

Drainage Systems for Gardening, Landscaping and Sports Centre Construction





Dear Reader,

Climate change always challenges us to come up with innovative solutions in response to new environmental influences.

ACO adopts an integrated approach and focuses on professional drainage, efficient cleaning and the controlled drainage or reuse of water. High functioning drainage of surfaces play an important role in these areas and combined with attractive design will fulfil future requirements. The variety and quality of the product range reliably solve everyday tasks, as well as challenges provided by larger projects. Regardless of the size of project, from open spaces, path routes and Olympic stadiums to a private house – ACO can verify quality in every detail.



GaLaBau 2018

gardening. landscaping.
greendesign.



A. Sievers

Anja Sievers
landscape architect
(Dipl.-Landschaftsarchitektin)
and ACO Product Manager

Title Page:
Promenade in Mölnenort
BHF Bendfeldt Herrmann Franke
Landschaftsarchitekten GmbH
Please also read the article
on Page 14/15





80

No sinking in with

GRAVEL STABILISATION



Sensible

TREE PROTECTION

38

Inhalt

Drainage | External facilities and recreational areas 06

ACO DRAIN® channels with various gratings: Multiline Seal in	08
Reinforced channel body – directly for working in: Multiline HD Seal in	10
Freedom of design with beautiful gratings: Drainlock grating	12
From practical experience: Promenade Möltenort	14
Creativity in landscape architecture: Cast iron grating Freestyle	16
Lighting effects on paths and squares: Eyeleds, Light point, Sideline	18
Surfaces and wells: Slotted frames	20
Parking space drainage: Multiline Seal in/HD Seal in,	
road gully Combipoint PP with attachments, KerbDrain	24
One single component for increased load-bearing absorption: Monoblock PD	28
Excellent linear drainage made easy: XtraDrain	30
Large shoe scrapers: Vario, clean linear gratings	32
Individual manhole covers: with city coat of arms or company logo	34
Point drainage for green areas and yards: Yard drain Pointlock	36
Systems for tree protection: Tree gratings and tree protection grating	38

Drainage | Everything for round the house 40

Property and garage access roads: ACO Self® drainage in	
modular construction system, Multiline Seal in	42
Yard drainage and water extraction point: XtraPoint, yard drain	46
Shoe scraper for outdoor and indoor areas: Vario	48
More than just a light shaft cover: Vario Design light shaft cover	
and design gratings	50

Drainage | Roof and façades 52

Facades, balconies and roof gardens: facade channels	
Profiline, flat roof gullies and attachments for green roofs	54
Perfectly adaptable to every level: Profiline and Profiline X	56

Drainage | Sport facilities 60

ACO SPORT®	
Draining running tracks and playing fields	62
Draining stadiums and grandstands	64
Draining all weather areas and fun sports facilities	66

Drainage | Rainwater management 68

Rainwater management is our task for the future	70
Sustainable use of water resources: Sedimentation and filter systems	72
Retaining and storage in the infiltration ditch: Stormbrixx	74
Economy and ecology – a win-win combination	76
Rainwater seeps away on site: Gravel stabilisation, honeycomb grass paver	80
Reuse up to 50 % of drinking water: Rain4me	82

ACO Architects and Planners Day	84
Kunstwerk Carlshütte	86
ACO Group	88
ACO Materials	90

ask ACO

Can anyone help me further? The ACO service chain at a glance	92
Contact to the companies of the ACO Group	94

Drainage

EXTERNAL FACILITIES AND RECREATIONAL AREAS





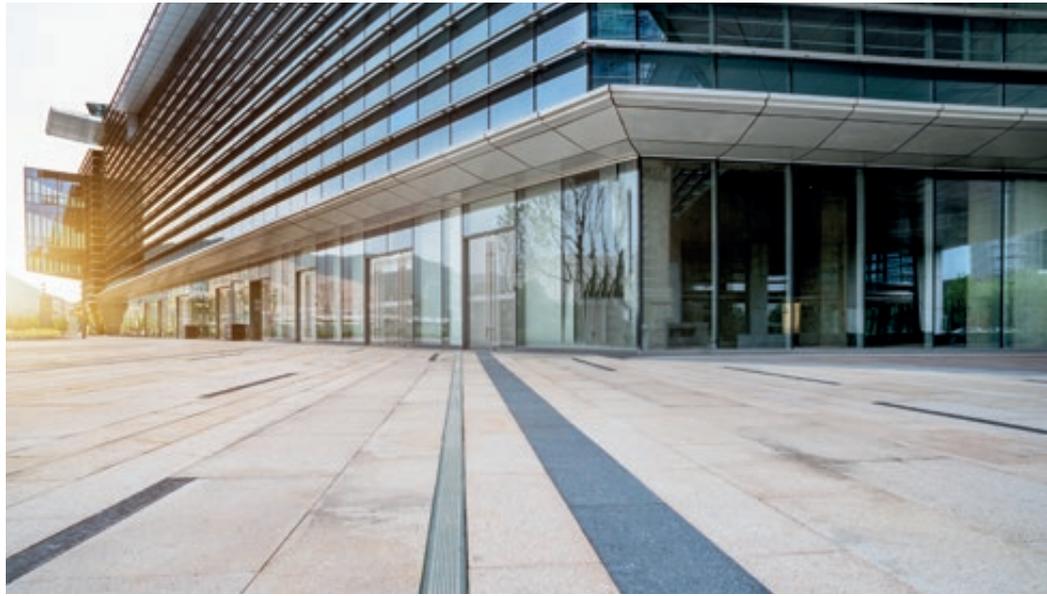


The Microgrip grating not only has a special appearance, but also makes a major contribution to safety on residential areas thanks to its anti-slip surface structure.



BEAUTIFUL ENTRANCE AREAS





Channels with a variety of gratings

To keep access paths free from water, appealing and individualised drainage systems are required.

The ACO DRAIN® Multiline determines the development history for linear drainage with strong innovations such as the Seal in technology.

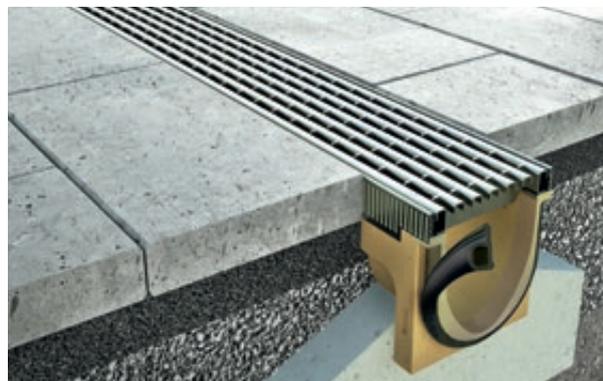
Watertight drainage; to ensure that the collected surface water is completely routed away, the ACO DRAIN® Multiline Seal in and the HD Seal in, which you can find on the next page, are equipped as standard with an EPDM seal on the

channel joint. Building structures and groundwater are permanently protected.

The ACO Multiline Seal in System can be used in a variety of applications. It provides reliable solutions both in inner-city areas as well as out of town. You can see suitable grids on Page 12/13.



Seal in
TECHNOLOGY

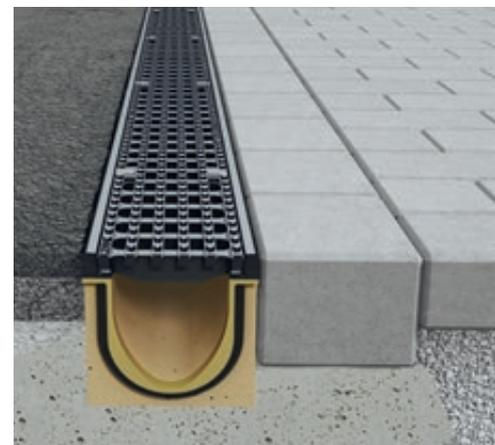


ACO DRAIN® Multiline Seal in
galvanised or stainless steel grate and rail options

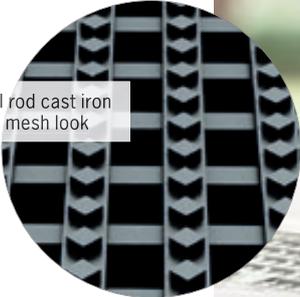




**THE STRENGTH FOR
GALABAU**



Simplified installation:
ACO DRAIN® Multiline HD Seal in with cast frame



Longitudinal rod cast iron grating with mesh look



Reinforced channel body – simplified installation

Boulevards represent free surface spaces in an urban context. They serve as a meeting and communication point. Rain water must be routed off in a functional and visually appealing way.

The ACO DRAIN® Multiline HD Sealin system contains a reinforced channel construction with a 12 mm cast iron edge and can therefore be laid without a concrete haunch in heavy load areas up to load class D 400. A runner block is placed directly on the cast frame.

The Multiline HD with the Sealin Technology also sets the standard in open space design. With longitudinal profile gratings in stainless steel or cast iron gratings in longitudinal bar, appearance enables you to open up new possibilities.



Cast iron gratings in longitudinal rod appearance, but also all other cover gratings (Page 12 et seq.) from the Multiline Sealin range provide imaginative possibilities in the design of open spaces.



The Ray longitudinal rod cast iron grating



DESIGN ALONG THE LINE



German
Design Award
NOMINEE 2015



reddot design award
winner 2015

The Drainlock grating with longitudinal profile is available in stainless steel and galvanized steel. It has received many awards for outstanding design quality.



A wide range of Drainlock gratings in many designs, colours and materials, provides creative scope for individual planning and design.



Screwless
grating stop
Drainlock



Longitudinal profile grating
Slip-resistant structure



Longitudinal bar grating
Non-skid 6-mm
slotwidth



Mesh grating Q+
Larger intake cross
section



Ray longitudinal rod grating
Cast iron



Freedom of design with beautiful gratings

The ACO DRAIN® Multiline Seal in drainage system's Drainlock gratings in cast iron, stainless steel, galvanised steel or plastic fulfil architectural requirements for aesthetics, functionality and load-bearing capacity. The mesh profile, longitudinal profile and longitudinal rod gratings fulfil all the requirements for sophisticated design and increased safety with regard to functionality. All covers are equipped with the Drainlock screwless grating stop.

The slotted frames (Page 20–23) and the unmistakable grating designs of the Free-style covers (Page 16/17) create additional design possibilities.

askACO The complete range can be found in the grating configurator, which makes it possible to select covers according to optical criteria in different scenarios. Technical information can be downloaded or saved in the object file.

www.draindesign.de



Ladder grating
Galvanised steel
Stainless steel
Cast iron



Composite grating with Microgrip
Plastic



Crosswise rod grating
Stainless steel



Perforated grating
Galvanised steel
Stainless steel



Ladder grating, Heelguard
Cast iron



Longitudinal rod grating, mesh look
Cast iron

Promenade Möltenort

The new business card of the Baltic seaside resort

Schleswig-Holstein: Just in time for the tropical summer of 2018, the redesigned Promenade on Möltenort beach was completed. Open public areas between the art corner shop and the sea view beach is now being enjoyed by sun-enthusiast tourists who appreciate the aesthetic and modern look.



New sand-coloured concrete pavement, natural stone wall, benches and drainage



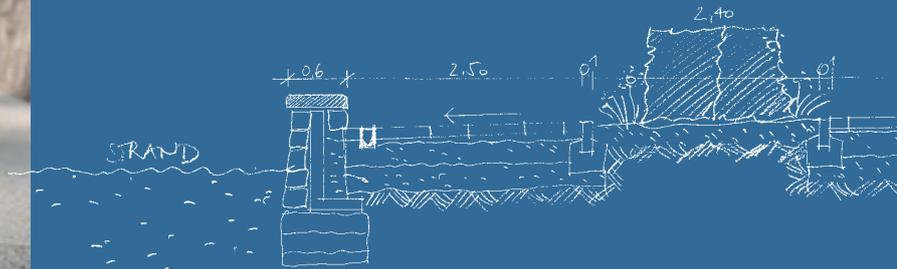
Square manhole covers fit into the concrete blocks





Cast iron gratings in Ray design

Planning/tendering/construction management:
 BHF Bendfeldt Herrmann Franke
 Landschaftsarchitekten GmbH
 bhf-ki.de
 Costs: approx. € 1,300.000
 Completion: 7 July 2018



Idea sketch
 Landscape architect Jens Bendfeldt

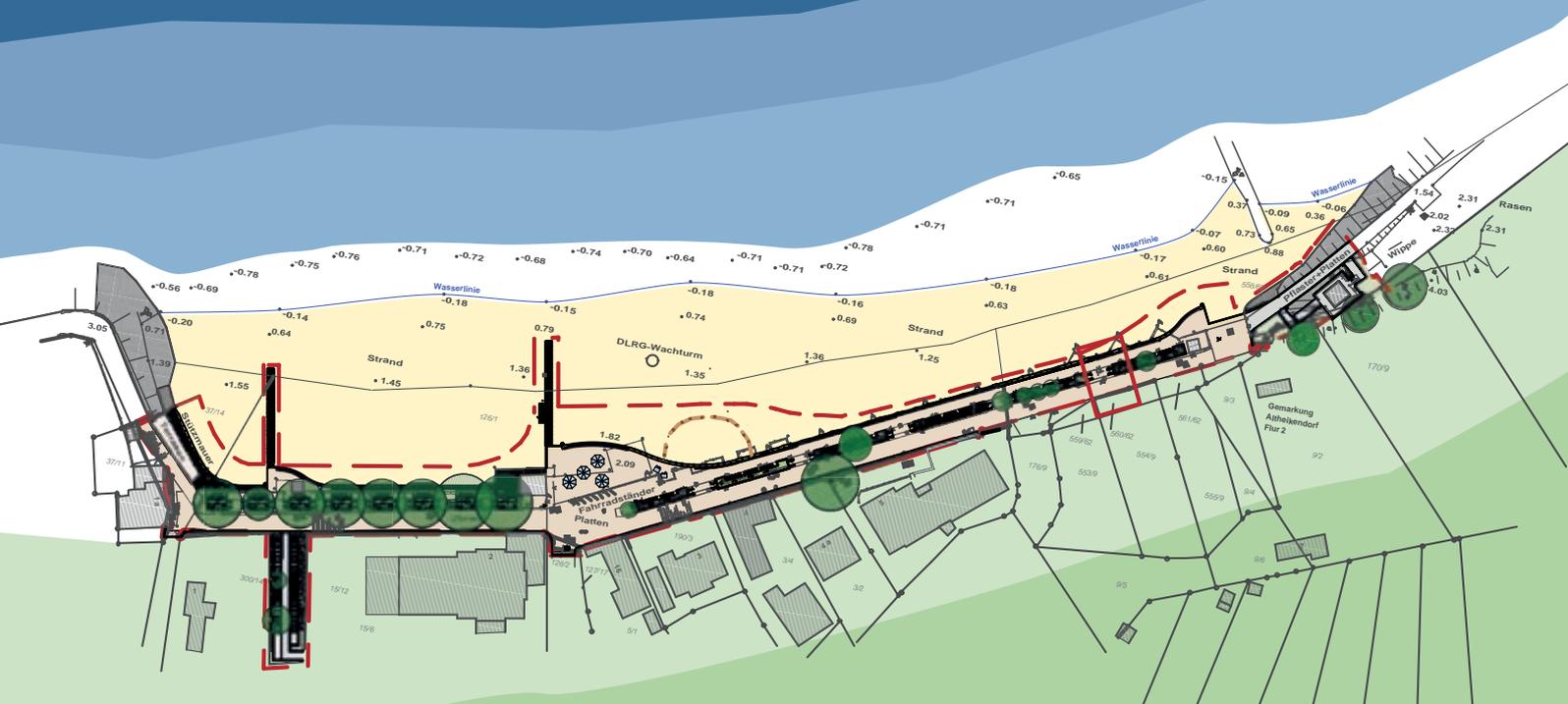
Visitors to the newly designed promenade in Moltenort in the summer of 2018 needed a bit of luck to secure a space on this highly popular beach. The thermometer showed temperatures between 25 and 30 °C for weeks on end, so that the beach and the promenade were populated by hundreds of guests every day. Moltenort lies on the east side of the Kieler Förde between Laboe and Heikendorf and is bathed by the sun until the evening hours. This is the great attraction to the promenade which has more residential use, and has been upgraded by the current redesign.

The promenade is bordered on the lake side by a low undulating quarry stone wall with a 12 cm thick granite slab covering. On this approx. 250 m long seating wall with integrated wooden cushions, visitors and seamen have the best view of the international shipping traffic of the fjord and of the entrance to the locks of the Kiel Canal (NOK), the most frequented artificial waterway in the world.

The centre of the approximately 9 m wide promenade forms the new multifunctional space, which provides sufficient space for events. Directly next to it is a central children's play area on the beach, which invites young and old to climb and play with a stranded wooden ship.

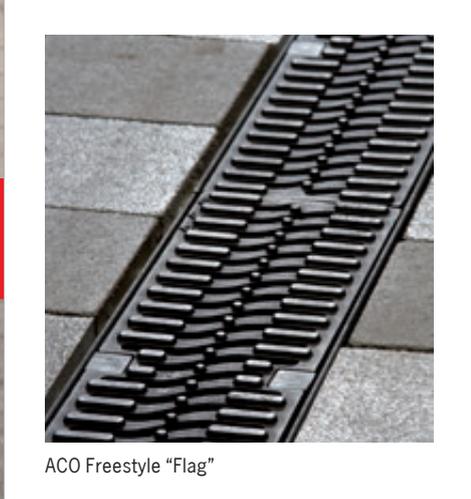
The promenade was built with a sandy-beige concrete block by Metten Stein+Design (60/40/12 and 40/40/12 cm) and is paved to continue the beach optically. The promenade is drained via an ACO DRAIN® Multiline line drainage system running parallel to the seat wall with Sealin cast iron cover gratings.

Numerous benches in the northern part invite one to linger. The southern section of the promenade has a new white wooden pavilion which was erected under existing trees.





UNIQUE DESIGN



ACO Freestyle "Flag"

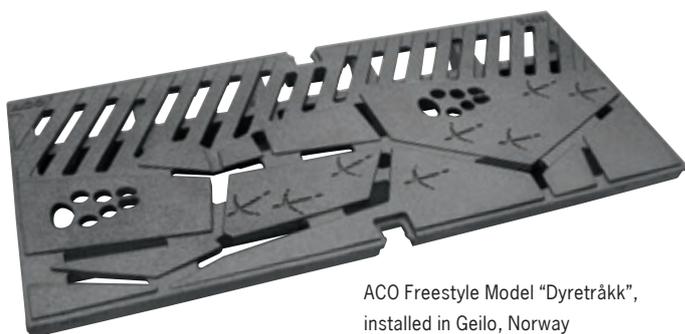


The only prerequisite is to have an idea. The gratings are then manufactured in the ACO foundry. You design – ACO takes care of the details!

ACO Freestyle "Flensburger Welle" designed by kessler.kramer Landschaftsarchitekten, Flensburg

Creativity in landscape architecture

ACO Freestyle cast iron gratings fulfil the desire according to individual solutions for exceptional linear drainage.



ACO Freestyle Model "Dyretrakk", installed in Geilo, Norway

The unique design possibilities for cast iron gratings can, for example, express special features in pedestrian zones or promenades and highlight themes or events.

The use of ACO Eyeleds achieves a highlight of a special kind: The round LED luminaries with 20 mm diameter are permanently installed in the cast iron grating. The individual design is underlined by lighting accents.



ACO Freestyle "Stor" in Itzehoe



ACO Freestyle "FASS" (nominal width 300 mm)



German Design Award
NOMINEE 2015



ACO Freestyle "Leaf"



SETTING BRIGHTER ACCENTS



ACO Sideline

Lighting effects on paths and squares

An appealing illumination sets luminous accents in architecture and open space design. Both public squares as well as entrance areas and pathways will be enhanced in terms of design and function.

ACO Eyeleds, Light points and Sideline provide high level cover gratings for linear drainage with ACO DRAIN® Multiline Seal in. In addition to the effective design, an important plus point is the increased feeling of safety, which is achieved by the lighting effects.

ACO Eyeleds are light, expressive systems in the load class B 125. Integrated LED points in a grating made of high-strength plastic achieve an intensive lighting effect on garage entrances, squares, paths, access roads, boulevards or train platforms.

The ACO Sideline demonstrates a sophisticated symbiosis of drainage and LED technology. The linear-type traces of light optimally underline the character of modern architecture. In addition to RGB individual colours, it is also possible to display mixed colours, colour gradients or dynamic light scenes. ACO Sideline consists of the drainage channel ACO DRAIN® Multiline Seal in V 100, the slotted frame as well as the 29 mm wide LED light line from Insta GmbH.

With ACO Light points, surfaces exposed to higher loads can be particularly and attractively highlighted. Light points consist of high-quality LED luminaries, which are available for applications in cast iron gratings up to the load class D 400.



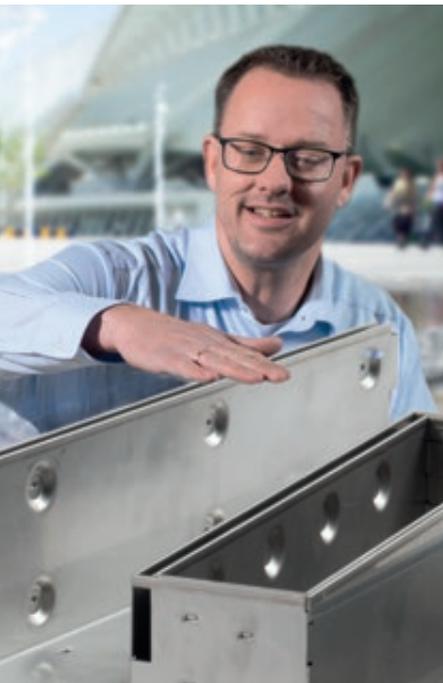
Luminous accent points in white or blue can be set with the large ACO Light points or the small ACO Eyeleds. Special colours such as e. g. red are possible on request.

ACO Eyeleds

ACO Light point



DRAINING PUBLIC SQUARES



Perfection down to the last detail:
Slotted frame and inspection elements with reinforced top edge.

Slotted frames for surfaces and wells

Free spaces characterise life in the city as a haven of peace.

Design and function have an equally high priority.

Rain water and fountains should be discharged in an appealing and functional manner.

ACO slotted frames discreetly and unobtrusively open up new avenues for open space planning. A narrow slot replaces the grating and forms a clear, inconspicuous joint in the pavement. As a design element, it can follow the course of the architectural structure with regard to the lines. The slotted frames are connected to the drainage systems ACO DRAIN® Multiline Sealin and XtraDrain in the various nominal widths and load classes.

Inotec provides individual system solutions made of stainless steel for sophisticated water features or fountain fields. Slot channels or covered channels ensure a secure circulation of the well water. The hydraulic capacity calculation for the drainage capacity of the channels, which includes the special conditions of the planned object, ensures the smooth functioning of the channels for wells and surfaces.

askACO Do you need rapid assistance with technical or commercial questions? We will assist you directly, also directly at the construction site.



Inotec slotted channels in radial or straight mould follow the course of the well discreetly



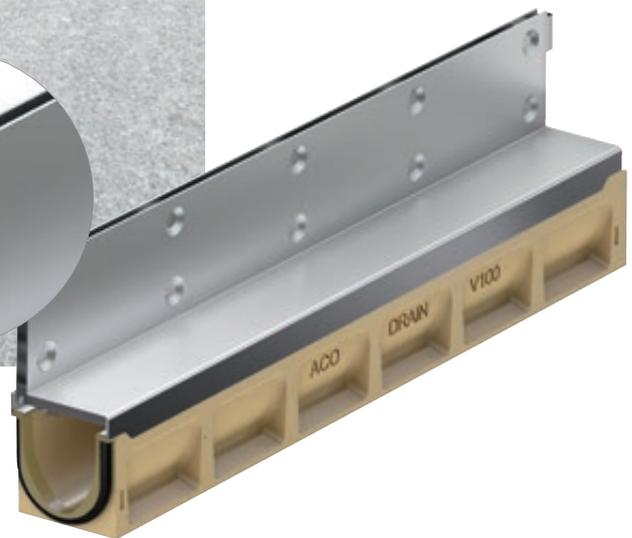
ACO slotted frame on ACO DRAIN® Multiline Sealin drain discreetly under the surface

DISCREET AND ELEGANT DRAINAGE

ACO DRAIN® Slotted frame



Design with clear lines.
Discreet and unobtrusive,
slotted frames for public
spaces open up new
possibilities.



Slotted frame

A narrow slot replaces the grating and forms a clear, inconspicuous joint in the surface. As a design element, this line can discreetly follow the course of the architectural scheme. The system is also ideal for use as a transition between different surface materials.



Slotted frame Double/Triple

Parallel laid slots reinforce the accent and provide an even larger intake cross section than the single ACO DRAIN® slotted frame.



Strip slotted frame

The Strip slot attachment impresses with its restrained elegance. The wide bridges of the slit, fit classically and timelessly into modern buildings as well as historical buildings.

LARGE SURFACES DRAINED QUICKLY





Parking space drainage

Public parking spaces are highly frequented traffic areas from which surface water accumulates quickly and must be safely routed off. Both linear drainage and point drainage can be utilised here.

Parking spaces are not only used by vehicles but also by pedestrians. The drainage of these surface areas can therefore be subject to different requirements. A linear drainage system has a higher chance of intercepting the water over the entire distance, than point drainage system distributed over the entire distance.

For key areas, in which increased loads occur e.g. when parking spaces are temporarily used as a market or delivery zone, point drainage may be the better solution. In addition to infiltration-capable surface fastenings, care must be taken to ensure that a type of emergency drainage system is provided. Especially in frost/thaw periods, it enables the drainage of the surface areas. A well thought-out and application-oriented planning pays off in every case.

askACO ACO Application Technology will be pleased to support you in optimally designing the hydraulic load of the various drainage options.

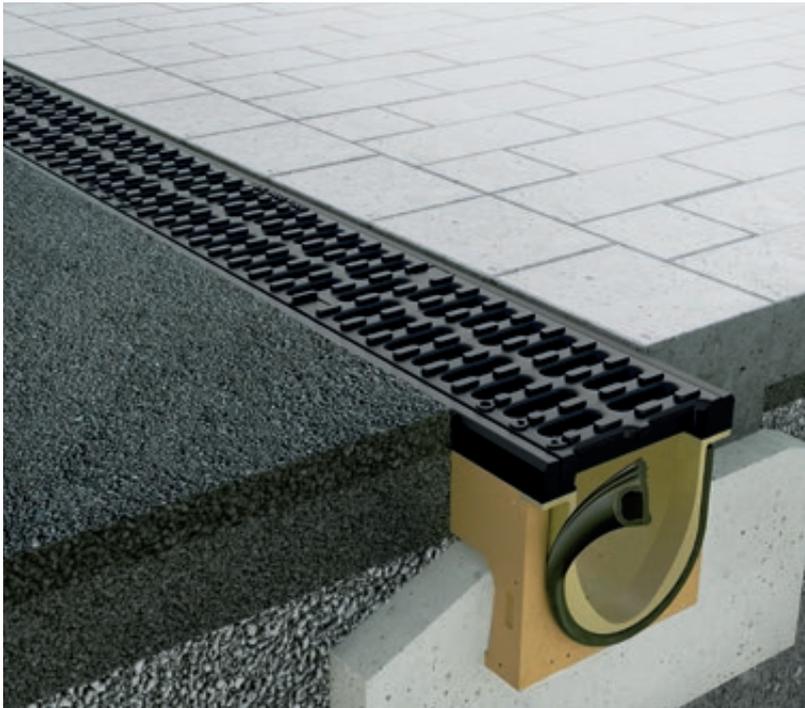


It is economical and fast to install kerbs and drainage in a single operation. Robust components of the ACO KerbDrain range enable easy handling without heavy equipment.



DRAINAGE FOR PARKING SPACES

Channel systems



Linear surface drainage makes sense at access roads and driveways to car parks or as a separation between gutters and car parks, as the slope of the surfaces can be ideally aligned and optimum utilisation of the system can be achieved. The drainage channel ACO DRAIN® Multiline Seal in or Multiline HD Seal in with cast iron frame, equipped as standard with a seal at the channel joint, collects

polluted surface water and routes it into the natural rainwater circulation system without avoidable losses in rainwater treatment. The design possibilities are very extensive by utilising different frames and a large number of cover gratings up to load class E 600 according to DIN EN 1433.

Which drainage system is suitable for your property?

Both the use and the load of the surface area to be drained play a role in the selection.

askACO Whether linear or point drainage, the better solution for these depends on various criteria. We will be pleased to support you in your planning. Get to know our planning tool: the ACO Project Manager www.projectmanager.aco



Road gullies



For gutters of parking areas, private car and HGV bypasses, punctual drainage is advantageous. The ACO Combipoint PP road gully, combined together with the Multitop design attachments, provides ideal drainage for parking areas and driving areas. The lightweight gullies are made of plastic and can be rotated, telescoped, shortened and aligned to suit the inclination.

Channels for edging areas



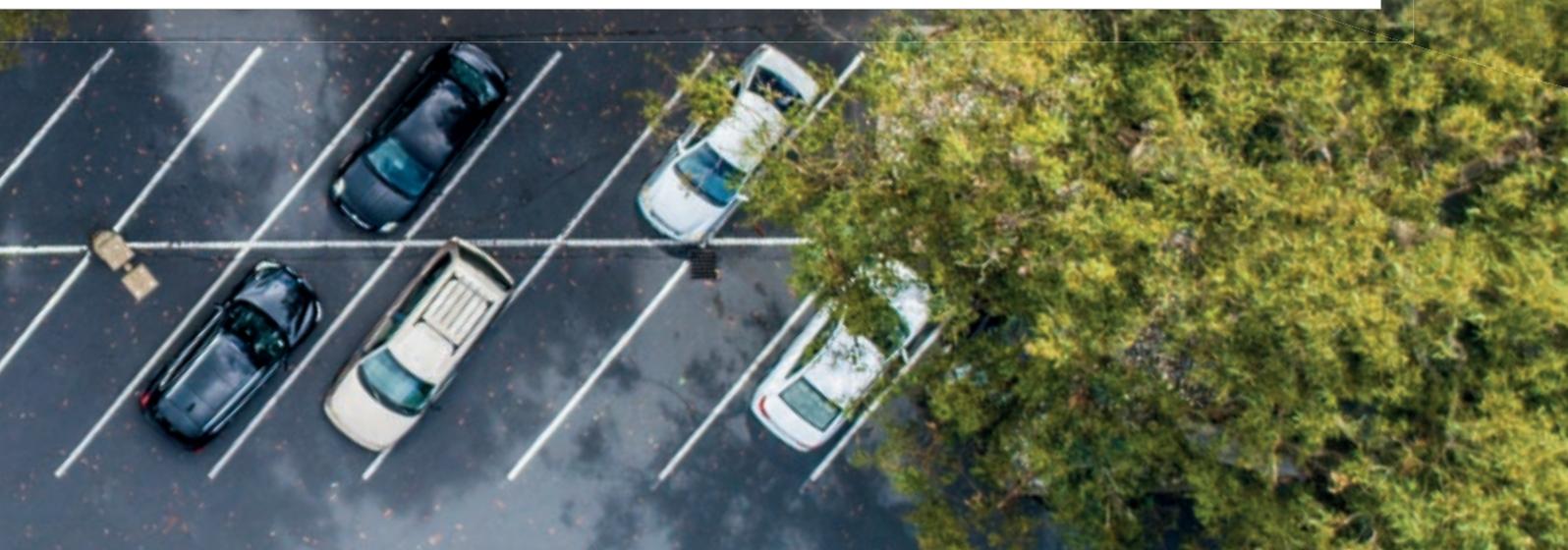
The ACO DRAIN® KerbDrain, a one-piece hollow kerb made of polymer concrete that combines the functions of a kerb and drainage in one component, is suitable for edging areas at car parks. The system impresses with a safe and continuous hydraulic discharge capacity over the entire kerb length.

askACO

www.galabau.aco/sealin

[.../combipoint](#)

[.../kerbdrain](#)



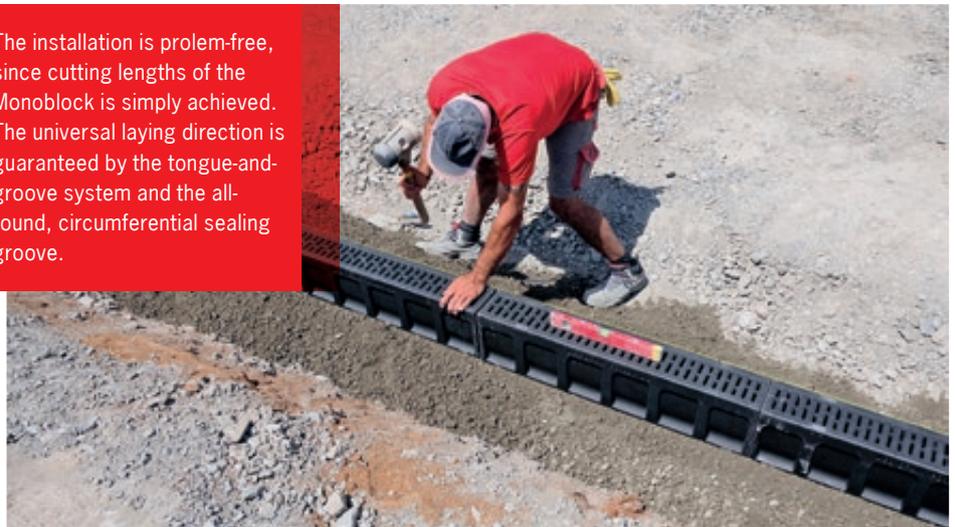


STABLE UNIT

28



The installation is problem-free, since cutting lengths of the Monoblock is simply achieved. The universal laying direction is guaranteed by the tongue-and-groove system and the all-round, circumferential sealing groove.





A single component for high load-bearing capacities

A monolithic drainage system made of polymer concrete is guaranteed to be safe and stable in public areas.

ACO DRAIN® Monoblock PD is distinguished by the mono-casting process and with an improved durability compared to the drainage systems consisting of channel and grating.

The Monoblock enables significantly higher load-bearing capacity, absorption and distribution, even in a horizontal direction. A real innovation in GaLaBau and the

best suitable method for public squares where vandalism resistance is required. We recommend the installation of this channel system for the load class A to D range.

The entire polymer concrete block of the PD 100 V is coloured as anthracite. The monoblock thereby becomes an attractive design element.





Demanding linear drainage made easy

Drainage and design of open spaces has now become even easier with the ACO XtraDrain. The high-quality plastic combines extremely low weight with high stability.



**COMFORT
THROUGHOUT THE RANGE**



Quick and easily divided:
 If the ACO XtraDrain is separated at the pre-drawn cut position, it can also be used as a 0.5 metre element.



XtraDrain with steel frame and longitudinal profile grating

The channel body made of high-quality plastic offers easy handling combined with top quality. Technical details, such as the tried and tested V-profile or the hexagonal structure of the side walls fulfil all requirements for a modern drainage channel. The tongue and groove joint at the start and end of the channel enable simple and convenient installation.

Cover gratings with screwless Drainlock stop locking are available in various designs in load classes A 15 to C 250 for the XtraDrain (Page 12/13).





Large-area shoe scrapers and clean linear gratings

An effective shoe scraper system is part of a well-groomed and well-designed vestibule.

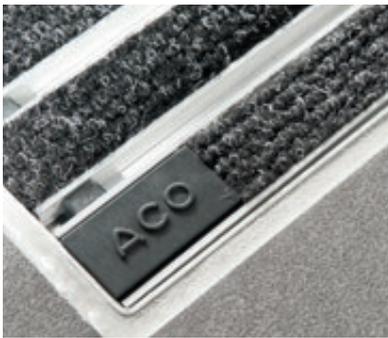
The dirt therefore remains at the door.



KEEP VESTIBULES CLEAN



The functional individual elements, which are resistant to frost, complement each other to form a practical and easy-to-install large shoe scraper surface.



Shoe scraper mat Vario Rips in anthracite



Clean linear grating

ACO provides professional shoe scraper solutions that combine high versatility, functionality and visual appeal. The combination of shoe scrapers for outdoor area use (Vario system) and indoor area use (indoor system) is recommended.

Large-surface solutions in front of prestigious entrances can therefore be made attractive in the simplest way by installing several shoe scrapers.

Individually constructed clean linear gratings from Inotec can also be used as a design element. They adapt ideally to modern architecture and create new accents.





**MANHOLE COVERS
LIKE NO OTHER CITY**





#IfoundACO



ACO product under your feet.
Find it, take a picture, post it publicly with the hashtag #IfoundACO and place it on Facebook – join us!

Individual Manhole covers

Control shafts are required at many positions in outdoor facilities and open spaces. A good design is required for the covers of the shafts.

An aesthetically appealing manhole cover is an integral part of a high-quality paving blocks. By utilising individual designs, ACO provides a personal touch e.g. with a city coat of arms or company logo. You design – ACO takes care of the details!

ACO manhole covers can be suited to the respective environment with freely selectable block paving surfaces and thereby create a continuous unit with the surrounding surface covering.



Individually designed manhole cover



Shaft cover in the block paving surface



Manhole cover with coat of arms



WATER BROUGHT TO THE POINT



Thanks to the Pointlock screwless locking system, the yard gully can be easily opened for cleaning with a grating hook. Ideal when there is a lot of public traffic.



Point drainage for green areas and courtyards

Due to structural or terrain-dependent conditions, some areas have to be drained selectively at one point. Courtyard drains with screwless locking provide advantages in many areas of application.



Polymer concrete courtyard drain

The ACO DRAIN® courtyard drain with Pointlock provides, with a load class up to B 125, a point shaped drainage system for outdoor areas. This system is easy to install and fulfils the highest requirements in terms of workmanship and appearance.

The Pointlock screwless locking mechanism makes the cover vandal-proof and theft-proof.

The cover can also be opened with auxiliary tools and is ideal for use in schoolyards, railway platforms and other areas with heavy public traffic.

A filter bag is available for connection to a pipe seepage system. The water is thus clean when fed into the seepage system.



PROTECTING TREES

One can protect recently planted trees in car parks or on public roads in the best possible way with a combination of grating and trellis.



Systems for tree protection

The sensitive root and trunk area of trees should be well protected. ACO tree protection systems ensure that trees are provided with the required habitat, especially in the city.



ACO Wotan tree gratings are variable in size and shape. A subsequent adaptation to suit the tree growth is also possible. With round, square or rectangular tree gratings as well as protective gratings in corners or on a wall, creative open space design is possible. And all this unsupported without substructure.

ACO Standard tree gratings enable attractive economic solutions. They consist of a hot-dip galvanised steel substructure including frame as well as a cast iron tree grate.

A tree protection trellis protects the trunk against damage. A good tip for newly planted trees.

Drainage

EVERYTHING FOR ALL ROUND THE HOUSE







SAKU B 125 manhole cover is not only beautiful, the plastic cover remains permanently coloured black.



FREEDOM FOR DESIGN



ACO Self® modular drainage system

Access roads and driveways to property and garages

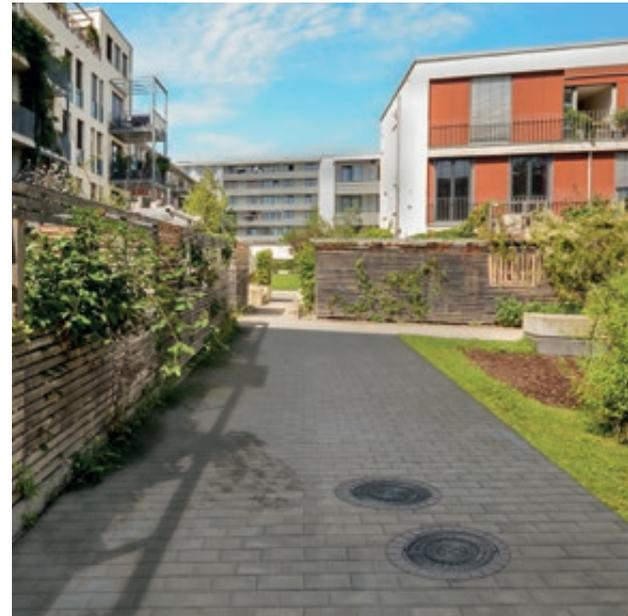
The ACO Self® as well as the ACO DRAIN® drainage system provide numerous creative possibilities to quickly remove rain water from driveways whilst also impressing with its elegant design.

The ACO Self® drainage system in the modular construction system (refer to next Page) combines quality with high-quality design. The grating covers can be driven over by cars and therefore fulfil all the requirements for draining surfaces around the house. Various materials are available for the channel bodies and covers and thereby provide a wide range of design options.

ACO DRAIN® Multiline Seal in is the channel equipped as standard with a seal at the channel joint. We recommend the installation of this system for the load class A to E ranges.

The system is complemented with various cover gratings. An overview can be found on Page 12/13.

The ACO SAKU B 125 manhole cover with cover and frame made of plastic corresponds to load class B 125 according to DIN EN 124. The frame is equipped with a monolithically moulded concrete compensating ring. The cover is extremely easy to operate and weighs just 9 kg. The anthracite-coloured glass-fibre-reinforced plastic promises a permanently sophisticated appearance and colour match for frame and cover.



ACO SAKU B 125 manhole cover made of plastic



ACO DRAIN® Multiline Seal in drainage channel

VERSATILE. SIMPLE. BEAUTIFUL.

ACO Self® Construction Kit



The ACO Self® Programme provides drainage channels for all conceivable types of property situations and the most diverse requirements.

In the ACO Self® modular system, all grating covers fit on all channel bodies. Various materials are available for the covers, from galvanised powder-coated steel to stainless steel, cast iron and plastic. The channel bodies are made of polymer concrete or plastic and, in the area of the facade channel, are available in stainless steel or galvanised steel. The ACO Self® shallow channel can be utilised in areas with low installation heights. With the ACO Self® Highline for balconies, patios and terraces, facade drainage is possible through an open channel system over two levels.





Design gratings

Standard gratings



Double slotted
grating "Wood"
Stainless steel

Double slotted
grating "Tile"
Stainless steel

Surface grating
"Voronoi"
Cast iron

Longitudinal
rod grating
"Intercept"
Cast iron

Longitudinal rod
grating
Stainless steel

Slotted attach-
ment
Stainless steel
Galvanised
steel
Plastic

Mesh grating
Stainless steel
Galvanised
steel

Ladder grating
Stainless steel
polished
Galvanised
steel
Anthracite pow-
der coated

Slip-resistant
microgrip
grating
Plastic

Cast iron
grating

Channel bodies



Euroline
Polymer concrete
Car traffic capable



Shallow channel Euroline 60
Polymer concrete
Car trafficable



Hexaline
Plastic
Car trafficable



Facade channel Highline
Stainless steel or galvanised steel
Walk-on capable

askACO

www.galabau.aco/selfbaukasten



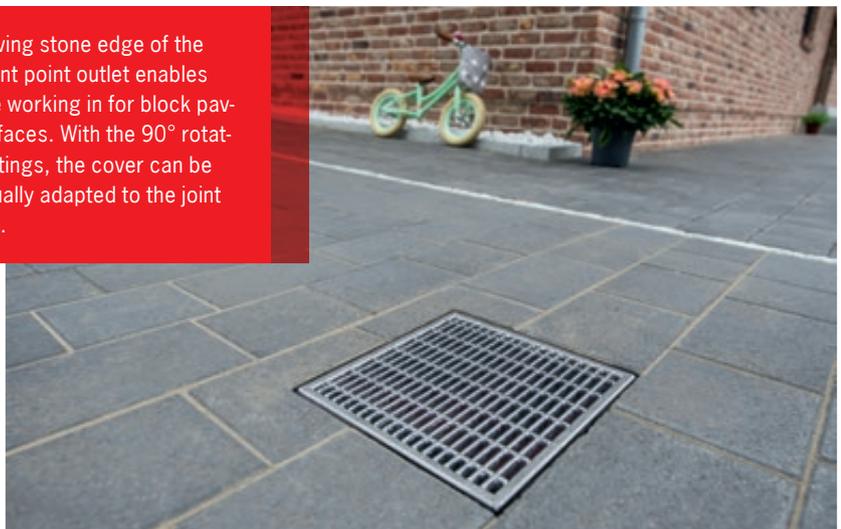


COLLECTION POINT FOR RAINWATER

46



The paving stone edge of the XtraPoint point outlet enables precise working in for block paving surfaces. With the 90° rotating gratings, the cover can be individually adapted to the joint pattern.





Courtyard drainage and water intake point

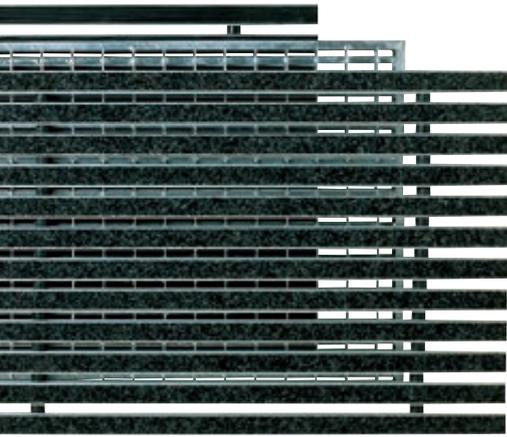
ACO Self® point outlets are particularly suitable for a good alternative for the linear design of the drainage for courtyards. They reliably provide for a rapid absorption of rain water.

The ACO point drainage system guarantees a visually and technically optimal drainage solution for driveways and courtyards. As drain gullies for dirty and rain water, the point outlets can be installed in one area and thereby reliably ensure drainage under water taps in the garden or courtyard. Various designer gratings provide a visual enhancement for the outdoor area.

The point outlet ACO Self® XtraPoint is made of permanently colour-fast plastic and can be driven over by cars (load class B 125). The discharge capacity is at least 4.5 l/s.

The frost-resistant ACO Self® courtyard drain made of polymer concrete can also be driven over by cars and has a discharge capacity of up to 4.0 l/s with a surface area discharge capacity of 150 m².





Shoe scraper for the outdoor and indoor areas

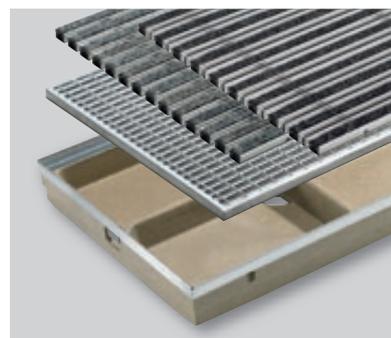
First impressions are defining – especially in the entrance area of a house. Shoe wipers are inviting and welcome the person who is entering. They also keep the dirt away at the same time.



WELCOME HOME

a b c d e f g h i j k
 p q r s t u v w x y
 A B C D E F G H
 N O P

Special accents can be set with a Vario shoe scraper with a personal name. An original saying on the door-step is always welcome.



Vario floor tray with steel frame for all shoe scraper mats and Vario step-on gratings



Especially on wet days, floor coverings in the entrance area are subject to heavy wear and tear due to dirty footwear. The ACO Vario shoe scraper system provides professional solutions that combine high versatility, functionality and visual appeal in order to create a clean, well-kept impression and protect the floor coverings from damage.

When installed outdoors and indoors, the shoe scrapers absorb moisture and coarse dirt in front of the door on the one hand and dust and fine dirt in the house on the other hand. The floor-level installation of the shoe scraper mats, which are laid as non-slip in the frame, enables a threshold-free and safe design.

askACO Select the appropriate scraper for the house entrance of your property in the shoe scraper configurator.





**ELEGANT, FLEXIBLE
AND INDIVIDUAL**

More than just a light shaft cover

As unique as a terrace design:

Design covers and design gratings for light shafts –
perfectly suited to your personal style.

The ACO Vario Design light shaft cover is an elegant design object for patios, terraces and outdoor surface areas. The modular design and construction provides numerous, flexible design options. Even the individual floor covering can be integrated into the surround frame of the light well cover – creating a harmonious overall impression. Utilising walk-on capable and non-slip glass surfaces as well as high-quality stainless steel gratings ensures a modern and straightforward appearance.

An alternative to the Vario design light shaft cover is the Designer Grating. It impresses immediately with its high-quality appearance, is made entirely of stainless steel and is equipped with an extra element to cover the white light well edge. The longitudinal rod grating has therefore received the Plus X Award as the best product of 2016/2017.



Vario Design light shaft cover



Designer grating: available as longitudinal profile or longitudinal rod grating



You can flexibly design your own light shaft covers with the Vario modular construction kit. Various sizes, designs and materials are available for selection.

Vario modular construction kit



Mix and match: exemplary configurations

askACO Complete combination or individually assembled ACO Vario design light shaft cover. The Vario modular construction kit presents the various possibilities online.



Edging frames, ventilation gratings, insert profiles



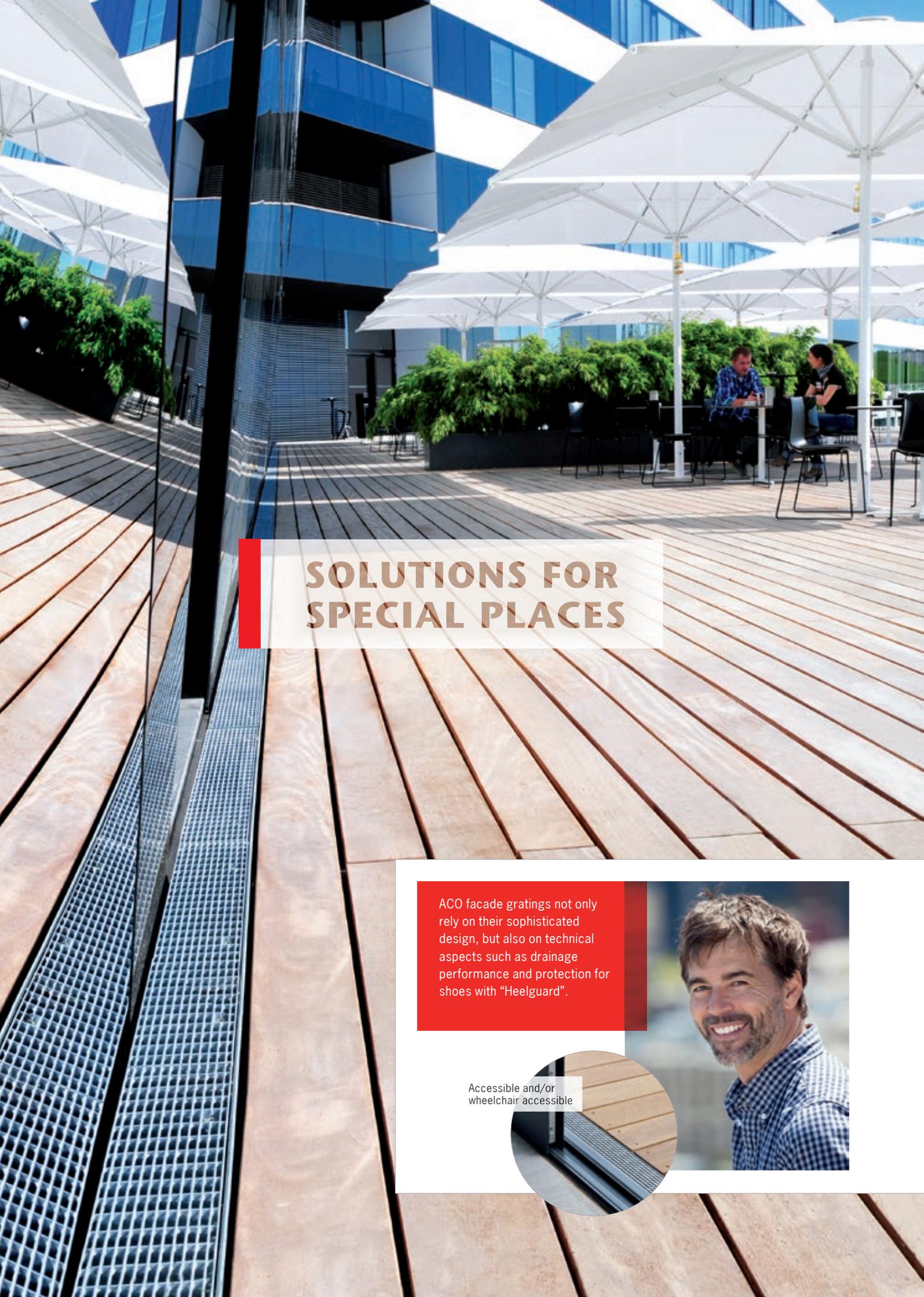
Basic elements e.g. with full or partial glass

Drainage

ROOF AND FACADE





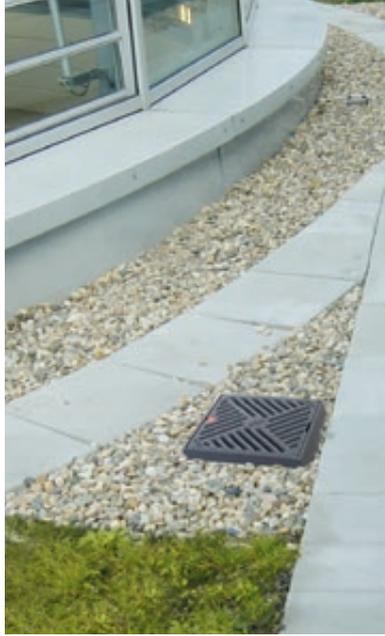


SOLUTIONS FOR SPECIAL PLACES

ACO facade gratings not only rely on their sophisticated design, but also on technical aspects such as drainage performance and protection for shoes with "Heelguard".

Accessible and/or wheelchair accessible





ACO provides flat roof draining discharge and attachments made of polymer concrete and cast iron for the safe drainage of infiltrated rainwater on green roofs. They are easy to handle and can be graduated to the different roof greening variants.



Draining facades, balconies and roof gardens

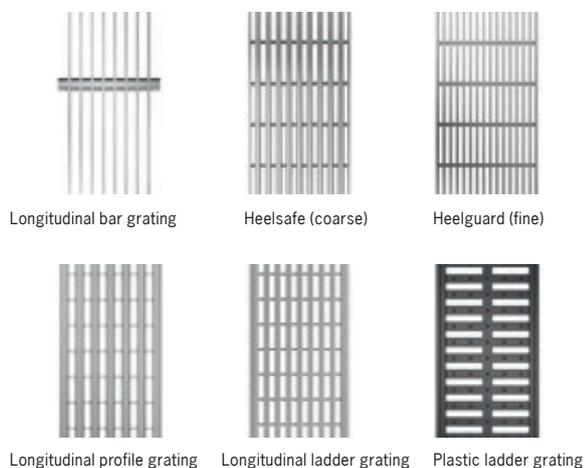
All too often, drainage is dispensed with in difficult localised circumstances. Especially for terraces and green roofs, ACO provides intelligent solutions for every challenge.

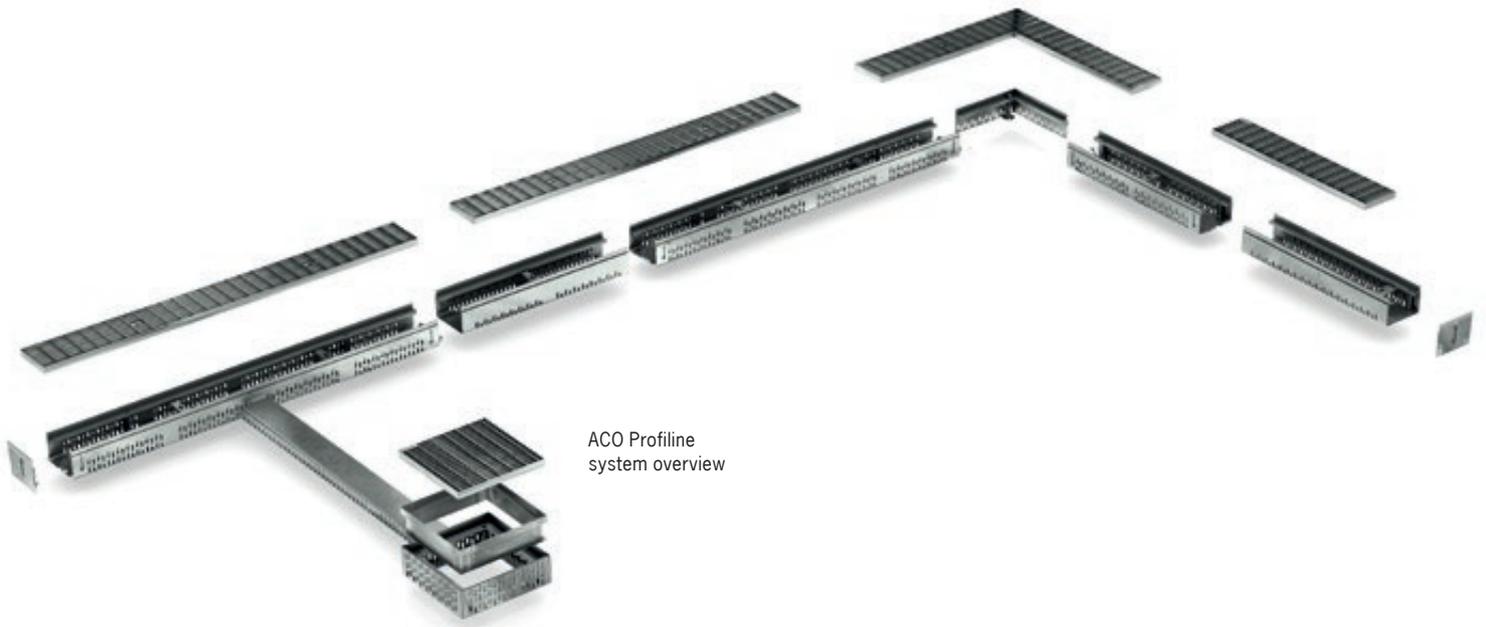
Available not only in stainless steel but also in galvanised steel versions, the ACO Profiline facade channels fit in perfectly with all complex architectural building projects. Various design variants can be achieved by utilising the different grating designs.

The Profiline channel system functions on two levels. It drains the surface area and, at the same time, drains the water from the underlying drainage layer. Precipitation and rainwater flowing off the facade is also safely absorbed.



Highlights of the grating programme





ACO Profiline
system overview



THRESHOLD-FREE TRANSITIONS

Perfectly adaptable to every level

Threshold-free access onto patios, terraces and balconies is now part of the standard for upmarket residential construction. ACO provides facade, patio and terrace channels which fulfil all technical requirements for safe barrier-free, accessible buildings.

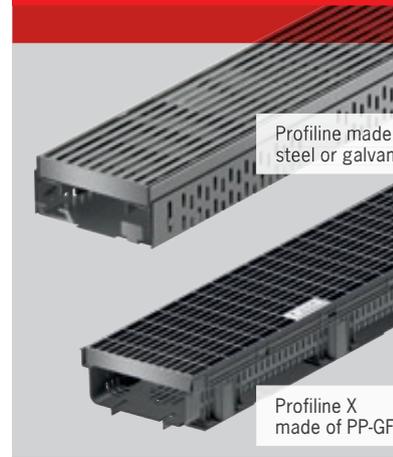


Especially in sensitive door and facade areas, it must be ensured that water is prevented at all times from being forced in, as a result of wind load or accumulation. Facade channels and patio or terrace channels prevent any moisture from penetrating into the building from outside.

The 15 cm connection height for building seals specified in the DIN 18531 and the Flat Roof Directive can be reduced to 5 cm by using the ACO linear drainage systems next to the door area. The amended Flat Roof Directive 12/2016 can be easily complied with ACO products, "When the splash water volume is not minimised by a roof, then mesh gratings which are at least 150 mm wide should be used."



A variable height adjustment makes it possible to adapt to the local circumstances.



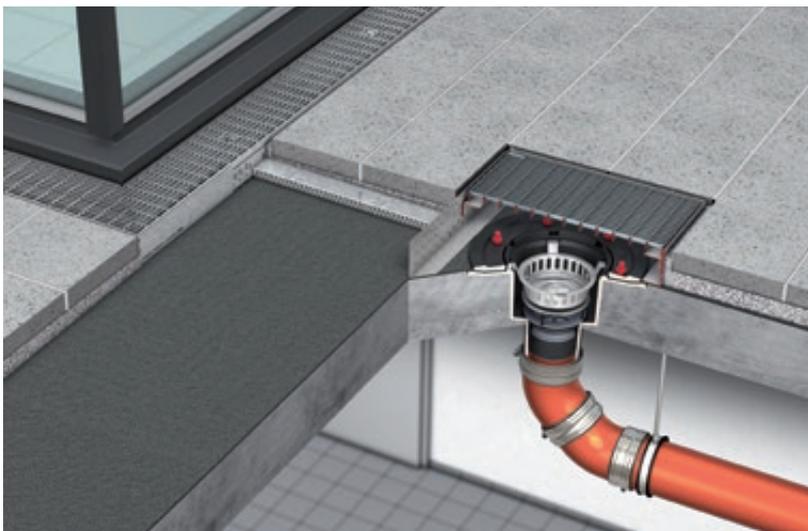
Profile made of stainless steel or galvanised steel

Profile X made of PP-GF

The new ACO Profile X facade channel system is a further development to the ACO Profile made of metal. Glass-fibre reinforced plastic (PP-GF) is utilised in this application, which is designed for special installation situations in a loose laying method on roof gardens, patios, terraces and balconies. The combination of PP-GF and a cover in stainless steel has a positive effect for the client, because they can now invest in the desired stainless steel appearance without having to produce the substructure from expensive stainless steel. Special attention has also been invested in the new grating locking system, which now makes it considerably simpler to insert the gratings in the facade area. The channel system is designed in such a way that it can be connected directly in any installation. There are specified installation heights and height-adjustable variants.

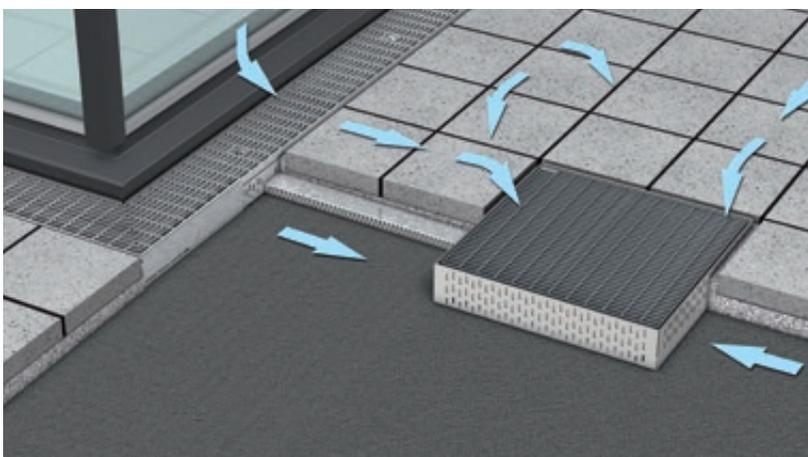
DRAINING SENSITIVE AREAS

ACO facade drainage



Flat roofs are sensitive architectural areas, therefore the drainage for them is especially important for professional planning.

ask ACO ACO supports you in your roof drainage project with the calculation, planning and dimensioning of the wastewater pipes. Our consulting organisation is personally available at every point of the planning process.



Roof terrace system

ACO enables a qualitative and optically high-quality facade drainage with channel elements, branch channels and roof gullies. Function and design are combined in a harmonious image. Any water that accumulates can therefore flow off safely at the interface between the facade and the open space.

askACO www.galabau.aco/fassadenentwaesserung



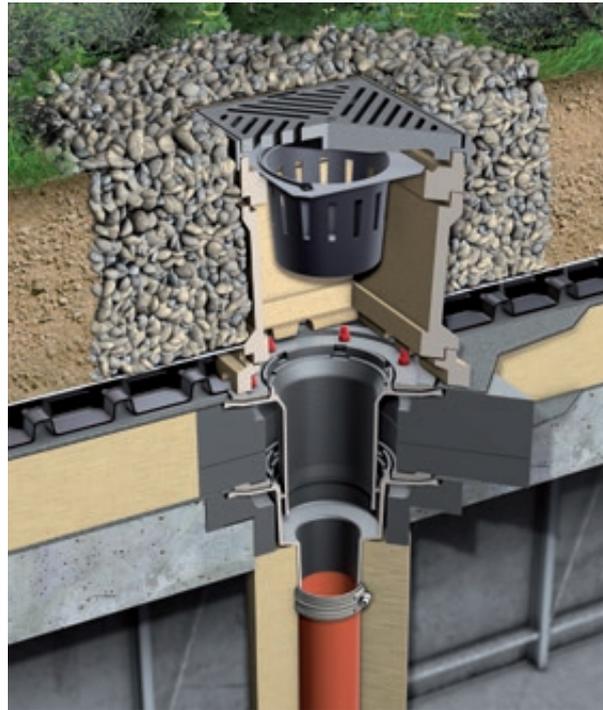


ACO Green roof drainage



Extensive greenery

Extensive greenery and planting on roofs can generally be created with little effort. These are near-natural vegetation forms with special adaptation to extreme site conditions. This is where gravity drainage is used e.g. with an ACO retention discharge gully.



Intensive greenery

Intensive greenery and planting on roofs includes planting perennials, shrubs, trees, lawns and flowers that require regular water supply. Sufficient drainage in the soil and free level drainage are required here e.g. with the ACO Spin flat roof gully.

askACO www.galabau.aco/dachentwaesserung



Спартак-арена



Drainage

SPORTS FACILITIES

The drainage for sports facilities comprises different areas and utilisation surfaces: running track, playing fields, grandstands or infrastructure areas outside the facilities, such as here at the Spartak Stadium in Moscow.





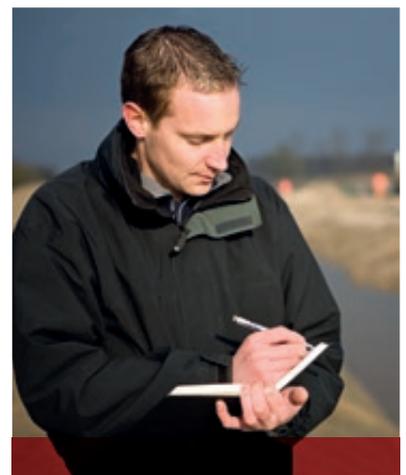
CHAMPIONSHIP LOCATION

Draining tracks and playing fields

ACO SPORT® provides drainage systems and construction elements for sports, play and recreational facilities, therefore helping to keep the facilities playable all year round.

ACO SPORT® drainage systems for a running track combine drainage and the prescribed limitation of the running track in a sensible way. The 5 cm high supported stationary or mobile covers comply with IAAF regulations and comply with national standards for the internal running track bordering. The channel strands are arranged on the inside of the running track, following the surface gradient, absorb the rainwater and delineate the circular track, with the raised cover, from the playing field and the sector surfaces.

Inside and outside stadiums, ACO DRAIN® drainage systems provide safe play. Channels route off rainwater in a targeted manner in sports facilities for ball or roller sports. In the case of hockey artificial turf pitches, they are equipped with a clamp mechanism for fixing the grass. Regardless of the cover which is selected, they have proven themselves for many years at World Cup facilities.



Playing surfaces and sports areas must be available for use by athletes as quickly as possible during or after a rainstorm. A well thought-out drainage ensures the use and provides for a long term preservation of the sports facility.



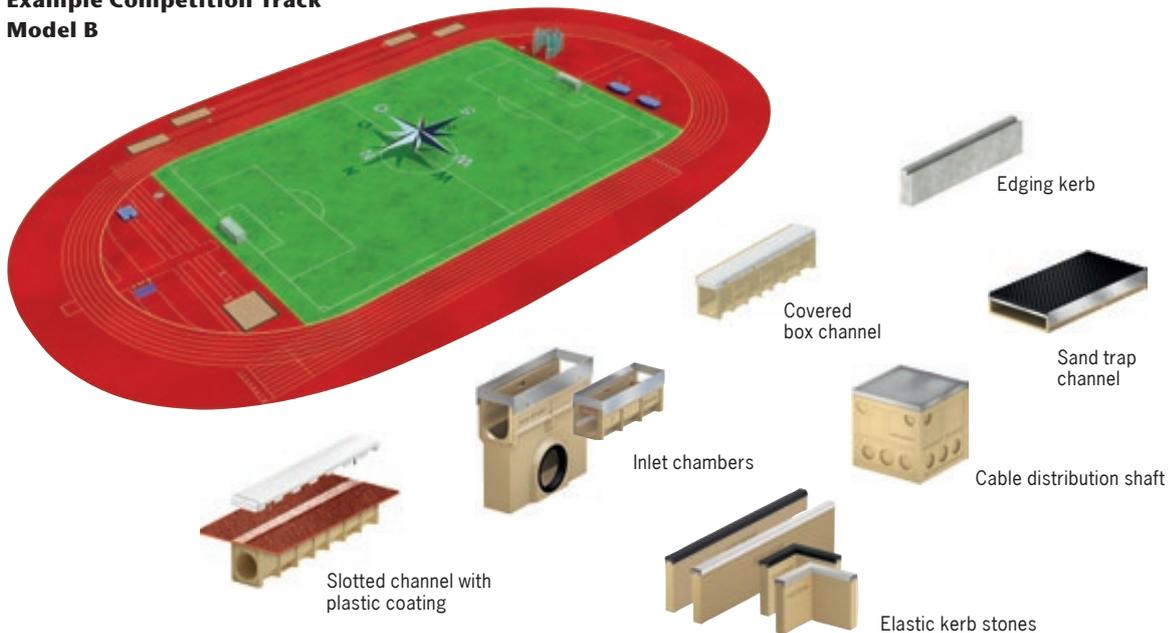
Used under Creative Commons from interbeat

Athletics facility for the 2012 Olympic Games in London with ACO drainage systems



Hockey facility for the Olympic Games 2016 in Rio with ACO drainage systems

**Example Competition Track
Model B**





**SPORTS SPECTACLE
WITH SMOOTH PROCESS**



ACO DRAIN® Monoblock in the grandstand area



ACO SPORT® drainage systems for large pitches, example for hockey sport



ACO SPORT® troughed channel for football stadiums

Draining stadiums and grandstands

Equipping the Olympic Stadium in 1972 was the start of the joint venture between ACO and the Olympic Games.

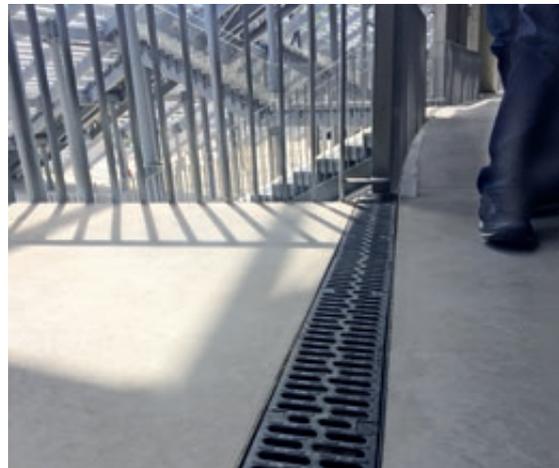
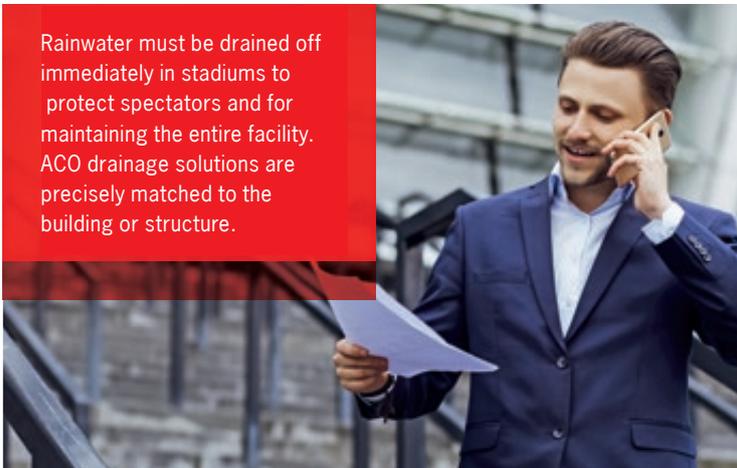
Since then, ACO products have enabled the smooth running of a wide variety of competitions.

Systems for football stadiums and large playing fields with natural or plastic turf quickly drain the water off and ensure that the sports facility can be used again quickly. The ACO SPORT® drainage systems can be utilised for all types of competition arenas such as A, B and C as well as for large playing areas and multi-functional systems with Type D.

Drainage of grandstand areas must consider several aspects: on the one hand the drainage and on the other hand security against vandalism. The ACO DRAIN® Monoblock drainage channel fulfils both requirements because it is made from a single casting. Alternatively, the ACO DRAIN® Multiline Seal in can be utilised in combination with attractive Drainlock gratings with locking mechanism.

ask ACO A properly designed hydraulic performance calculation guarantees optimal sports conditions. ACO provides a calculation for ACO SPORT® drainage channels which takes into account the special circumstances for the planned premises.

Rainwater must be drained off immediately in stadiums to protect spectators and for maintaining the entire facility. ACO drainage solutions are precisely matched to the building or structure.



ACO DRAIN® Multiline Seal in for all-round use in the stadium



**ATHLETIC
IN ANY WEATHER**



Troughed channels quickly drain off precipitation and rainwater

Draining all-weather pitches and fun sports facilities

ACO SPORT® drainage systems secure and protect facilities for sports, playing, ball games and fun and thereby also players and participants.

Troughed channels have proven themselves for decades on many sports facilities. As a wide, compact component, firmly anchored to the substructure, the trough is safe, secure, stable, self-cleaning and impresses with low-maintenance. It provides no contact surface for vandalism and the surface water is quickly drained off from small playing areas, tennis courts, volleyball courts or fun courses.

A border to adjoining vegetation or paved areas with sports bordering slabs or shelves with claw groove ensures the long-term preservation of sports areas with a plastic coating.

Elastic kerbs guarantee safety and reduce the risk of accidents on playing areas and ancillary sports facilities.

For the selective drainage of sports surfaces with hard surfaces, robust stainless steel point outlets with an injury-proof, stable locked cover with excellent roll-over capability without resistance are recommended.



No loss of speed due to covers without resistance

Non-covered sports facilities require other drainage systems solutions compared to covered stadiums. Different types of coverings must also be taken into account.

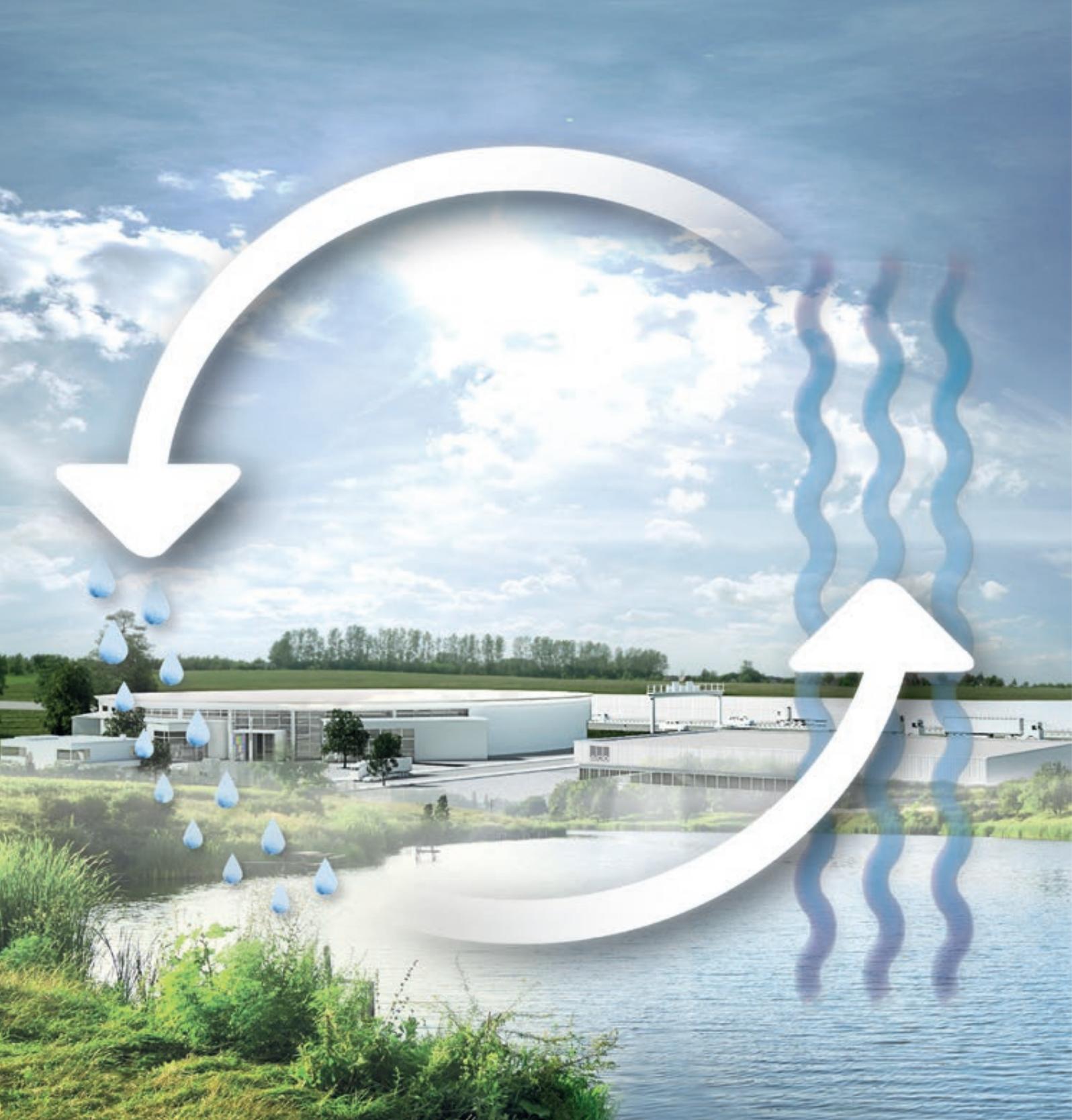




Drainage

RAINWATER MANAGEMENT





collect:

Collect and hold

- Drainage channels
- Road and yard drains
- Gully tops
- Manhole covers



clean:

Pretreat and treat

- Separators
- Sedimentation and filtration systems



hold:

Keep out and retain

- Rainwater utilisation
- Back flow systems
- Control valve shafts
- Infiltration and attenuation systems
- Retention basins



release:

Pump, discharge and reuse

- Honeycomb grass paver and gravel stabilisation
- Lifting plants
- Flow control systems
- Pump shafts

Sustainable rainwater management is our task for the future

The challenge:

Rainwater – an issue that concerns us all

Rainwater presents landscape architects, urban planners, architects, clients, building owners and operators with ever increasing challenges. If rainwater is on the one hand a precious commodity that is vital for flora, fauna and people, then on the other hand it contains great hazards in itself.

Surface sealing plays an essential role in preventing rainwater from seeping into the ground where it can then accumulate. Politicians draw their own conclusions from this: "The goal of the German government's sustainability strategy is to reduce the daily demands from new settlement and transport areas to an average of 30 hectares per day by the year 2030."

The increase in heavy rainfall is another important aspect. The total annual rainfall has only increased very slightly throughout Germany. Studies in Germany have however indicated that it is not the intensity of individual heavy rainfall that has increased rather the number of days of heavy rainfall.

Source: G. Malitz, C. Beck, J. Griesner: Veränderung der Starkniederschläge in Deutschland, from "Warnsignal Klima", 2011, 3. Edition, edited by the WetterWelt GmbH

The solution:

Rainwater management – well thought-out from start to finish

ACO provides individual drainage solutions for every project round the ACO system chain:

- Collect and absorb rainwater: Whether linear or point drainage, high-quality drainage channels and/or point drainage are available for every possible application.

- Cleaning and treating rainwater: where does the rainwater come from and where should it be discharged? Different sedimentation shafts and systems enable proper treatment of the surface water, as required by law, before it infiltrates the soil or is discharged into the receiving water.

- Retaining rainwater: retention basins can be utilised when the preliminary flow is overloaded. Products made of concrete and plastic are available, so that the best solution can be selected for every location or application. Infiltration systems, for example, infiltration drains, can also initially retain the surface water. The water is then gradually discharged into the soil, which promotes groundwater recharge.

- Discharging rainwater: controlled discharge of the previously collected rainwater is becoming increasingly important. ACO offers suitable flow restriction systems and pumping installations, to discharge the surface water from a collection tank into the receiving water in a controlled way.

A modern, multi-story white apartment building with balconies is the central focus. The building is surrounded by lush greenery, including a large tree in the foreground and various shrubs. A paved walkway curves around a grassy area, and a small pond with reeds is visible in the lower left. The sky is blue with scattered white clouds. A semi-transparent white banner with a red vertical bar on the left side is overlaid on the image, containing the text 'IN THE SPIRIT OF NATURE' in bold, green, uppercase letters.

IN THE SPIRIT OF NATURE



Surface water from heavily trafficked roads should be cleaned before being discharged into a waterway. ACO has found a solution for this whereby the pollutants are already retained in the road gully.



Sustainable handling for water as a resource

Rainwater treatment plants are located almost everywhere and are indispensable before rainwater is discharged into the soil or into the sewer system.



Collected surface water from traffic areas, car parks and uncoated metal roofs or façades contains substances that must not be discharged directly into the receiving water (outfall) or the groundwater. Different sedimentation and rainwater treatment plants are available and their implementation depends on the degree of contamination of the collected rainwater.

1 | The ACO Separation Road Gully (SRG) minimises the solids content input into the sewer network. Utilising an SRG as an integrated flow application for turbulence reduction means that the sedimentation and discharge of sedimented solids are improved compared to conventional road gullies with a wet sludge collection chamber. The surface area to be drained via the SSA is approx. 500 m² at approx. 8 l/s - in heavy rain even up to 20 l/s for a short time.

2 | Sedised-P is a container made of plastic in a monolithic design. Its low weight is a clear advantage compared to concrete containers. Variants suitable for load class B 125 and D 400 are available due to the different attachments or gully tops.

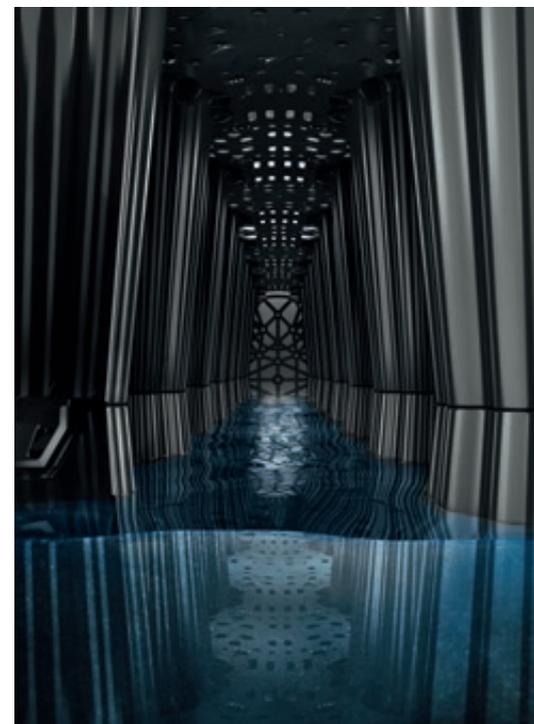
3 | Sedised-C is a container made of concrete which is available in the load class D 400.

4 | The optimised ACO Sedismart-C sedimentation plant is equipped with an internal body which the rainwater to be purified must flow around and through. This causes the water in the sludge trap to rotate. The flow time is extended and the sedimentation of the solids is thereby improved.



RELIEVING THE PUBLIC SEWERS

ACO Stormbrixx



The special design of the ACO Stormbrixx enables inspection and maintenance by camera inspection and flushing in all directions.



Retaining and storage in the infiltration ditch

Groundwater recharging as well as the retention and controlled discharge of rainwater into the receiving water are two central subjects for rainwater management.

A block infiltration ditch system is the optimal solution.

ACO Stormbrixx is a modular infiltration ditch system made of plastic that functions underground as an intermediate reservoir for rainwater. The water can gradually soak away into the soil when a geotextile is wrapped around the block infiltration ditch. If a waterproofing membrane is implemented, then an underground tank is created from which the water is discharged to the preliminary, receiving flow with a time delay.

This relieves the receiving flow. ACO Stormbrixx SD is the perfect solution under green areas, pedestrian areas, private vehicle driveways and parking areas with temporary utilisation access for emergency and special vehicles (fire brigade, refuse collection or tanker vehicles). The Institute for Materials Research and Testing for Civil Engineering (MFGA) inspected the structural calculations in 2017.



Basic element
ACO Stormbrixx
SD and HD

ACO Stormbrixx HD is also suitable as an application utilisation under parking areas and ancillary facilities for traffic routes which are not constantly used by heavy traffic. This variant has been certified by the German Institute for Construction Technology (DIBt) since 2013.

askACO Your planning tool for drainage: ACO Project Manager
www.projectmanager.aco

Stable and firm installation of basic elements with interlocking bond

askACO www.galabau.aco/stormbrixx



Economy and ecology – a win-win combination

Ecological surface area drainage is politically desirable, and rainwater soak away and/or infiltration is a major issue in state water legislation. It provides economic advantages – by reducing wastewater discharges on the one hand and by reducing wastewater volumes on the other. Last but not least, the environment benefits: the groundwater table, which is constantly falling due to urbanisation and the associated sealing of surfaces, can therefore regenerate itself.

Water ditches and spring streams for infiltration

The Dutch Veluwe landscape is famous for its streams and ditches, through which crystal clear water flows. The historical excavated ditches are unique in Europe. They were designed and installed to supply water to the water mills. Driven in this way, the mills were used to process grain and produce paper or copper. The streams and ditches are a national cultural and historical heritage today. In the centre of Arnhem, they belong to the cityscape, as for example in the Presikhaaf Park. Sometimes the streams have cross places where roads are planned. The water could be led through a pipe inconspicuously under the road in this case – with the Presikhaaf Park, however, one has decided to particularly highlight the river with a channel.

The water flows through a wide, 11 m long Multiline V 500 G channel. It is covered with a Corten steel cladding designed by the Arnhem landscape architect Wim Borghuis. Borghuis' design was implemented in 3D by ACO designers. Due to the many different large holes, it looks as if there are drops of water everywhere on the grating. Since Corten steel is oxidised in a controlled manner, a decorative brownish rust layer forms, which protects the underlying material from additional oxidation. Artistic design and the special material unify to form an unmistakable design element.



Drainage close to the surface made attractive



Drainage channels close to the surface discharge precipitation and rainwater quickly and easily into the infiltration troughs.

Especially in rural structured areas, infiltration is the method of choice. Waste water disposal resulting from larger rainfall volumes is often problematic here, not just from an economical point of view but also for ecological reasons. This is because the distances to the nearest sewage treatment plant are usually longer. In order to ensure secure and safe drainage of the wastewater, large-sized mixed and/or rainwater channels or storage devices are required. And sewers are also expensive. They account for 70 to 80 % of expenditure for wastewater treatment. If the precipitation or rainwater can be seeped away on site, then only the wastewater has to be drained off into the sewage treatment plant. This enables considerable cost savings in the field of pipework and sewer construction.

It is advantageous to route the water away as close as possible to the surface, from the area to be drained, to the infiltration plant or to the upstream sedimentation plant. ACO DRAIN® provides a wide range of drainage products that quickly absorb and transfer on the rainwater which is hereby generated. Especially in larger and extended catchment areas e. g. residential areas, the expensive installation of deep-lying line pipework can be reduced in this way.

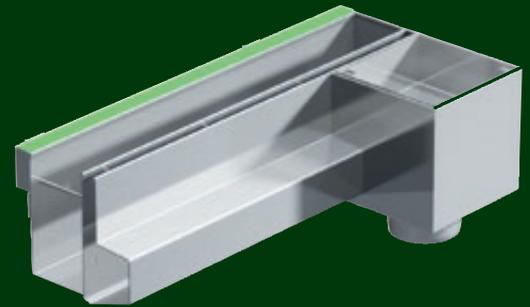
Various design variants are available for the infiltration of uncontaminated rainwater in urban areas. The selection of the type of infiltration depends primarily on the size and location of the property.



Drainage channels absorb the rainwater safely and direct it away close to the surface into the adjacent green area. There it can gradually seep away – and the plants and greenery are irrigated in a targeted manner.



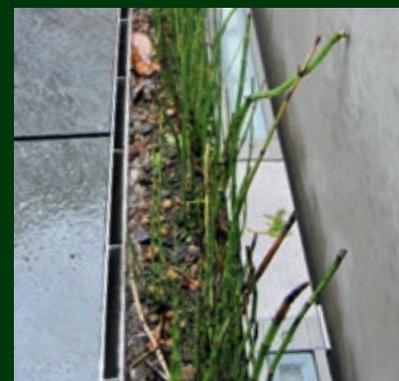
Permeable surface area coverings enable precipitation and rainwater to seep away directly from where it accumulates. During heavy rainfall and ground frost, precipitation and rainwater can be safely discharged through drainage channels.



For facade areas: Inotec slotted channel with welded plant box and light line

Drainage and planting in a small space

Plants on balconies, patios or terraces and at the entrances and perimeters of residential complexes raise the quality of life values and increase our well-being. The planting hereby creates small oases in the urban space, which have a climate balancing effect. The Inotec slotted channel model ino 660 SR with welded-on plant pot provides a particularly space-saving and low-maintenance option for greenery and planting. It is simple to assemble and absorbs rainwater directly from the façade. Accumulating backwater or seepage water is specifically discharged from the plant container. With additionally processed profile rails, the channel-plant pot combination also provides for lighting – with light lines or other lighting effects.



Accumulating rainwater is collected and routed to a container near the surface



Grey becomes green and blue!

Water-sensitive design for urban and open spaces with blue-green infrastructure

The consequences of increasing land sealing in cities, and the effects of climate change, present cities and municipalities with new challenges. In Summer 2016, the media reported severe storms almost daily. Heavy rain caused devastating damage in many regions of Germany.

When it rains very heavily, the water collects in depressions and at other low points such as underpasses, subway entrances, underground garages or basements and subsequently floods them. Rivers overflow their banks. Sensitive areas will be damaged. This concerns technical installations and facilities for electricity supply, underground transport systems and cultural assets as well as ecosystems worth protecting. Utilisation is no longer possible in the short term. Even human lives can be endangered. Flood prevention is therefore an urgently necessary task for local authorities, building owners and planners. This precaution will result in whether urban areas are permanently resilient and worth living in.

In order to implement water-sensitive urban and open space development, water economists must work closely with urban, open space and transport planners. This therefore means that green or blue-green infrastructure is in demand here! It is not without reason that the Federal Ministry for the Environment, Nature Conservation, Construction and Nuclear Safety will in future focus its urban development policy on urban green projects with the Green Paper and White Paper as the core process. And it is time that we implemented this subject consistently!

The US Environmental Protection Agency (EPA) defines “green infrastructure” as a cost-effective, resilient (i.e. less susceptible to disruption) approach to managing rainwater. Decentralised measures for infiltration, retention and controlled discharge of precipitation and rainwater are important building blocks that can be utilised both in new construction and in the conversion of existing buildings. This should also be done at all costs.

According to the EPA, green infrastructure generates many additional positive synergies compared to grey infrastructure i.e. the conventional underground drainage system. It is also profitable economically when the urban rain run-off is not simply derived as fast as possible from the built-up environment: In many municipalities, rainwater charges can be saved as a result. The blue-green infrastructure measures must be planned technically, flawlessly and function permanently. Then they can thereby improve the quality of both residential areas and workplaces, enhance their image, evaporate rainwater and therefore improve the urban climate as well as providing important habitats for flora and fauna.

There are many positive national and international examples that illustrate this added value and can serve as inspiration.

Dr.-Ing. Elke Kruse

is a freelance landscape architect and has been doing research at HafenCity University Hamburg in the field of “Environmentally Friendly Urban and Infrastructure Planning” since 2009.





At the top:

City planners and architects from all over the world come to Stockholm in order to visit the new Hammarby Sjöstad urban district.

Left:

The existing green spaces in the Ecocity Augustenborg in Malmö were subsequently modelled in such a way that they temporarily store the water during heavy rainfall and thereby protect the surrounding urban quarter from flooding.

Right:

New York is relying on Green Streets throughout the city – areas for direct infiltration of rainwater in the streets

Pictorial material: Dr.-Ing. Elke Kruse





NEW FORMATIONS FOR GROUNDWATER

Rainwater infiltrates away locally

Holistic rainwater management has many facets.

The infiltration of precipitation and rainwater into the soil is an important process that significantly supports groundwater recharge.

80
III



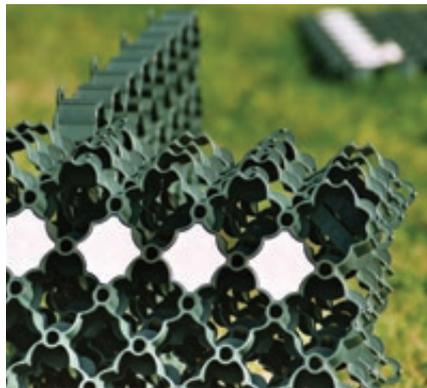
The honeycomb structure of the gravel stabilisation ensures that stones stay where they belong. The covering remains free of trace channels and piles of stones. Filled with precious chippings or decorative gravel, an individual design is possible.



ACO Self® gravel stabiliser pro



ACO Self® edge surround



ACO Self® honeycomb mesh grass paver

Infiltration is the preferred natural method. ACO Self® honeycomb grass pavers unseal car parks, driveways, terraces, patios, walkways, parking places, emergency access roads and shore reinforcements. The surfaces are green and still highly resilient. A good root growth for the grass promotes the infiltration capability of the surface area.

The ACO Self® gravel stabilisation pro supports the rigidity of gravel surfaces and prevents the sinking in of tyres of any kind. This makes gravel surfaces more attractive and contributes to the infiltration of rainwater.

The 1.8 m² large panels are used in municipal landscape design (e.g. in parks and cemeteries), on garden paths, patios and terraces, on courtyards and parking places, entry and exit roads and driveways as well as on roof areas.

The ideal addition to gravel stabilisation is the individually mouldable ACO Self® edge surrounds for demarcating lawns, flower beds, paths and/or block paving surfaces, patios and terraces. There are three materials to choose from: galvanised steel, stainless steel or Corten steel.

UTILISE YOUR RAIN



Reuse up to 50 % of drinking water with Rain4me

Sunny, hot days without rain:
flowers in the garden quickly hang their
heads under such conditions and require
water from rainwater harvesting!

Utilising rainwater in the house and garden is a sensible and environmentally friendly way of relieving the burden on groundwater resources and takes account of the increasing demand for drinking water. Rainwater is a valuable commodity for garden irrigation and also for use in WC flushes or washing machines. The ACO Rain4me system provides components for both applications.

askACO ACO Application Technology supports you in finding the best solution: www.rain4me.aco/kontakt
Or use the configurator under www.rain4me.aco/konfigurator



Comfort solution for rainwater harvesting in the garden with the Rain4me cistern



Rainwater is the best media for flowers, trees and the lawn because it contains little lime and has an optimum degree of hardness.

The ACO Rain4me cisterns are available in three sizes: 3,300, 4,700 and 6,500 litres. Stiffening ribs ensure maximum structural strength so that the built-in tanks have a high groundwater stability.

ACO Rain4me flat tanks are installed underground. Due to the flat shape, only a small excavation is required. When ordering, the volume can be optimally configured for the utilisation required and the available space by combining several rainwater tanks of 2,000 litres. The modular system is easy to transport to the construction site.

The ACO Rain4me cellar tanks in sizes 350, 500, 1,000 and 4,000 litres are suitable for installation in the cellar, garage or shed. They are ideal for retrofitting existing buildings or in situations where underground tanks cannot be installed.



Professional use of rainwater in the house and garden with the Rain4me flat tank

The ACO Architects' and Planners' Day: Interface_knowledge_practice

Normally, ACO architectural consultants are located where they are needed: in the planning office and on the construction site. You can however see them annually at the ACO Architects' and Planners' Day. Architects and planners accept the invitation and jointly experience inspiration and information regarding exciting subjects.



Since 2012, ACO, the world's leading specialist in drainage technology, has invited architects and planners to its headquarters in Büdelsdorf, North Germany, once a year for the Architects' and Planners' Day. For the fourth time to date, AIT-Dialog and ACO are jointly designing the lecture format and integrating the art exhibition "NordArt" into the programme.

After last year's focus on the subject of "(Re)Activate – New Impulses in Existing Structures", the ACO Architects' and Planners' Day on 20th September 2018 will see world-renowned speakers from the fields of architecture, engineering, construction and landscape architecture discuss the highly explosive subject of "(Re)Mixing – Architecture and the City in a New Context".

(Re)Mixing – Architecture and City in a New Context

Designing cities worth living in during times of migration and promoting the strengthening of urban life for all generations is becoming an increasingly central task for architects and urban planners. New forms of housing and living for a heterogeneous society, a proximity to culture, work, education, shopping and recreation – all in a small space – are essential for the successful mixture and quality of entire urban quarters. Flexible usage options and overlapping utilisations within buildings and a new definition for private and public space provides potential in all benchmarks – in new construction and the transformation of existing buildings.



Prof. Enrique Sobejano
Nieto Sobejano Arquitectos, Madrid

Participatory planning processes are just as much a part of the current debate as the integration of sustainable innovations for an energetic and infrastructural nature.

Be a guest and experience new concepts at the interface of architecture and water. The eventful day will be rounded off with an exclusive visit to the NordArt International Art Exhibition.

www.architekten-planertag.aco



The Architects' and Planners' Day 2017 was held under the motto "(Re)Activate – New Impulses in Existing Structures"



NordArt International Art Exhibition

||| KUNSTWERK CARLSHÜTTE

Kunstwerk Carlshütte, a non-profit initiative of the ACO Group and the cities of Büdelsdorf and Rendsburg, organises the NordArt International from June to the beginning of October. NordArt is one of the largest exhibitions of contemporary art in Europe and presents around 200 selected artists from all over the world annually. Its stage is the historic foundry halls of the Carlshütte (22,000 m²), the ACO Wagenremise (400 m²) and an 80,000 m² sculpture park as well as public squares in the city areas

With its commitment to art and architecture, ACO documents an aesthetic claim that can also be found wherever ACO products are visible in public spaces and buildings.

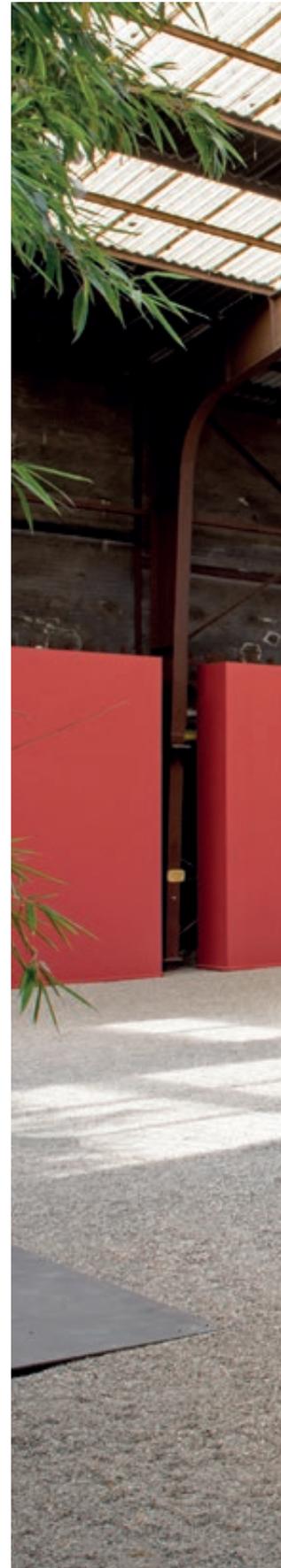
www.kunstwerk-carlshuette.de
www.nordart.de



NordArt 2015: the sculpture park
Richard Brixel "Balance on a Tight Rope"



NordArt 2018: Hall 1 in the Carlshütte





Xu Bing "Phoenix III" on the NordArt 2017



88



ACO Group



The ACO Group is one of the global market leaders in the drainage technology sector. Climate change challenges us to come up with innovative solutions in response to new environmental influences. ACO adopts an integrated approach and focuses on professional drainage, efficient cleaning and the controlled drainage or reuse of water. The company's products comprise drainage channels and gullies, oil and grease separating systems, back flow systems and pumps as well as pressurised watertight basement and cellar windows and light shafts.

This family company, which is based in Rendsburg/Büdelndorf, was founded on the grounds of the Carlshütte, the first industrial company in Schleswig-Holstein, in 1946.

ACO at a glance

- 5,000 staff in more than 40 countries (Europe, North and South America, Asia, Australia, Africa)
- 30 production locations in 15 countries
- Sales 2017: 775 Million Euros

Sales development worldwide in Millions of Euros



ACO Materials

When designing building elements, selecting the correct, suitable material determines the aesthetics and functionality. The materials used by ACO are characterised by their strength, their ageing resistance and their resistance to aggressive media, frost, heat and sunlight. Due to their long service life and recyclability, they are both sustainable and environmentally friendly and are utilised for their intended purpose.

Polymer concrete

With 30 production locations worldwide, we consistently implement our ideas for product quality, economy and deliver reliability for our customers. Each of our factories has a special materials expertise, from which the entire ACO Group benefits. The fact that we are constantly updating our production technology and ecology focus is an integral part of our claim to act responsibly as a company and to be a global leader.



ACO polymer concrete – an improved idea

The special material composition and state-of-the-art production technologies provide ACO polymer concrete with its outstanding property profile. The ACO polymer concrete products have high strength values and a lower weight. ACO polymer concrete is impermeable to water. Water dries off quickly. Frost damage is excluded. The smooth surface area of ACO polymer concrete enables water and dirt particles to flow off quickly and is easy to clean. In addition, polymer concrete is resistant to aggressive media even without additional coatings and is also versatile and durable even under extreme conditions.

Cast iron



ACO Guss – Quality for all requirements

The types of cast iron used in the ACO Guss factories in Kaiserslautern and Aarbergen are adapted to the constantly increasing requirements through intensive innovation and development processes: both cast iron with flake graphite (grey cast iron GJL) and cast iron with spheroidal graphite (spheroidal graphite cast iron GJS) have proven themselves as materials for use in channel casting due to their high corrosion resistance.

ACO Guss provides the optimum solution for the respective application, independent of the material used.

Plastic



ACO Plastic – innovative and flexible

Plastic components provide the highest-possible design freedom in mould shape and function. We use this potential to prevent complex material combinations and joining processes and to develop intelligent solutions “from a single source” instead. The plastics utilised by ACO are characterised by their high breaking strength as well as their excellent resistance to environmental influences. Simple machining options and the low weight are the reasons for the outstanding user-friendliness of our plastic solutions.

Steel/stainless steel



ACO steel/stainless steel – excellent components

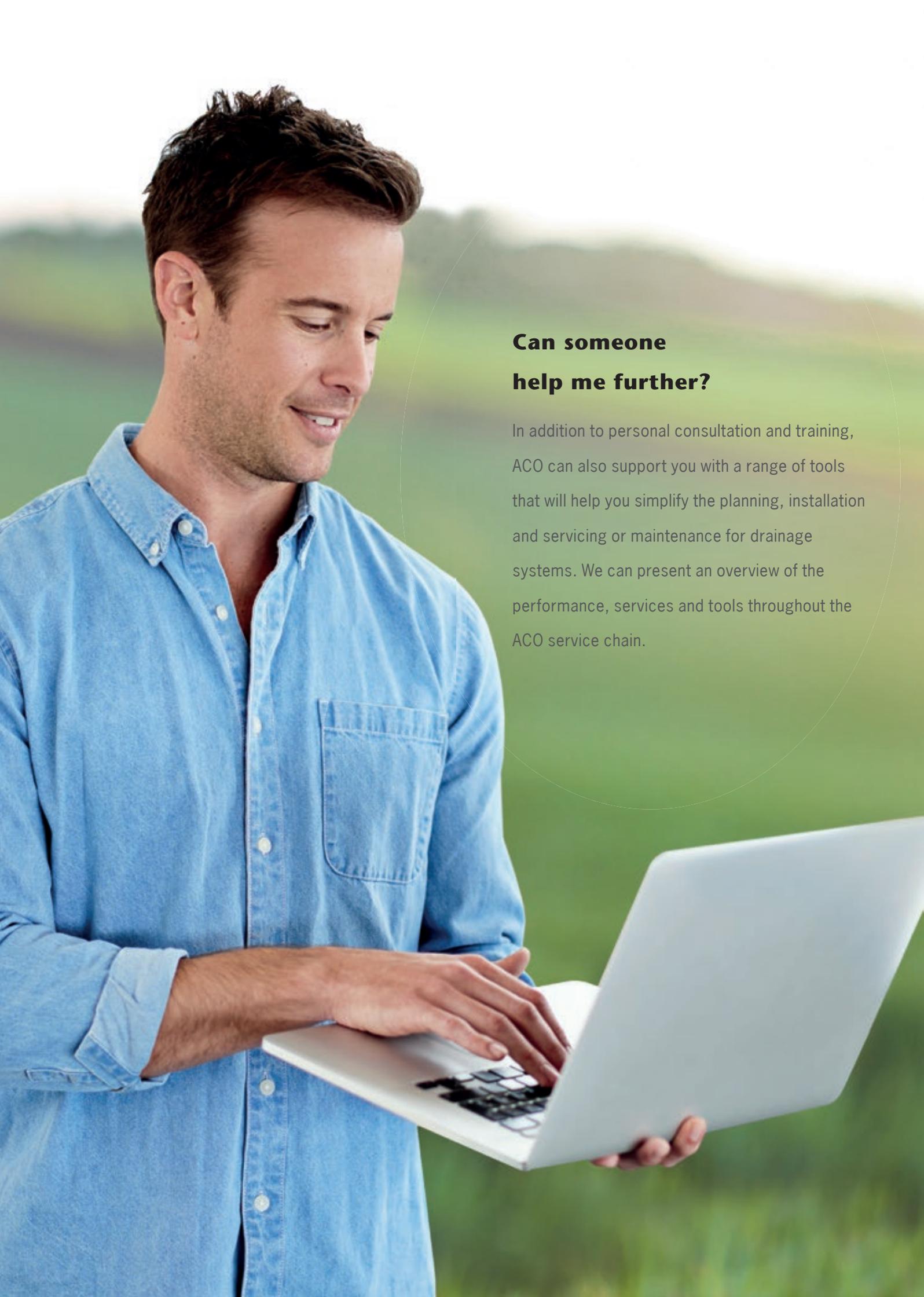
Both the processing of steel as well as stainless steel is a core competence of ACO in the various production facilities of the ACO Group worldwide. High investment sums ensure that our production facilities are always state of the art. The high qualification of the skilled workers ensures high product quality. Our own systems for surface protection and surface refinement are used, for example, in the production of ACO Drainlock gratings.

Concrete



ACO Concrete – durable and safe

In the field of tank construction for separation and dewatering technology, concrete still plays a decisive role. ACO containers for drainage technology are made of high water impermeable concrete and have a very high resistance and stability. The containers can be used as separators, pumping stations, emergency systems or special shafts and can also be provided with a plastic coating or cladding liner. ACO concrete tanks are therefore a durable solution for drainage and treating water.



Can someone help me further?

In addition to personal consultation and training, ACO can also support you with a range of tools that will help you simplify the planning, installation and servicing or maintenance for drainage systems. We can present an overview of the performance, services and tools throughout the ACO service chain.



Want to take a look?

Experience a virtual 360-degree tour through our showroom in Büdelsdorf and learn interesting details about our products, applications and services.

Presentable – References

Would you like to know which drainage projects ACO has successfully completed? You will find what you are looking for on our website.

What is happening? Events and Seminars

You can find out more about our events regarding current construction-related subjects on our websites. Register for our newsletter and you will regularly receive the latest news from the fields of urban, infrastructure, industry as well as logistics.



Access! askACO Downloads on the Web

The service area of our website will enable you to find important information and instructions that will make your work easier.

- Brochures
- Technical Manuals
- Price lists
- Installation instructions and installation videos
- Approvals and Certificates
- Article description texts
- Standards
- Separator dimensioning
- GET Information
- Newsletter

Beautiful and good – ACO DRAIN® Design Configurator

You can choose from a selection of different materials and numerous grating designs to combine your individual channel design at www.draindesign.de

Calculate rainwater harvesting – ACO Rain4me Configurator

Utilising rainwater at home? Configure your package! www.rain4me.aco

Premises-planned drainage – ACO Project Manager

Your planning tool for drainage: www.projectmanager.aco



Who can assist you? Find a contact partner

Do you need prompt assistance with technical or commercial questions? The corresponding area of our website will enable you to simply enter the postcode of your construction site or location.

What's the weather like? ACO Construction Weather

Rain? Sunshine? Wind? Our website will assist you to find out what you can expect on your construction site in the next few days.



A Round Range – ACO 360° service for separators and pump stations

Commencing with assembly, installation, general inspection, servicing and maintenance on to repairs, conversions and modernisations and up to, and including, regular appropriate disposal – you will receive everything you require from one single source with ACO.

All Organised – Customer Service and Spare Parts Service

You require a fitter or you want to order a spare part? Utilise our nationwide customer service.

All the information is at www.galabau.aco/askACO



Contact to the companies of the ACO Group

What will rain water management look like in the future?

Which drainage products will support your project in the best way?

askACO: our whole team comprising local and international experts is available for your project and your questions from day one – also up to, and including, continuous service performance.

www.galabau.aco

ACO Tiefbau

Linear drainage, point drainage, manhole covers, rainwater treatment, tree protection

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Germany
Tel. +49 4331 354-500
Fax +49 4331 354-358
tiefbau@aco.com
www.aco-tiefbau.de

ACO Hochbau

Drainage systems for house and garden, draining facades, patios and terraces, honeycomb grass pavers, gravel stabilisation, linear infiltration, shoe scraper

ACO Hochbau Vertrieb GmbH
Neuwirtshauser Strasse 14
97723 Oberthulba/Reith
Germany
Tel. +49 9736 41-60
Fax +49 9736 41-20
hochbau@aco.com
www.aco-hochbau.de

ACO Haustechnik

Attachments and gully tops for green roofs and parking decks

ACO Passavant GmbH
Im Gewerbepark 11c
36457 Stadtlengsfeld
Germany
Tel. + 49 36965 819-0
Fax + 49 36965 819-361
haustechnik@aco.com
www.aco-haustechnik.de

Inotec

Channel systems and construction elements for sports facilities and recreational facilities, special solutions made of stainless steel for gardening and landscaping

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Garten & Landschaft**

ACO – Partner of the
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Gardening, Landscaping
and Sports Field Construction

**ACO Severin Ahlmann
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