



# ACO Terrace and Façade

WATER MANAGEMENT SOLUTIONS







MultiDrain MD Brickslot, Blavatnik building, Oxford



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## WATER MANAGEMENT SOLUTIONS

With building life expectancies increasing and permitted discharge rates being restricted, managing the movement of water from the roof to sewer can be a complex challenge. Careful consideration of attenuation requirements and hydraulic loads is needed to meet these challenges and select an appropriate and long-lasting drainage solution.

### Managing water effectively, sustainably and aesthetically

This brochure examines the specific challenges that roof gardens, roof terraces, level thresholds and façades present to specifiers and contractors.

To tackle some of the symptoms of climate change, the reuse of rainwater and the requirement to make use of it at source are becoming increasingly important aspects of planning conditions imposed by local authorities.

We will explore the ACO solutions which can be used to cater for these unique and varied requirements.

### Design services and professional development

ACO Technologies plc has over 30 years of expertise in design and professional development to support the use of drainage solutions for managing water.

For free design advice on water management solutions for terrace and façades email [abdtechnical@aco.co.uk](mailto:abdtechnical@aco.co.uk)

To discuss our CPD programme email [uk-ask@aco.co.uk](mailto:uk-ask@aco.co.uk)

## Terrace and balcony drainage solutions

On a terrace or balcony, the primary aim is to remove the water from the surface as soon as possible enabling safe access and preventing water ingress into a building. These areas are often more exposed, receiving rainwater from the surface area plus other contributing areas, including run-down from the façade.



ACO FreeDeck, Adidas Headquarters, Germany



Safe barrier-free, accessible buildings can be assisted by height adjustable drainage solutions for millimetre-precise fitting in limited installation depths. As well as preventing water ingress drainage solutions can be selected that reduce splash-back onto glass balcony doors to maintain aesthetics.

Systems such as ACO AS350 threshold drainage channels contain a side clamp to affix the building's water proofing membranes; keeping the seal between the building and the drain.

For a raised or suspended deck structure including permeable decking, solutions such as ACO FreeDeck open-sided drainage channels provide a path of least resistance to the discharge point, collecting water from both the surface and the sub-surface. Available in a variety of fixed and adjustable heights and in stainless or galvanised steel, FreeDeck is an extremely versatile solution with a range of grating styles to complete the look.

At One New Change London, a large three storey building consisting of retail and office space, there was an opportunity to create a rooftop terrace with vibrant views of the magnificent St Paul's Cathedral. Here, aesthetics were a prime consideration for the public terrace which overlooks the great cathedral and ACO Modular 125+ drainage channels in grade 304 stainless steel, were the solution.

## ACO Profiline X

ACO Profiline X channels are an advanced threshold, roof and balcony drainage system combining line drainage with point drainage by using an open sided drainage channel system to collect and convey rainwater to drainage points within a raised or suspended deck structure. It is particularly suitable for loose installation in roof garden, patio, terrace and balcony areas.

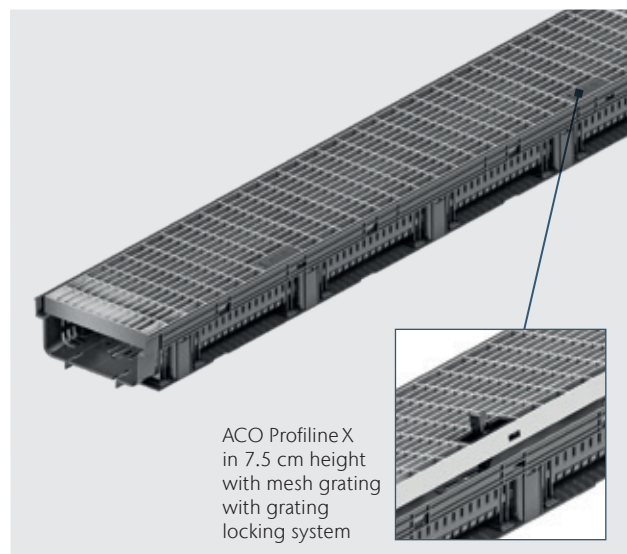
For more information on ACO Profiline X go to:  
[www.aco.co.uk/products/profilinex](http://www.aco.co.uk/products/profilinex)

### ACO Product Benefits

- Grated open sided channel drainage system
- Channel is made of corrosion-resistant glass-fibre reinforced plastic (PP-GF)
- Channel can be easily shortened with no risk of corrosion
- Gratings are available in galvanised or stainless steel
- Easy-lock grating system



ACO Modular 125+, One New Change, London



ACO Profiline X

## Façade and threshold drainage

Ground level façade and threshold drainage protects the exterior and ingress points of buildings, capturing rainwater runoff from the building itself and the surrounding area. Considerations include aesthetics for these public access points, heel safe options and adaptable linear, radial and bespoke designs to follow the building contours and curves.



ACO radial drainage at Neo Bankside, London



At the Blavatnik school of Government, a discreet protective line of ACO MultiDrain MD Brickslot has been installed to collect water from the 1500m<sup>2</sup> 'Royal Coffee' granite open paving before it reaches the building and its entrances. The building integrated sustainable systems throughout, including a partial green roof on two levels. This 'living roof' was covered with vegetation to enhance biodiversity, reduce the heat island effect and attenuate stormwater runoff.

The ten-storey extension to the Tate Modern on London's bankside has a unique geometrical design where the external walls intersect the ground at seven different angles. With a standard building, this angle would be 90° but at Tate, 17 bespoke versions of ACO MultiDrain MD Brickslot were custom engineered to match the varying angles exactly.

These provide discrete drainage from both the walls and the surrounding surface, along with custom units for access and maintenance. A unique hanger system was put in place so that the bespoke ACO Brickslot followed the contours of the construction.

## AS301 box channel

At One New Change, London AS301 Box channel surrounds the facade between two adjacent large buildings. This bespoke channel was chosen for the premium stainless steel construction and extra wide channel width for increased hydraulic ability.

For more information on ACO AS301 go to:  
[www.aco.co.uk/products/as301-box-channel](http://www.aco.co.uk/products/as301-box-channel)



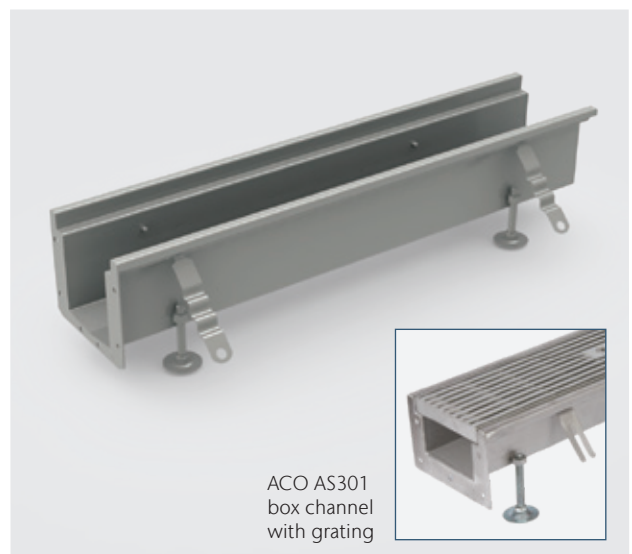
Bespoke ACO MultiDrain MD Brickslot,  
Tate Modern extension, London



ACO MultiDrain MD with ductile iron grating,  
Beecroft physics department, Oxford

### ACO Product Benefits

- Suitable for use in external and internal drainage applications
- Compatible with ACO Vinyl Seal – ideal for facade sealing
- Variable height-adjustable
- Standard and high security locking available
- Available in 304 or 316 grade stainless steel or galvanized mild steel



ACO AS301  
box channel  
with grating

ACO AS301 box channel

## Roof gardens

Roof Gardens are green roofs, which can be partially or completely covered with vegetation and a growing medium, planted over a waterproofing membrane. They are an increasingly important part of sustainable urban developments, including sustainable urban drainage as they absorb rainfall and reduce flooding, whilst enhancing biodiversity and amenity for residents.



ACO RainDrain B125 grated channel system, The Garden at 120, London



For partially green roofs the paved sections around these green areas often require discreet channel drainage solutions, such as ACO AS1010 Brickslot channel, where the slot can often be concealed within pointing lines. Made from slim stainless steel Heelsafe inlets they are available in both a linear and radius options.

Other drainage options for flat roofs include point drainage such as ACO Rainwater Outlets which are manufactured from diecast marine-grade LM6 aluminium silicon alloy. This grade of aluminium alloy is highly corrosion resistant, weather-proof and resistant to ultra-violet radiation.

Channel and rainwater outlets can both be combined with roof attenuation systems that store rainwater at source, control surface water run-off, mitigate the impact of urban development and are used for the creation of passive irrigation systems. With the development of the 'London Plan' emphasis is on the development of green roofs that "support sustainable urban drainage by absorbing rainfall to reduce flooding, and enhance biodiversity".

## ACO RoofBloxx

ACO offer RoofBloxx, a roof attenuation system for blue, and blue/green roofs. Comprised of a shallow, high-strength, adjustable geocellular storage void and roof outlet flow control system. ACO RoofBloxx is fully compatible with ACO roof outlets, downpipes and surface water drainage systems. Hydraulic design guidance is also provided as standard by ACO's in-house technical design team, using bespoke software.

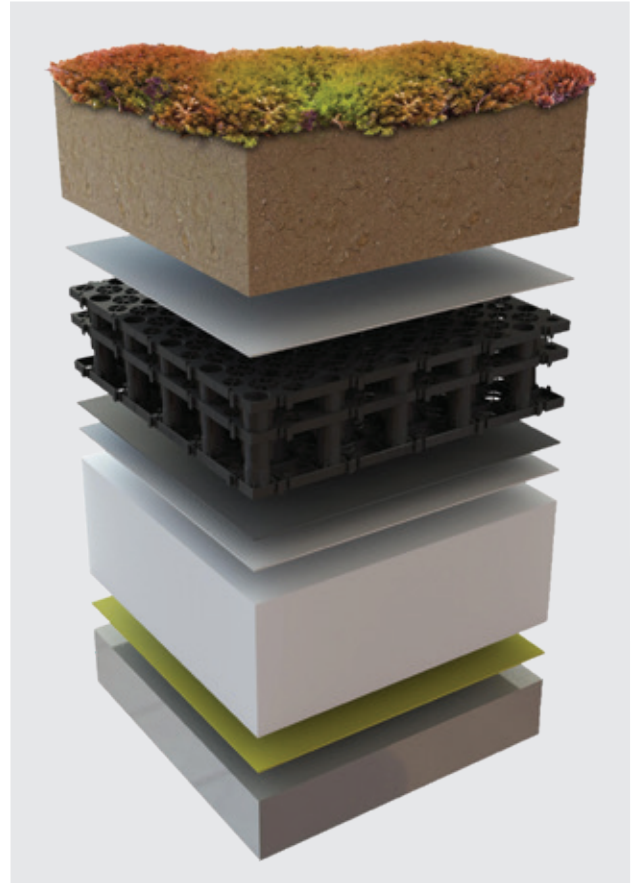
For more information on blue/green roofs go to:  
[www.aco.co.uk/blue-green-roofs](http://www.aco.co.uk/blue-green-roofs)

### ACO Product Benefits

- Modular structure for design flexibility
- Shallow, high strength design (800KN/m<sup>2</sup>)
- Adjustable storage depth
- Suitable for use beneath permeable and impermeable surfaces
- Passive irrigation attainable with capillary wick
- Compatible with ACO roof outlets, downpipes and surface water drainage
- Can be incorporated into flat roof systems, including warm roofs, inverted roofs, podium deck and ballasted roofs



View of One New Change, London



ACO RoofBloxx

# Further Learning

## Design Support Services

Surface water management system design can often be a complex task. Success in combining products and processes requires a thorough understanding of how these different elements work together.

The ACO Design Services team is able to work closely with you through the entire design process to ensure accurate and cost-effective product selection is made.

Services we offer include (free and without obligation):

- Whole system design, from collection to the attenuation of surface water
- Hydraulic calculations and AutoCAD detailing
- Parts schedules

For design enquiries go to **[www.aco.co.uk/design-+-support-services](http://www.aco.co.uk/design-+-support-services)**



## ACO Professional Development

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

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.

### Webinars

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.

### Seminars

ACO is bringing the experts to you via our programme of regional events, and by sharing information from key influencers within the industry as well as more specific product information. ACO's seminar events will include opportunities to enhance existing knowledge as well as network and discuss thoughts and ideas with other delegates.





# askACO







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  - ACO Water Management
    - Civils + Infrastructure
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ACO Water Management  
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**ACO. creating  
the future of drainage**

