herefordshire plant, and take it to Severn Trent Water's treatment plant. Bevisol Projects Manager Tim Powell said: "Lanes is doing a fantastic job for us with a very efficient and high quality service."

Legislation Summary

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COMAH (Control of Major Accident Hazards) Regulations apply to anywhere that stores or handles large quantities of chemicals or hazardous substances, including production facilities, warehouses, and some distributors. Where dangerous substances are used or stored at the site in certain quantities, operators are required to take all measures necessary to prevent major accidents and limit the consequences for human health and the environment.

ISO 14001 aims to reduce waste and minimise pollution created by a business's operations. You must show that you are ready and able to act to prevent or limit environmental impact in an emergency. For this you must have site drainage plan in place and mark all drains on site with drain labels. A good drainage partner will help with all of this.



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