



## **ABOUT ACO**

Our built environment is becoming ever more complex. Applications are becoming more sophisticated and the increasing pressure of regulations and standards makes achieving design, performance and financial goals even tougher.

At ACO, our mission is to eliminate design risk, reduce installation and life costs while delivering exceptional finish and performance in every product application.

ACO's global resources and fabrication capacity deliver added value for customers whether they require a standard or engineered solution.

Confidence is further assured thanks to the use of quality systems that are in accordance with ISO 9001:2015.

ACO Building Drainage is a division of ACO Technologies plc and part of the worldwide ACO Group. The Group has sales in excess of £800 million worldwide with production facilities in the UK, Germany, France, Switzerland, Denmark, Spain, Poland, Czech Republic, Australia and the USA. In total more than 4,500 people are employed in over 40 countries throughout the world.





ACO has extensive experience of providing solutions for the hotel and leisure industry. Our portfolio of products and services support the following applications:

- ✓ Entrance & Lobby
- ✓ Kitchen
- ✓ Bathroom
- ✓ Spa & Pool

- ✓ Roof, Terrace & Facade
- ✓ Parking
- ✓ Garden & Landscaping





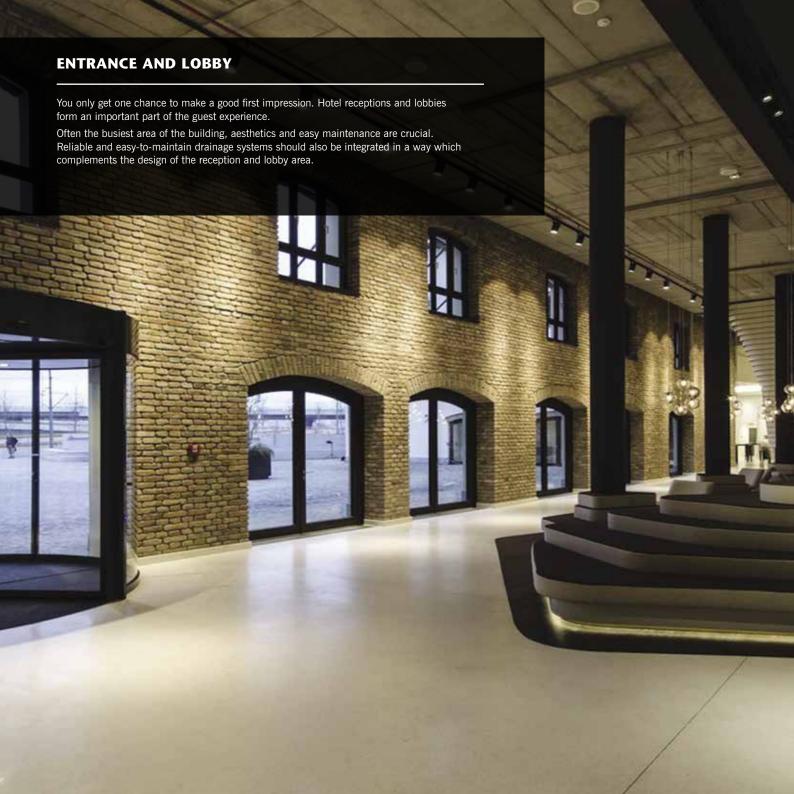






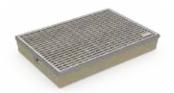






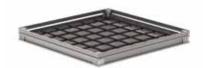
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## **ACO SYSTEM SOLUTIONS**



#### **ACO DRAINMAT**

ACO DrainMat is a high-quality matwell assembly that eliminates the risk of water pooling at house entrances. The system is a traditional matwell and is available in a choice of four difference surfaces: Robust galvanised steel mesh, tough aluminium and rubber, and two colours of carpet with aluminium.



#### **ACO ACCESS COVERS**

The ACO UniFace™ range is designed to blend perfectly with a wide selection of both hard or flexible floor infills of thicknesses up to 15mm. Providing simple access to underlying services recessed access covers are available in either aluminium, hot dipped galvanised steel or stainless steel grade 304 as standard.



## **ACO STAINLESS STEEL GULLIES**

ACO gullies are the cumulation of many years of practical experience and design expertise in stainless steel fabrication technologies. All the systems are manufactured in austenitic stainless steel grades 304 or 316 and are fully pickle passivated in order to ensure corrosion free joints.



## **ACO TOTALFLOW GULLY**

This system is particularly well suited for use in areas of high pedestrian traffic and is used in a wide range of applications including shopping centres, supermarkets, railway stations, leisure centres, public buildings, hotels, sports stadiums and airports. It's compact design allows easy cleaning and maintenance.



## **ACO ENGINEERED SOLUTIONS**

ACO can provide a tailored engineered solution to meet the specific engineering and design requirements of your project.

Solutions developed by ACO's in-house technical design team can accommodate a wide variety of channel lengths and depths, and access cover requirements to suit your needs. Locks can also be added to ACO products if security is a concern.



## ACO AS401 FIRE LIFT CHANNEL

A channel designed for fire lifts. A large area that can take a large amount of water over a small amount of time.



#### ACO AS1010 BRICKSLOT CHANNEL

A discrete solution allowing a 16mm visible profile. This can be central or offset to help avoid clashing with other finishes.



## ACO AS1050 DISCRETE CHANNEL

Somewhere between an AS301 and an AS1050. This channel has a visible profile of 58mm which can make the channel a feature.



#### ACO RADIUS CHANNEL

Not all patterns are straight, this will allow you to match a channel around a revolving door or fountain. This can be discrete or have clear access using grates.





# ACO KITCHEN CHANNEL SYSTEMS

The ACO HygieneFirst drainage system is designed for effective drainage and barrier free movement. It drains water directly from the pavement surface or down a façade via the grate.



## **ACO STAINLESS STEEL GULLIES**

ACO hygienic gullies are available in various body sizes to cater for different flow rates and construction requirements including shallow construction depths and applications where preventative fire measures are required. ACO hygienic gullies are certified according to EN 1253.



## ACO PIPE™

A wide range of socketed waste pipework systems in thinwall stainless steel for above and below ground drainage applications. Manufactured from 304 grade stainless steel as standard or, as an option, 316 grade stainless steel, ACO Pipe products provide a modern alternative to PVC-u and cast iron soil and waste pipework.



### ACO MODULAR 125+

ACO's Modular 125+ linear stainless steel channel drainage system, is a standard solution for easy design and installation. Benefiting from a v-shaped profile to enhance flow efficiency at low flow rates, it is available in a wide range of off-the-shelf options including a choice of lengths, inverts and gratings. It can be easily modified to suit the specific and unusual requirements of individual projects.



### **ACO ACCESS COVERS**

The ACO UniFace™ range is designed to blend perfectly with a wide selection of both hard or flexible floor infills of thicknesses up to 15mm. Providing simple access to underlying services recessed access covers are available in either aluminium, hot dipped galvanised steel or stainless steel grade 304 as standard. ACO UniFace™ covers are tested to Fabricated Access Cover Trade Association (FACTA) specifications.

# DRAINAGE THAT DELIVERS HYGENIC PERFORMANCE

ACO offers sustainable and integrated drainage systems designed to protect your business and environment. Our aim is to constantly improve every aspect of operations safety, hygiene and functional performance to meet the applicable standards for food processing application.

ACO HygieneFirst drainage systems fulfil the stringent hygienic requirements to minimise harmful bacteria and pathogen contamination of food arising from drainage elements by applying relevant hygiene design principles reserved for food contract surfaces by the implementation of BS EN 1672, BS EN ISO 14159 and EHEDG Document 8 requirements to drainage element design.

## **ACO ENGINEERED SOLUTIONS**

Our in-house technical design team can develop an engineered solution to suit the requirements of your project. We can modify outlet positioning, branch channel layouts and even manufacture your drainage system in 316 grade stainless steel if your application uses high levels of salt or citric acid.

In a commercial kitchen a HygieneFirst channel is strongly recommended. An Engineered Solution will allow non-standard outlet positioning along with complicated corner and branch channel layouts. If there are high levels of salt/citric acid, we recommend 316 grade stainless steel. However the standard 304 grade stainless steel is suitable for most commercial kitchens.



# ACO AS201 MEMBRANE CLAMP CHANNEL

A vinyl clamp channel that allows flexibility. This can accommodate complicated layouts and outlet connections.



#### ACO AS301 BOX CHANNEL

The standard profile channel. Easy to access and maintain. This can allow for some complicated layouts and outlet connections.



#### ACO ASSO1 EASY-CLEAN CHANNEL

An easy-to-clean channel with a curved side profile.



## **ACO TUNDISH**

There is standard tundish product in our range. These can be attached to any of our gratings to suit your connections.



#### **ACO LIPUMAX**

This range of below ground grease separators are designed to efficiently separate fats, oils and grease from waste water. Using advanced design, materials and manufacturing techniques, roto-moulding technology gives the below-ground tanks the structural integrity to withstand the rigours of site handling and installation as well as hydrostatic forces.



## **ACO LIPUJET**

Free-standing grease separator units. Available in a wide range of sizes and specifications, LipuJet grease separators are easy to transport and assemble. LipuJet products come with integrated sludge traps and are manufactured in either stainless steel or polypropylene to suit different customer requirements.



Grease separation and lifting in one solution. ACO LipuSmart products integrate the functions of grease separation, sampling, drainage using a lifting plant and a control system for the general system into one product.



## **ACO LIFITING STATION**

Lifting stations are specified when the grease separator is installed below the backflow level. Manufactured from stainless steel or polypropylene, ACO lifting stations are designed in accordance with BS EN 12050-2 which requires a twin pump system to improve system reliability.





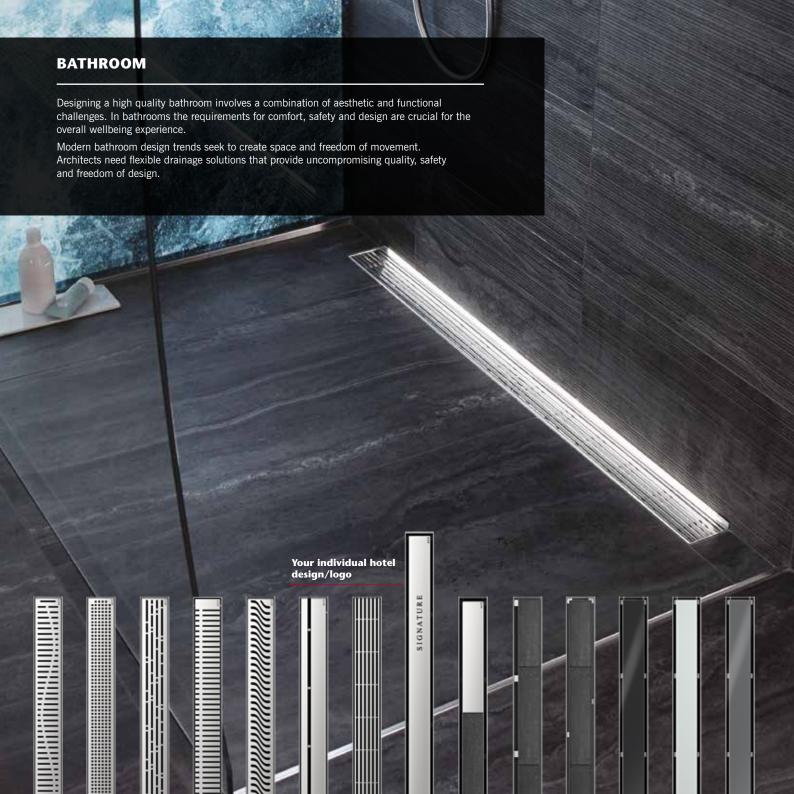
## **INSTALLATION & SERVICE**

At ACO Building Drainage we are committed to supporting our customers with a complete grease management solution that meets your specific needs for your waste management requirements. In addition to our range of solutions, we have the level of in-house technical expertise required to provide customers with guidance and support at every stage of a project from system specification to design.

We can provide support through our preferred installation and service partners who will be able to handle system installation and commissioning and, if required, undertake the ongoing servicing and maintenance of your grease management solution.

Our ability to provide commercial kitchen operators with a complete grease management solution, means the design, installation and maintenance of the system is an easy, stress-free process which has the minimum impact on the business in terms of downtime and sales revenue.

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## **ACO SYSTEM SOLUTIONS**



## **ACO SHOWERDRAIN**

Stainless steel line drainage. ACO ShowerDrain E+ offers the perfect way to create generously sized, uniform bathroom designs without any interruptions, changes in materials or barriers.



## **ACO SHOWERDRAIN C**

Stainless steel line drainage.
ACO ShowerDrain C offers a minimum building height of
65mm to unfinished floor level. Due to the removable foul
air trap the full access to the pipeline is provided helping
for the optimum cleaning of the channel.



## **ACO SHOWER GULLIES**

We offer a range of stainless steel gullies for shower, wetroom and bathroom applications. Our designs can be used with flexible sheet flooring, tiles and vinyl. Gullies can be specified with luxury wooden gratings or a choice of beautifully designed, electro-polished, barefoot friendly, gratings manufactured from high quality grade 304 stainless steel. Anti-slip gratings are also available.





## **ACO ENGINEERED SOLUTIONS**

One of the best ways to reduce the number of outlets required is to consider an engineered solution. You may also need a channel to be discrete, to match an existing layout or go up against or under a wall. Engineered solutions can remove any complications which might occur with standard non-linear solutions.

For swimming pool drainage or drainage in coastal areas, where chlorine or salt water are an issue, your drainage system may need to be manufactured in 316 grade stainless steel. For standard applications where this is not the case, 304 grade stainless steel will be suitable.



# ACO AS201 MEMBRANE CLAMP CHANNEL

A vinyl clamp channel that allows flexibility. This can be specified for use with complex layouts with various corners, branches and outlet connections.



#### ACO AS301 BOX CHANNEL

The standard profile channel. Easy to access and maintain, this is suitable for use with complex drainage system layouts and outlet connections.



## ACO AS601 SLOT CHANNEL WITH TOEBAR

This easy to maintain discrete channel can be specified for bathroom use and is foot-friendly.



#### ACO AS701 UPSTAND CHANNEL

Benefiting from the same profile design as ACO's AS301 channel, ACO AS701 upstand channel can be fitted so it is flush against your bathroom wall. It is also possible to tile over the channel flange to ensure a fully watertight finish.

## SPA & POOL

As the central area of many space and leisure facilities, spa and pool areas require special attention to detail when it comes to design and drainage. In addition to outstanding aesthetics, particular focus must be given to safety and the hygienic performance of the drainage systems specified. Drainage solutions must be manufactured from highly corrosion resistant materials to cope with aggressive agents including chlorine, and/or weather conditions. Systems must also comply with strict safety requirements.







ACO provides a full range of stainless steel gullies for shower, wetroom and bathroom applications. ACO designs can be used with flexible sheet flooring, tiles and vinyl. Gullies can be specified with luxury wooden gratings or a choice of beautifully designed, electro-polished, barefoot friendly, gratings manufactured from high quality grade 304 stainless steel. Anti-slip gratings are also available.



## **ACO SHOWERDRAIN**

Stainless steel line drainage.
ACO ShowerDrain E+ offers the perfect way to create generously sized, uniform bathroom designs without any interruptions, changes in materials or barriers.



## **ACO SHOWERDRAIN C**

Stainless steel line drainage. ACO ShowerDrain C offers a minimum building height of 65mm to unfinished floor level. Removable foul air traps provide full access to pipework and help to enable efficient cleaning.



## **ACO SLOT CHANNEL**

Stainless steel slot drainage.

ACO's modular range with standardised 20mm slot width provides a highly versatile system. Accessories such as corner and branch units and a choice of gratings for wide range of load classes make this stainless steel system a perfect option for many applications. Anti-slip gratings are also available.



## **ACO ENGINEERED SOLUTIONS**

ACO can provide effective drainage solutions which are engineered to meet the technical requirements of your application and complement the design of your swimming pool or spa area.

For swimming pool areas where chlorine is used, 316 grade stainless steel must be specified. 316 grade is also essential for drainage systems that handle sea or salt water. If required, locks can be provided for added security although this is usually avoided where possible in order to facilitate easy cleaning.



## ACO AS301 BOX CHANNEL

This is the standard profile channel specified for use in chlorinated areas.

Manufactured from 316 grade stainless steel and similar in design to ACO's Modular 125+, ACO AS301 channel is easy to access and maintain.



# ACO AS601 SLOT CHANNEL WITH TOEBAR

This easy to maintain discrete channel can be specified for bathroom use and is foot-friendly.



#### ACO AS701 UPSTAND CHANNEL

Benefiting from the same profile design as ACO's AS301 channel, ACO AS701 upstand channel can be fitted so it is flush against your bathroom wall. It is also possible to tile over the channel flange to ensure a fully watertight finish.



#### ACO RADIUS CHANNEL

Curved walls and swimming pool designs are common in many space and pool applications. ACO's technical team can design engineered radius channels to suit the design needs of your application.





## **ACO FREEDECK**

The ACO FreeDeck system is designed for effective drainage and barrier free movement. It drains water directly from the pavement surface or down a façade via the grate.



#### ACO ROOF OUTLETS

The extensive range of products included in the ACO range of roof outlets provides rainwater drainage solutions for a wide range of applications. Suitable for flat or low pitch roofs, a watertight joint is produced by clamping the membrane to the body.



#### **ACO TOTALFLOW GULLY**

This system is particularly well suited for use in areas of high pedestrian traffic and is used in a wide range of applications including shopping centres, supermarkets, railway stations, leisure centres, public buildings, hotels, sports stadiums and airports. It's compact design allows easy cleaning and maintenance.



### **ACO DECKLINE 125**

A shallow invert surface drainage system, manufactured from hot-dipped galvanised steel to BS EN ISO 1461:2009. Grating choice includes galvanised steel perforated, slotted and composite black and white to Load Class C250 to BS EN 1433. All gratings supplied complete with locking mechanism.



## **GM-X PIPE**

Galvanised steel pipe and fittings system.

A gravity drainage system designed for external applications which require a robust and highly durable system. GM-X Pipe has a two-stage socket design utilising the GM-X seal to provide rigid and solid, buckle-proof connection of fittings, guaranteeing joint tightness.



### **ACO ACCESS COVERS**

The ACO UniFace™ range is designed to blend perfectly with a wide selection of both hard or flexible floor infills of thicknesses up to 15mm. Providing simple access to underlying services recessed access covers are available in either aluminium, hot dipped galvanised steel or stainless steel grade 304 as standard. ACO UniFace™ covers are tested to Fabricated Access Cover Trade Association (FACTA) specifications.

## **ACO ENGINEERED SOLUTIONS**

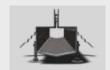
If there is restricted depth, restricted outlet positions or a specific layout, we can provide an engineered solution to match. We can also run water flow calculations to ensure your channel system will be suitable for its environment. If this is in a coastal environment we would recommend using 316 grade stainless steel to avoid any damage by the sea air.

These systems can also be locked if security is a concern. We can also make a number of different grating styles to suit your needs.



## ACO AS301 BOX CHANNEL

Manufactured from 316 grade stainless steel or galvanised mild steel if required, ACO AS301 box channel is easy to access and maintain.



#### ACO AS1010 BRICKSLOT CHANNEL

A discrete solution allowing a 16mm visible profile. This can be central or offset to avoid any conflict with other finishes.



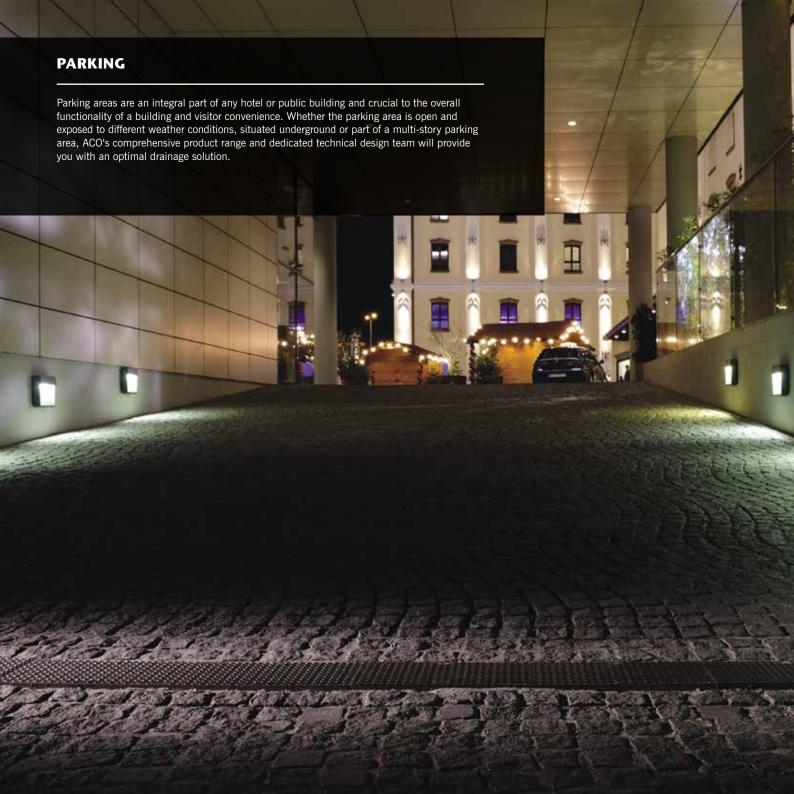
#### ACO AS1050 DISCRETE CHANNEL

ACO AS1050 Discrete Channel has a visible profile of 58mm, which enables this channel to be used as a design feature.



#### ACO RADIUS CHANNEL

ACO's technical team can design engineered radius channels to suit the design needs of your application.





## **ACO MULTIDRAIN**

Drainage channels with design gratings.
The ACO MultiDrain range is designed to provide benefits at every stage from design and installation to ongoing maintenance. It offers a variety of load class options, sizes, edge rails and the widest choice of standard, design or customised gratings.



#### **ACO MONODRAIN**

ACO Monoblock is a one-piece channel drainage system that delivers multiple benefits including safety and sustainability, economical and efficient installation and aesthetic choices across various applications.



#### **ACO FREESTYLE**

The ACO Freestyle offering is a unique customer-led grating design that gives architects and commercial property owners the freedom to create fully bespoke drainage grating designs for the external environment.



## **ACO QMAX**

High capacity slot drainage.

ACO Qmax® satisfies the demand for a versatile, high capacity slot drainage system for applications. It maximises the hydraulic capacity, providing effective storage, attenuation, and eliminating carry over in stormwater conditions.



### **ACO DECKLINE**

Line drainage for parking decks.

ACO DeckLine channels are made of highly resistant materials for long lasting protection of the construction. The watertight body and reliable connection with waterproofing systems prevent the risk of leakage.



## **ACO LIGHTPOINT**

ACO LightPoint can enhance many professionally designed landscaping applications by providing efficient and illuminated drainage.



Where security, loading and a restricted depth is a concern, we can provide a number of solutions to suit your needs. Typically in higher loading areas these channels are locked.

We can also run water flow calculations to ensure your channel system will be suitable for its environment. If this is in a coastal environment we would recommend using 316 grade stainless steel to avoid any damage by the sea air.



### ACO AS301 BOX CHANNEL

Manufactured from 316 grade stainless steel or galvanised mild steel if required, ACO AS301 box channel is easy to access and maintain.



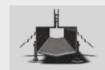
## ACO AS601 SLOT CHANNEL

A discrete slot channel system with a 50mm visible profile.



#### ACO AS901 HI LOAD CHANNEL

Manufactured from 316 grade stainless steel or galvanised mild steel as required, ACO AS901 Hi Load Channel has a load class of up to D 400 making it perfect for car park applications.



#### ACO AS1010 BRICKSLOT CHANNEL

A discrete solution with a visible profile of 16mm, ACO AS1010 Brickslot Channel can be central or offset as required.



## **ACO SYSTEM SOLUTIONS**



## **ACO GRAVELGUARD**

ACO GravelGuard, a ground stabilisation system, creates a drivable surface which enables the natural infiltration of rainwater into the ground and enhances pedestrian comfort.



## **ACO HEXDRAIN BRICKSLOT**

Manufactured from recycled polypropylene, ACO HexDrain® Brickslot is suitable for pedestrian and vehicle traffic up to Load Class A 15. The high quality ACO HexDrain Brickslot channels also clip together, allowing for quick and easy installation.



## **ACO MULTIDRAIN**

Drainage channels with design gratings. The ACO MultiDrain range is designed to provide benefits at every stage from design and installation to ongoing maintenance. It offers a variety of load class options, sizes, edge rails and the widest choice of standard, design or customised gratings.



## **ACO FREEDECK**

Line drainage.

The ACO FreeDeck system is designed for effective drainage and barrier free movement. It drains water directly from the pavement surface or down a facade via the grate.



## **ACO UNIFACE**

ACO Access covers provide quick and easy access to underground services and enables decorative floor finishes to be maintained with minimal interference.



## **ACO STORMBRIXX**

ACO StormBrixx is a unique and patented plastic geocellular stormwater management system for attenuation and soakaway (infiltration) usage.





## PRESTIGIOUS HOTEL 'THE LONDONER' CHOOSES ACO

High performance bathroom, kitchen and leisure solutions



## THE PROJECT

Being constructed in London's Leicester Square as part of the redevelopment of Leicester Square and the West End, 'The Londoner' hotel will comprise a new 350 bedroom luxury hotel and cinema complex which will include numerous bars and restaurants as well as swimming and leisure facilities.

Being developed for The Edwardian Hotel Group, The Londoner will extend eight storeys above ground and, in a first for the city, six storeys below, making it the deepest building in London. Designed to complement existing properties, the hotel will work as a series of independent but connected venues as well as operating as a venue for the hosting major film premieres, once the role of the Odeon Cinema which was previously located at the site. Its opening is scheduled for 2020.

#### THE BRIEF

ACO Building Drainage was approached by architects 'Arup Manchester' and 'Woods Bagot Architects' to provide a comprehensive range of drainage solutions for the project: An engineered grease management system and drainage channel for the complex's commercial kitchens; shower channels for guest bedrooms, and channel for use in the swimming pool and leisure complex.

#### THE SOLUTION

#### Grease Management & Kitchen Channel

A key challenge was the provision of a grease management system for the hotel's kitchen – a sizeable commercial kitchen which will produce

around 1500 meals per day and which, unusually, is located six storeys below street level.

The ACO team had to develop a solution which could not only manage the waste fats, oils and grease (FOG) produced by such a sizeable commercial kitchen operation but also pump separated FOG from six floors below ground back up to street level. To ensure the system worked, it was also critical to minimise the amount of pipework that was required.

ACO Building Drainage's technical design team specified a round 'ACO LipuJet' free-standing above-ground grease separator unit, ACO lifting station and related control boxes.

Certified to BS EN 1825, ACO LipuJet separators are designed for applications where free-standing grease separator units are required and are manufactured from high density polyethylene for maximum durability.

Certified to EN 12050, ACO Lifting Stations are specified when the grease separator is installed below the backflow level. Available in a range of sizes to suit different project requirements, the ACO Lifting Station comprises a twin pump system for improved system reliability. It also benefits from an energy-saving channel impeller on the pump to reduce blockages.

For The Londoner, an NS20 size ACO LipuJet separator – the largest in the ACO LipuJet range – was specified to ensure the system could cope with the requirements of the development's sizeable commercial kitchen. To cope with the unusual project requirements, ACO's in-house technical team modified the ACO LipuJet unit by adding twin high capacity disposal points, mounted in series.

The team also worked with the pipework designers by making recommendations to shorten the proposed pipe route and running flow rate calculations to ensure pipe network and the grease separation system would effectively pump fats, oils and grease up six storeys of the building.

To cope with the shallow slab depth construction, ACO Building Drainage specified ACO AS301 box channel for use in the hotel's commercial kitchens. Outlet pipes of up to 1.5 metres in length were also specified and unusually travelled through the slabs. Available with a choice of grating and manufactured from grade 304 or 316 stainless or galvanised steel, the ACO AS301 box channel linear drainage system could be easily engineered to suit the specific requirement of the project.

#### Shower channel

ACO Building Drainage was required to specify shower channel for the hotel's 350 guest bedrooms, many of which benefit from two shower units. To cope with the construction's shallow slab depth, the team specified 'ACO ShowerDrain E' channel.

Designed specifically for use in shallow slab depth applications, the total installation height for ACO ShowerDrain E channel can be as low as 30mm. The channel is manufactured from grade 304 stainless steel for optimum durability, is tested to EN 1253 1 and is supplied with sound insulation accessories, making it perfect for use in hotels and apartment complexes. The channel is supplied ready to install to ensure installation is a quick and easy process. It can also be provided in special lengths upon request.

### Swimming pool channels

ACO discrete twin slot channels were engineered and specified for use in the swimming pool and leisure areas. The specification of a twin slot channel design ensures that drainage of the pool surround areas will be independent of the deck level pool water recirculation drainage channel. With a 80mm installation height with mounting plate and 68mm without, the channels were ideally suited for use in the shallow slab construction while the channels discrete visual appearance complemented the design of the swimming pool and surrounding area.