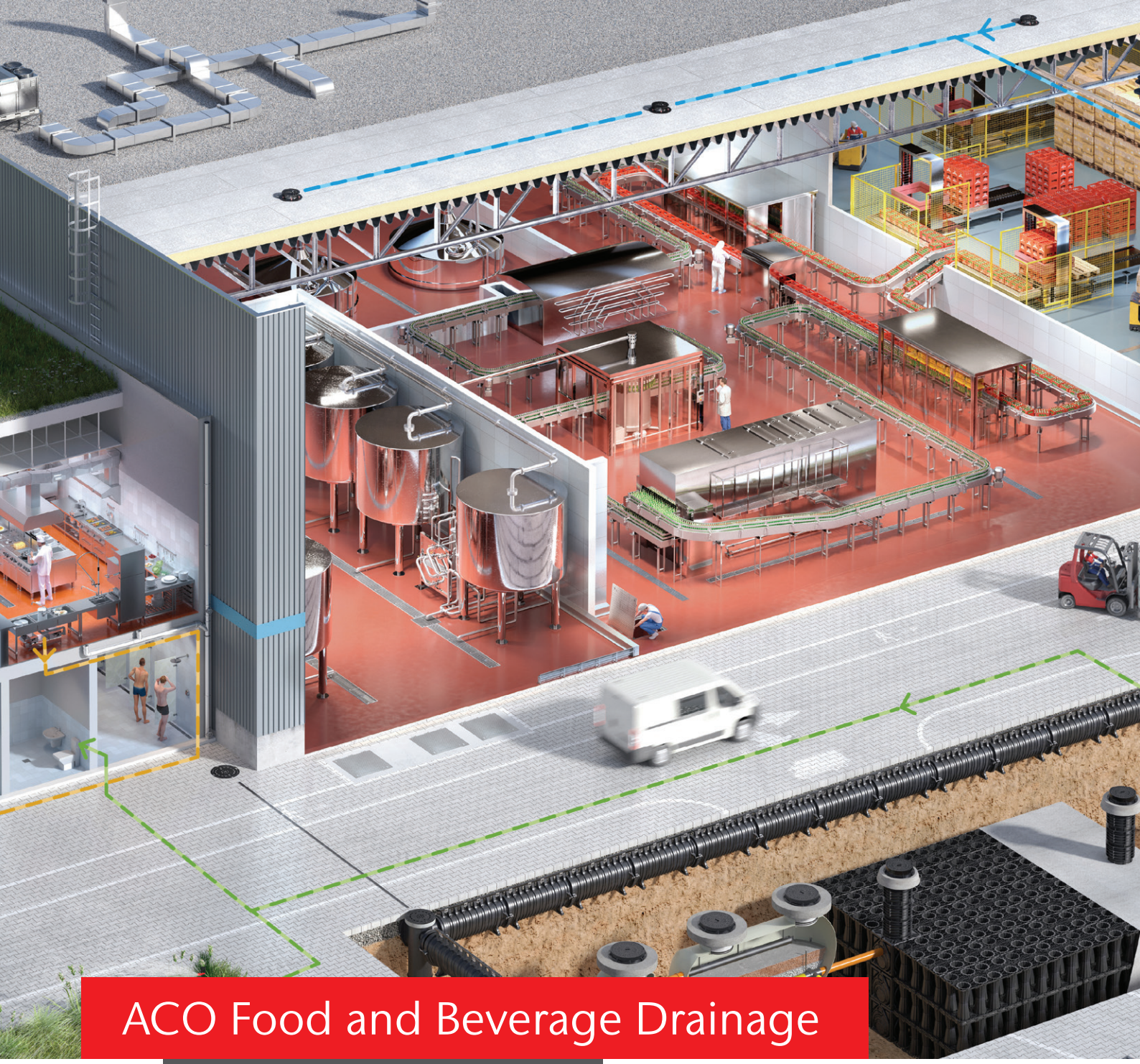


ACO Food and Beverage Drainage

Drainage design and advice to optimise production plant hygiene

Product Catalogue

ACO service offering for food and beverage production

Why is it so important to find the right company to partner with in the food and beverage sector?

Because our solutions tackle the food and beverage industry's biggest concerns:

- Reducing the risk of product contamination
- Optimizing cleaning costs
- Minimising shut downs and maintenance

We incorporate hygienic design principles in all that we do as we recognise within this essential approach your business must run to maximum capacity and efficiency.

Our focus on hygienic performance sits alongside our aim to care for water. The systems and services we provide are designed to help you optimise sustainability around your production facilities.





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ACO. we care for water

ACO is a Water-Tech company that protects water. Building on our global drainage expertise that protects people from water, we increasingly see our mission as also protecting water from people.

With the ACO WaterCycle, ACO provides systems that collect and channel, clean, retain and ultimately reuse water. In this way, ACO contributes to the preservation of clean groundwater as a vital resource, and makes a contribution to tomorrow's world. In its Agenda 2030, the UN global community set the improvement of water quality as one of 17 sustainable development goals.

Intelligent drainage systems from ACO increasingly use smart technology to ensure that rainwater and wastewater are drained, or temporarily stored. With innovative separation and filter technology, we prevent water contamination by pollutants such as fat and grease, fuels, heavy metals and microplastics.

Today, ACO goes one step further: we accept the challenge of reusing water, and thus establishing a resource-saving cycle. For all products and systems, ACO attaches great importance to durability, reusability and a low carbon footprint. The pursuit of sustainability is an ongoing process that we strive to meet every day.

The ACO Group is a global family business that is one of the world market leaders in the Water-Tech segment. Founded in Schleswig-Holstein in 1946, it operates as a transnational network in over 50 countries. Worldwide, ACO is characterised by a high level of decentralised ownership, and explicit regional market proximity.

www.aco.com



Holder
Iver and Hans-Julius Ahlmann



Headquarters of the ACO Group
in Rendsburg/Büdelsdorf



5,200

employees in more than 47 countries (Europe, North and South America, Asia, Australia, Africa)

1 Billion

Euro Sales in 2021

37

production sites in 18 countries





ACO Academy
for practical training

ACO Food and Beverages Services

A COMPREHENSIVE AND DETAILED APPROACH TO ALL PROJECTS

ACO provides its customers with a range of design and installation support services to help food and beverage manufacturers benefit from effective and durable drainage systems.

We evaluate current drainage performance as well as helping you with the specification of drainage and accessories in new facilities. We ensure drainage systems comply with current or planned equipment and traffic within the operation, and assess any other possible risks. In a single report we can supply risk assessments, corrective measures and an action plan for your consideration.

ACO drainage and separation systems are designed around the most important topics facing the food and drinks industry: sustainability, food safety, cost management and health & safety. We design our products to drain processed wastewater hygienically, economically and ecologically, exceeding the high standards established by the European Hygienic Engineering and Design Group (EHEDG).





Specification and design

Learn more about the support we can provide to food and beverage producers to help develop production facilities through our specification and design services (see page 9).

Premium support services

We are able to offer premium services to the Food and Beverage production sector. Our experts are available to help you assess your current and upcoming projects to ensure you get the optimal drainage system for your needs. Our team can also be on hand as needed to supervise project drainage installations to ensure on site hygiene is maximised (see page 15).





How to progress a fully hygienic design

ACO'S STEP-BY-STEP SERVICE

ACO offers a complete drainage design service for Food & Beverage Manufacturers.
Our services are:

STEP 1 – Specification

- Good design starts with understanding the materials available, their performance and how they can be optimised for maximum effect at best value to the customer. Taking time to work with the ACO specification team can ensure we join all the dots from the beginning, throughout the whole project offering you a single point warranty.

STEP 2 – Design and Calculations

- In house design teams then carry out design work on your behalf, from CAD layouts through to hydraulic calculations and part scheduling to ensure water is managed on your site in a hygienic and sustainable way.

STEP 3 – Drainage System Assessment

- Experts from our European competence centre can provide a complete report of your existing drainage systems, measure its impact on potential risks within processing areas and make recommendations.

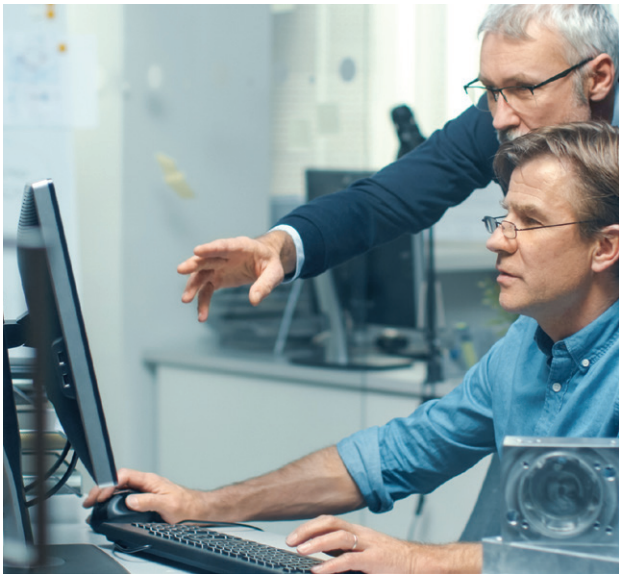
STEP 4 – Providing Materials

- Having carried out the specification & design the next step is to provide quality materials either from stock or manufactured especially for your project, to the highest standards.

STEP 5 – Project Supervision

- Experts from our European competence centre can also aid your preferred contractor by returning to offer project supervision. We check levels, component connections, quality of finishing and provide peace of mind to our clients.

Step 1: Specification



Our expert specification team can help you specify the most sustainable, integrated drainage systems constructed from the most appropriate materials, which are designed to protect your food and beverage business, the environment and ultimately public health.

Our aim is to constantly improve every aspect of safety, hygiene and functional performance while maintaining best value. A full specification pack will be produced and all supporting documentation such as data sheets etc. available will be issued.

ACO hygienic drainage fulfils stringent hygienic requirements to prevent harmful bacterial contamination. We develop our channels according to the relevant design principles for food contact surfaces BS EN 1672, BS EN ISO 14159 and EHEDG.

Step 2: Design and Calculations

Great design comes when specifiers work hand in hand in partnership with manufacturers understanding all the options currently available to them. Product solutions can either be found from our vast catalogue of tested products or manufactured as a completely bespoke solution.

The ACO Building Drainage Design Team are experts in designing the ideal solution for your new building, from the roof, through the internal production areas, to the external logistics space. Better investment planning prevents potential defects of drainage systems in the future.

Our team can carry out design work on your behalf, ranging from channel layouts through to hydraulic calculations and part scheduling. This is to ensure flow rates are at the required levels and hygienic performance and channel loading can be optimised to meet your production needs.

Drainage is a critical part of every construction project, both large and small, with this infrastructure providing the vital arteries through which water can be managed safely, effectively and sustainably. An effective system is crucial to eliminate the risk of flooding and health issues that can present significant risk to people and property.

Each production facility has its own unique set of drainage needs and it is these critical factors that must be considered when planning drainage systems, to minimise construction costs, while simultaneously optimising the aesthetics, functionality and long-term reliability of drainage units.



Indeed, whether you're involved in designing or building a new project or upgrading an existing factory, every aspect of the system must be carefully planned to meet the correct drainage requirements simply, quickly and within budget.

At ACO we design high performance drainage systems that meet the specific needs of food and beverage production facilities. We will make sure that every aspect of your drainage project meets the highest standards including the provision of BIM files for specification.

Step 3: Drainage System Assessment (ACO DSA)

ACO can provide a detailed evaluation of the existing drainage system and surrounding environment including production and service technologies and its impact on potential risks within food processing plants.

This evaluation also covers risks arising from drainage integration, floor and wall quality. All of this is then fed back to the client with recommendations for problematic areas. Helping you plan for the future and achieve best value for any new building works.

The opinions of our expert team, the views of the client, local experience and industry best practice are considered when identifying current and potential risks. Any issues found are processed by means of ACO's applications and a Corrective Action Plan is released to minimise all risks, develop more effective maintenance schedules and, if required, propose future investments to the client.



Data Collection

ACO's team undertake a holistic evaluation of the drainage system and relevant factory infrastructure. In preparation for this, we ask customers to provide key information and data in advance, including details of the plant and equipment layout, the information technology employed, the floor structure and operational data.

Data analysis

Collected data is evaluated in ACO's DSA system for review by our team of hygienic engineering and design experts. This team analyses the information and then evaluates the drainage systems' performance against the key performance criteria required by your facility. They then compile a list of key recommendations. These recommendations are presented to and evaluated with the customer's team against its own production processes and local requirements.



Findings evaluation

A team of hygienic engineering and design experts identify key risk points within the drainage system and compile a list of recommendations to address these issues and optimise hygienic performance.

The DSA identifies drainage issues found and describes their impact on production from the point of view of:

- Hygiene
- Safety (employee health & safety and product safety risks)
- Operations (operational continuity risks)

Final reports

Comprehensive reports will highlight key issues and potential actions as agreed with the client. ACO will provide a corrective action plan as agreed with the customer.

The ACO drainage system assessment is currently the only drainage specific assessment tool on the market.

Data security is very important to ACO. All information gathered during the DSA is entered into the ACO DSA application and is stored on a secured server with restricted access from outside. The ACO DSA application enables easy data collection and evaluation.

There are two versions:

- A mobile application for iOS
- A server based application



Feedback from our customers

“ In the beginning I was sceptical about the benefit of the DSA service, but now I see that we have a problem and we have to introduce the actions you are proposing. ”

Head of yoghurt production plant (Belgium)

“ Thank you very much for your very detailed and independent analysis (DSA). We will use it as a base to solve issues in our plant. ”

Crisis Manager – Brewery (Netherlands)



“ You are right. The investment we are currently planning will not make any sense. It will be waste of money. We will do it according to your proposal.

We are really surprised how detailed your analysis is, we were not expecting that. Could you please assess another hall in our plant? ”

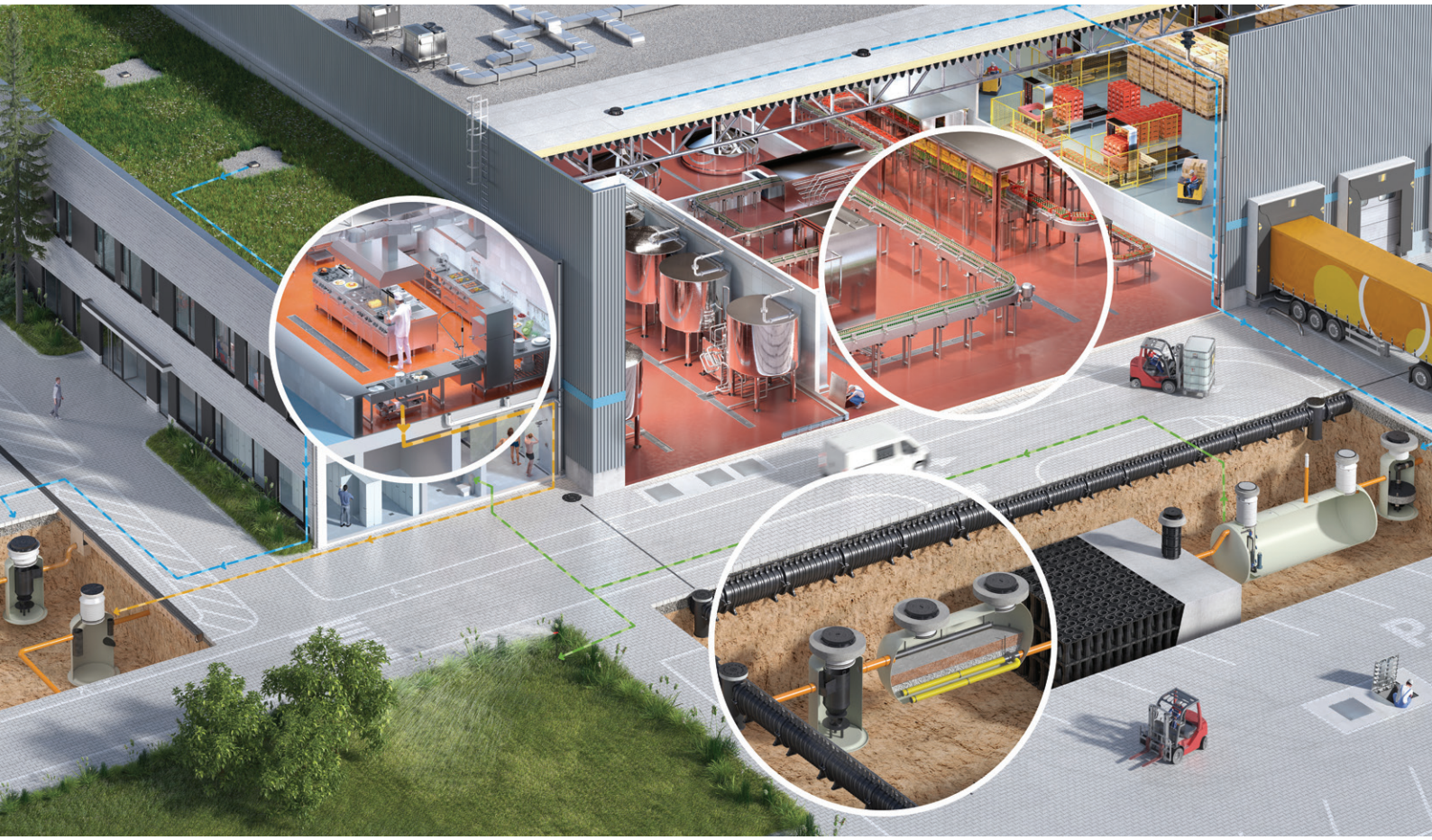
Quality Manager – Ice cream production plant (Italy)

“ It was a very good experience and good opportunity to share knowledge and good practices about correct drainage design, hygiene standards and possible improvements.

We think this assessment is very helpful to see the general drainage situation. The visual presentation of data after the assessment (maps per area with risk indication) was very useful. It‘s easy to share with managers.

What we found also very good is that people who did the drain evaluation were specialists in areas so we could discuss topics directly during assessment. ”

Quality Manager – Danone (Belgium)



Step 4: Providing materials

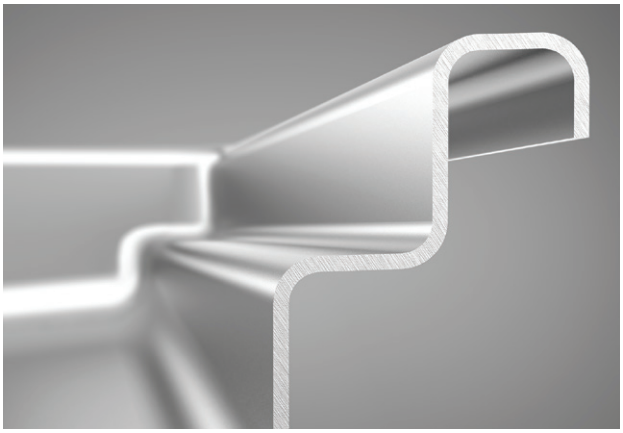
Having specified and designed the ACO materials it is now time to provide the required products to site without delay.

Every project has a timescale, however we recognise that time is of the essence within each production facility and having materials readily available from stock and a vast array available from our manufacturing facility is vital to the success of the works.

Any stocked materials can be on site in under five working days from order and we work with all the major merchant and distribution parties in the UK.

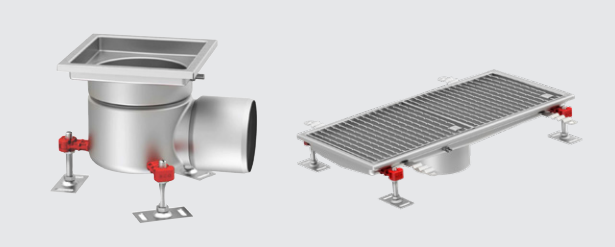
We can provide you with:

- Hygienic Drainage channels and gullies
- High capacity gullies and stainless steel pipes
- Shower channels for employee changing rooms
- Channels, gullies and grease separators for employee canteen
- Attenuation systems for green/blue roofs on your factory
- Separators for managing Fats oils and grease
- Oil separators to manage surface water in logistic areas
- Attenuation for logistics area



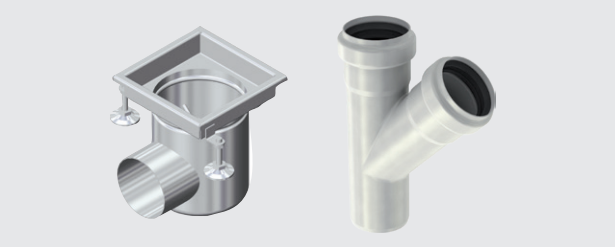


Providing materials and technology in your factory



HygieneFirst drainage channels and gullies

Designed in accordance with the best practice design principles of the European Hygienic Engineering & Design Group (EHEDG) and ACO's HygieneFirst philosophy, our HygieneFirst channels and gullies delivers the optimum in hygienic performance.



High capacity gullies and stainless steel pipe

We have added new higher capacity gullies (gully 315 and gully 440) to our range to cater for greater flow requirements to handle flows of up to 35l/s. ACO Pipe provides a hygienic solution that is quick and easy to install and is more resilient to thermal and dynamic shocks than cast iron or plastic pipes.



Shower channels for employee changing rooms

ACO has a range of shower channels and gullies that are characterised by modern design, optimal functionality and a high flow capacity. Our team can help you specify the right products with the right flow rates for the shower layout within your employee facilities.



Channels, gullies and grease traps for employee canteen

To help maintain the hygienic performance throughout your production facility ACO has a range of stainless steel channels and gullies to help optimise the drainage performance of your on-site canteen. To help manage the Fats Oils and Grease (FOG) produced from the canteen ACO has a range of grease traps and recovery units that can be installed under sink to suit the facilities and the number of meals produced on a daily basis.

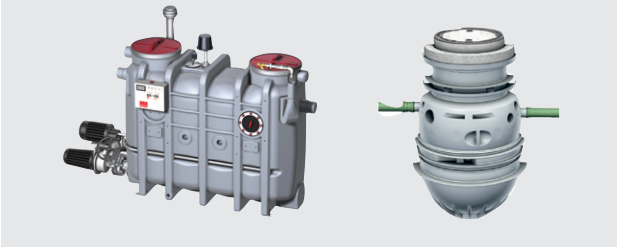


Materials and technology available for your factory



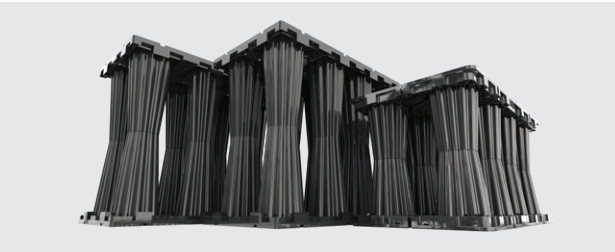
Attenuation systems for green/blue roofs

ACO RoofBloxx is a complete roof attenuation system for blue, green and blue/green roofs. Our patented system enables engineers to create a blue or green roof drainage layer that gives specifiers the design flexibility required to create imaginative, multi-functional open green spaces at roof or podium level and enable the effective management of surface water across your site.



Separators for fats, oils and grease and starch

ACO grease separators are designed to efficiently separate fats, oils and grease from waste water. Delivering optimum durability ACO grease separators are manufactured, tested and certified in accordance with BS EN 1825. They are ideal for food factories handling food that is cooked, fried or high in oil content. Starch separators are available to help with processing potato products.



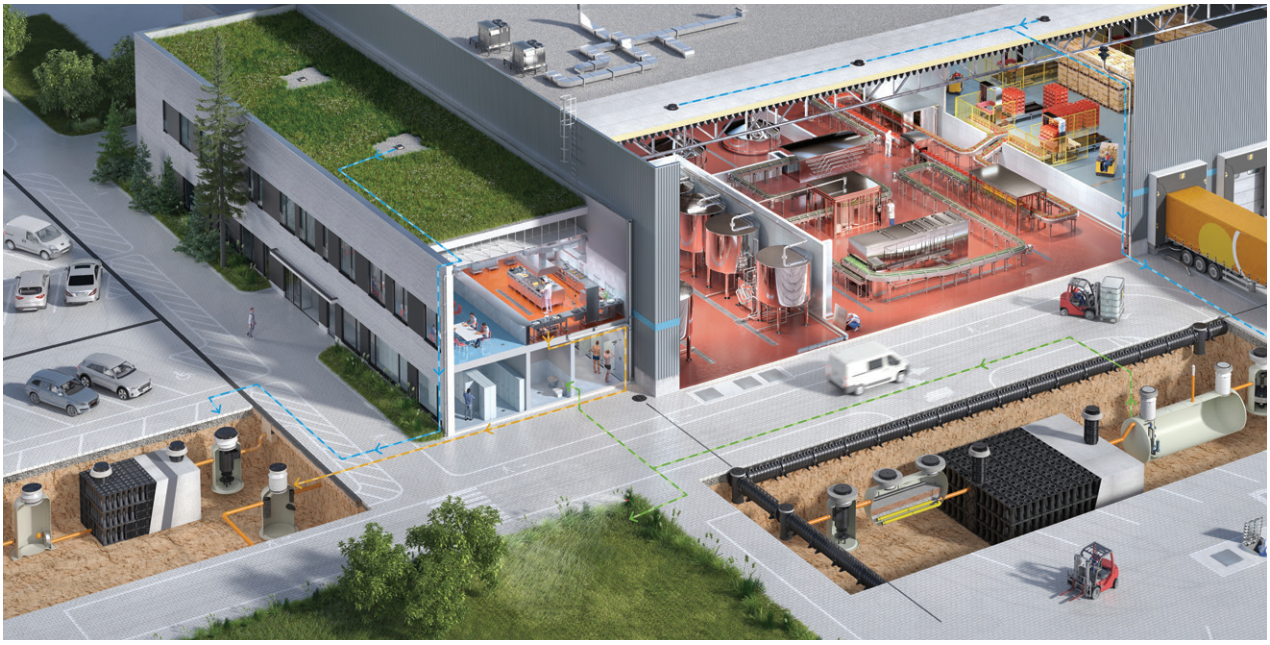
Attenuation for your logistics area

ACO StormBrixx is a unique and patented plastic geocellular stormwater management system for attenuation and soakaway (infiltration) usage. Its versatile design allows the system to be used in configurations and applications across all construction environments as a standalone solution or as part of an integrated sustainable urban drainage (SuDS) scheme.



Oil separators to manage surface water run off

ACO Q-Ceptor oil separators are an innovative range of bypass and full retention separators. These high performance systems are fully compliant with BS EN 858:2002 parts 1 & 2 and exceed the requirements of the Environment Agency's PPG 3 guidelines. Available in a range of chamber sizes and flow rates Q-Ceptor is ideal for the treatment of surface water in car parks, maintenance areas, and industrial applications.





Step 5: Project Supervision

Our drainage experts from the global ACO Group competence centre can be on-hand throughout the installation of your drainage system to provide guidance and best practice advice.

We provide project supervision to ensure the design of your drainage system is effectively translated into reality on site. Our supervision service is provided by the same team delivering our Drainage System Assessments (DSAs).

- From the time we deliver to site, our team can be on hand to check all necessary components are available for installation to be carried out.
- Our experts do a site audit to check all the levels are correct and the pop ups are suitable for the project design.
- To maximise quality assurance our team can then be on hand to observe and advise on correct installation to prevent any products being compromised. Using their expertise they can help solve on-site issues that may arise to ensure an optimal finish to the drainage project.
- The correct installation of drainage systems is key to trouble-free operations, a long service life and, above all, hygienic safety.
- This service can be delivered by members of the ACO team for any new build project or upgrade of production facilities in a food and drink manufacturing/ processing facility.



Professional Development and Training

ACO has recognised that knowledge transfer is fundamental in keeping up-to-date with the latest advancements in surface water management and has a unique training offer that can be accessed online, in-house or at the state-of-art training facility at the ACO Academy.



In Company & Webinars

ACO offers face-to-face professional development sessions. These are carefully designed to last up to 1 hour, so they can be undertaken across a lunch break. A member of our team will contact you directly to discuss your requirements and will tailor the session to meet your needs.

ACO has developed a series of webinars that will keep you up to date, bringing you technical expertise as well as more specific product information. Whatever your involvement from specification to installation, there will be a webinar to meet your needs and further your learning.



ACO Academy Days

ACO's training facility at its UK head office in Bedfordshire has a theatre-style facility that can hold up to 50 people as well as a number of breakout rooms for small groups.

Professional development training can be combined with more in-depth product training at the on-site learning zone.

www.aco.co.uk/professional_development | email: ukprofessionaldevelopment@aco.co.uk



Case Studies

ACO has operated in the UK for over 30 years and in this time we have worked on ground breaking projects that have pushed the boundaries of surface water management. Our case studies provide bite sized information that counts towards your professional development and can provide inspiration for future projects.

www.aco.co.uk/case-studies



Colab

Colab is a collaboration of partnerships, bringing together CPD and self-certified content to ensure that knowledge is shared and accessible to the construction industry. Visit our content and CPD partner website: Colab to see more professional development content from partners such as ACO, FutureBuild, CIHT, The Edge, and CIWEM.

www.colab-cpd.co.uk

ACO Academy

Professional Development

COMPREHENSIVE LEARNING PROGRAMMES TO SUPPORT YOUR CONTINUING PROFESSIONAL DEVELOPMENT

Building drainage has a critical role to play in the creation of functional commercial construction where the systems, products and technologies available are continuously evolving.

We recognise that knowledge transfer is fundamental in keeping up-to-date with these latest advancements and have developed a unique online professional development and training offering for industry professionals.

With a range of CPDs available, we can work with you to develop a programme which is tailored to your teams requirements.



Hygienic Design for the Food and Drinks Industry

This presentation explains the critical impact hygienically designed drainage has on factory hygiene, educates participants about EHEDG's principles of hygienic design and talks about the operational and cost benefits for food and drinks manufacturers.



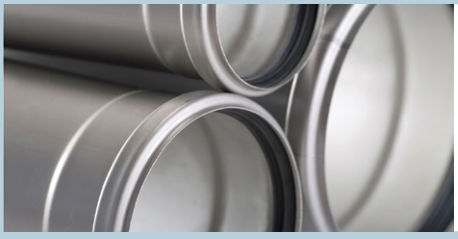
Effective Grease Management

Aimed at kitchen designers and consultants, contractors and commercial kitchen operators, this webinar explains the problems caused by fats, oils and grease (FOG), provides expert specification guidance for different grease management solutions and highlights industry best practice



Blue Roof Drainage Design

This presentation will explain the role of Blue Roofs in the creation of sustainable urban environments and cover key design considerations.



Stainless Steel Pipe Systems

Aimed at engineers, architects and other specifiers, this presentation covers the science behind pipe and drainage specification, gives an overview of current legislation and standards, and explains how the specification process is adapting to meet changes in the built environment.



Design Requirements for Commercial Drainage

This presentation provides a comprehensive briefing on the key criteria to consider when specifying commercial drainage. Topics covered include materials, load considerations, hydraulic capacities and location specific criteria.

To book a session today or to speak to us about a CPD programme for your team, please contact **ukprofessionaldevelopment@aco.co.uk**

Sustainability

Playing our part

ACO recognise that sustainability is the single most important issue that the construction industry will face over the coming years. Our research and development programme aims to maximise the use of sustainable material but, importantly, also strives to improve manufacturing and administrative processes that impact our environment.

Responsible sourcing

ACO have developed a programme of continual improvement which seeks to ensure, where practical, all products manufactured are made from sustainable materials – recycled and recyclable.

The company has a programme of residues, ensuring that all packaging, palletising and office residues are segregated and managed in an ecologically sustainable manner.

Supply Chain Sustainability School (SCSS)

ACO have achieved gold level status with the Supply Chain Sustainability School (SCSS) through ACO staff using hundreds of educational resources and group training sessions. ACO have also engaged with board and special interest SCSS group meetings, implemented learning pathways into ACO's Sustainability Committee structure and induction process, and share knowledge and experience with other members.

Sustainable drainage systems (SuDS)

Sustainable Drainage Systems (SuDS) aim to control surface rainfall run-off by controlling the rate and volume of runoff from your site, relieving pressure on sewerage systems and mimicking natural drainage as closely as possible. Used effectively, SuDS can help developers deliver greener infrastructure.

We have unrivalled experience in designing, creating and advising on fully-integrated and sustainable surface water management systems. Whatever your requirements, we can help you deliver an effective solution and support you with best practice, relevant information and dedicated resources on an ongoing basis.

ACO believes that the best SuDS will be cost effective to operate and provide efficient drainage throughout their life. Rather than being inherently 'soft' or 'hard', they will instead include an optimized and integral mix of 'soft' and 'hard' components that will combine to bring out the best in each other.



askACO

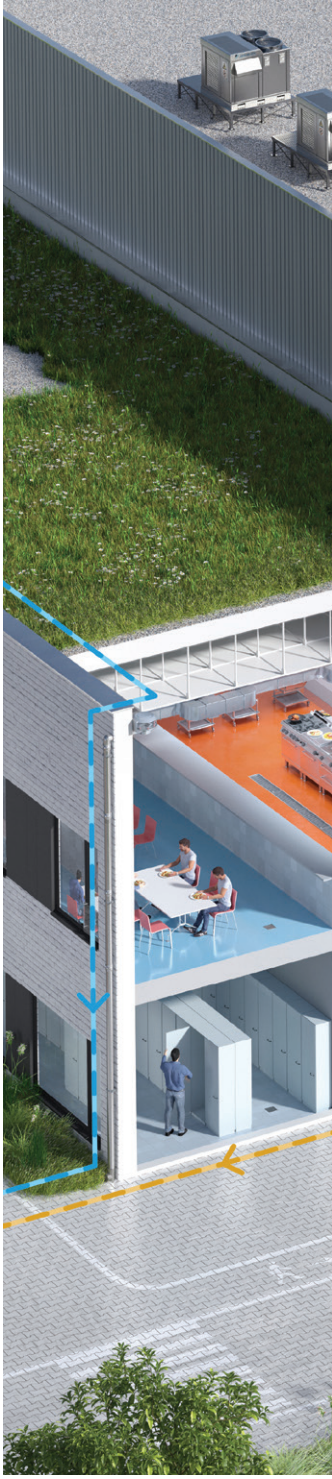
train | design | support | care



Every product from ACO Building Drainage supports the ACO WaterCycle



- ACO Water Management
  Civils + Infrastructure
  Building + Landscape
- ACO Building Drainage
- ACO Access
- ACO Sport
- ACO Wildlife



ACO Building Drainage

A division of ACO Technologies plc

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www.aco.co.uk/aco-building-drainage

ACO. we care for water

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