

# Airfield Solutions eBook

A Collection Of Case Studies That Show  
How to Increase Airfield Design Efficiency  
By Partnering with Contech

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# Airfield Site Solutions

The combination of aging infrastructure and increased passenger and air cargo is driving the need for airfield expansion and upgrades. These projects have unique needs such as FAA approvals, long design cycles, high loading, local environmental regulations, and security and safety restrictions.

Contech has a decades-long history of successful airfield projects, including airfield drainage improvements, glycol/AFFF storage, stormwater detention and treatment, and bridge and culvert systems. If you are searching for a partner with the knowledge, experience and products to meet the distinct project needs of airfield design, we've got you covered.





## Memphis Airport Glycol Management | Memphis, TN

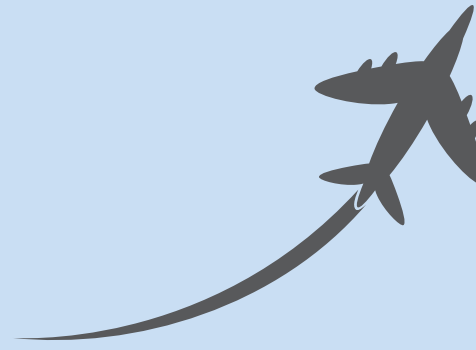
Owner: Memphis Shelby County Airport Authority (MSCAA)

Engineer: Kimley Horn (Design Engineer) / Parsons (Project Engineer)

Contractor: Eutaw Construction

Installation: February 2022

Technical Description: 120-inch & 84-inch DuroMaxx® SRPE Glycol Storage Tanks



Established in 1929, the Memphis International Airport (MEM) has continued to expand and improve its facilities throughout the years. Part of these expansions have included new runways and taxiways and runway extensions to enhance the growth and allow for increased air traffic and significantly larger aircraft in and out of the terminal.

The final design included a DuroMaxx® SRPE glycol storage system of 2,960' of 120-inch diameter (40' lengths) and 3,330' of 84-inch diameter (48' lengths) and met AASHTO MP20 standard specification. The two different diameters allowed the pipe to be nested during shipment, providing additional cost-savings. To address flotation concerns of the 84-inch and the 120-inch diameter tanks, sufficient soil cover was utilized as the counter buoyancy system. The total storage for this system is 8.07 acre-feet (351,528 cubic feet).



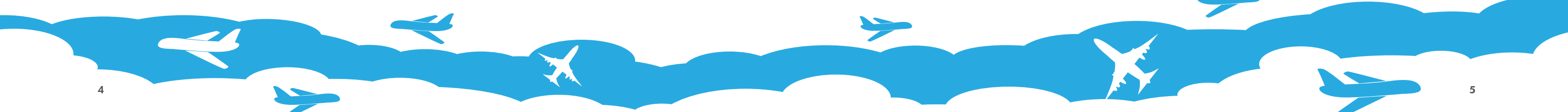
Runway safety remains a crucial consideration in design, the Federal Aviation Administration (FAA) has led the way to building safer, more sustainable, and more accessible airports across the United States. Aircraft deicing facilities have been incorporated into recent enhancement and improvement projects to airports across the country. Aircraft deicing removes frost, ice, slush, or snow from an aircraft, applying anti-icing protection to the aircraft's surfaces for safer, more efficient travel. At many airports, essential deicing operations are performed at the gates and designated ramp areas of the terminal core. Each deicing pad should include a glycol containment system to capture the glycol runoff, reducing the negative impacts to the environment.

In November of 2019, the Memphis-Shelby County Airport Authority (MSCAA) received a FAA grant to assist in the construction of deicing pads and related facilities to aid in snow and ice removal at the airport. The design consultant, Kimley Horn, included a large storage tank in the site plan and worked with MEM to determine the best solution. Initially, a concrete vault system was selected but the cost to include was well outside of the original budget.

Ultimately, they decided to rebid the project with a more suitable solution after the original bid was overbudget. They were extremely impressed with a DuroMaxx® steel reinforced polyethylene (SRPE) glycol storage system by Contech Engineered Solutions. DuroMaxx® SRPE met all the project design requirements including the large storage capacity required, watertight joints, and the ability to effectively store the glycol chemicals. Additionally, DuroMaxx meets Buy American requirements and is approved by the FAA and has been used in various applications for multiple commercial and military airports around the U.S. adhering to the requirements of the federally funded project.

The project engineer, Parsons, oversaw the installation of the DuroMaxx® SRPE storage system, which was successfully completed in February 2022. The final system included two inlets (36-inch and 48-inch) and a 60-inch outlet leading to a pumping station. The new deicing facility will provide a centralized location for airlines and cargo carriers to deice planes prior to take off. The facility will be able to accommodate a dozen 747s, according to the MEM officials.

Jason Burton, Parsons Project Manager, commented, "The DuroMaxx glycol runoff containment system provided by Contech was a successful sequence of the project which met the needs of the design and installed quickly."





**Sacramento International Airport  
Remain Overnight (RON) Apron |  
Sacramento, CA**

Owner: Sacramento International Airport  
 Engineer: Mead & Hunt Inc.  
 Contractor: Bay Cities Paving & Grading  
 Installation: 2021  
 Technical Description: (4) Peak Diversion Stormwater Management StormFilters®

The Sacramento International Airport covers 6,000 acres and has two parallel runways. This project consisted of adding 20 acres of Remain Overnight Aprons (ROA). Terminal A added six additional RON positions, and Terminal B added three additional RON positions. RON positions are linked to the addition of aircraft gates since aircraft can park at remote positions while others can remain overnight at new gates. More RON

aprons will allow for tow-less entry, push-back, or tow-out options with a central taxi lane between aircraft and more parking positions.

Engineers needed a robust stormwater treatment system to treat runoff from the 20 acres of new impervious surfaces. An above-ground solution was not feasible, as it would create a bird habitat that would be dangerous to aircraft. The Stormwater Management StormFilter® was specified as it could provide the necessary treatment, manage the high-peak flows, and accommodate the shallow outfall depths.

Bay Cities Paving & Grading installed two 8' x 6' Peak Diversion StormFilter vaults and two 8' x 18" Peak Diversion StormFilter vaults in one morning without having to shut down the airport. The Peak Diversion StormFilter provides treatment and high flow bypass in one precast vault, eliminating the need for an external bypass or junction structures. The four vaults contain a total of 101, 18 inch filter cartridges containing ZPG™ media, a blend of zeolite, perlite, and GAC to improve the performance of perlite and target organics, soluble metals, and other pollutants.

**Hartsfield Jackson - South  
Deicing Complex | Atlanta, GA**

Owner: Hartsfield-Jackson Atlanta International Airport (ATL)  
 Engineer: AECOM  
 Contractor: Kelly Construction, Inc.  
 Installation: March 2022  
 Technical Description: 16,325 LF of 6" diameter & 8,175 LF of 8" diameter A-2000™ PVC

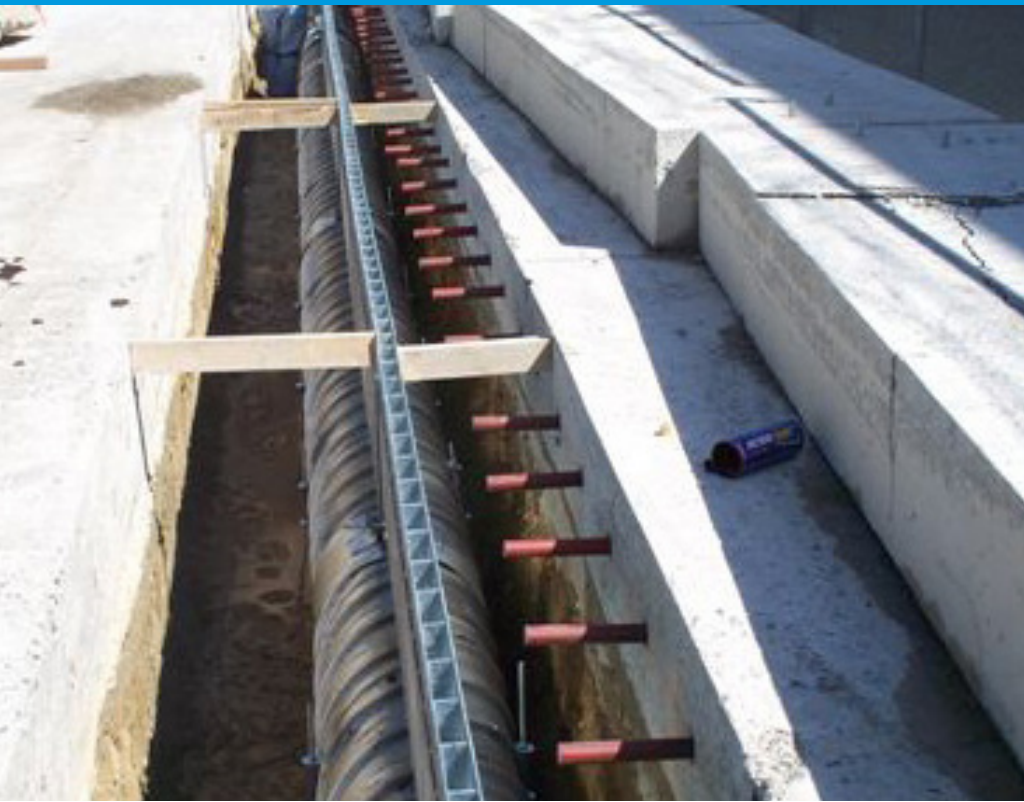


Located in the heart of Atlanta, Georgia, Hartsfield-Jackson Atlanta International Airport (ATL) is the busiest and most efficient passenger airport in the United States, with roughly 6% of all U.S. enplanements occurring at ATL. While icing conditions are not something that frequently occur at ATL, it can still be a concern and something that airport management wanted to ensure that they were able to adequately handle should the occasion arise. When operations slow at ATL, the rest of the country is impacted. To avoid that scenario, ATL began an improvement project which included expanding its deicing capabilities by adding a new \$147 million South Deicing Complex.

Planning for the South Deicing Complex began around 2016. At that time, ATL had 17 deicing pads. After consulting its carriers, ATL determined that additional deicing capacity was necessary. Some of the last land available for development on ATL's 4,700 acres was on the south side of the airfield. That was also the only option for the large footprint the project required. The new deicing administration building and tank farm were constructed along the south of the aprons, with access to Airport Loop Road.

Existing pavement made construction challenging because of differing elevations and grades. Much of the existing pavement needed to be removed and reconstructed to ensure one contiguous ramp with 200,000 square yards of concrete. From a grade perspective, the northwest corner of the ramp is about 15 feet higher than the southeast corner. As a result, an underdrain solution was required that could handle the additional runoff safely and efficiently while meeting FAA load requirements. An A-2000™ PVC underdrain solution was incorporated into the improvement plans to account for this ramp from the runway to the newly constructed deicing complex. The total length of the underdrain system required was 24,500 LF with diameters of 6-inch and 8-inch A-2000™ PVC – able to exceed the durability and service life of HDPE sanitary sewer pipe and drainage pipe while providing material stiffness up to six times greater than HDPE.





### FedEx - Memphis Airport | Memphis, TN

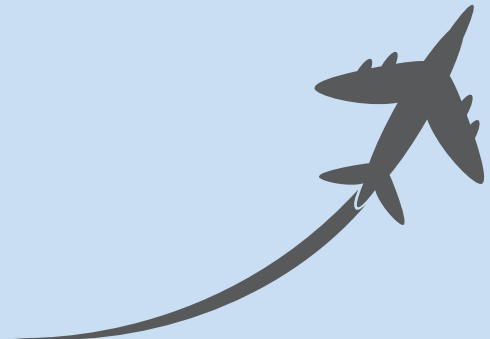
Owner: FedEx

Engineer: Allen & Hoshall, Inc.

Contractor: T.W. Frierson Contractor, Inc.

Installation: 2011

Technical Description: 730 LF of Slotted Drain™ diameters ranging from 12-inch to 24-inch



Memphis International Airport is a world-class facility serving more than 10 million passengers a year. It is the only airport in North America considered to be an “aerotropolis,” in which a city grows around the airport, connecting workers, suppliers, executives and goods to the global marketplace. FedEx Express (FedEx) was founded at Memphis International Airport in 1973 in order to help facilitate domestic and global trade and

Slotted Drain™ pipe from Contech was chosen for the solution. Slotted Drain is fabricated from Contech Corrugated Steel Pipe, which is cut along a longitudinal axis. A trapezoidal or straight-sided grate with reinforcing spacer plates is welded in place to form a 1 3/4-in. -wide slot opening which collects runoff and channels it to the pipe below. Slotted Drain was chosen because it provided a versatile and cost-effective surface water removal solution.

the company built a World Hub sorting facility and administration building on the airfield.

The FedEx Memphis World Hub has made the Memphis International Airport the second busiest cargo airport in the world, as it connects customers to more than 220 countries and territories on six continents. It encompasses a 500-acre area and includes parking slots for 175 aircraft and 42 miles of conveyor belts. With over 4,000 employees during the day and 8,000 at night, the facility keeps Memphis and FedEx connected to any point on the globe. The Memphis Hub supports the largest air cargo fleet in the world and handles about 3.3 million packages per day.

“Logistics and schedule sensitivity have been paramount requirements to achieve the success that FedEx expects and Frierson plans to deliver,” said Ben Eberle, Pre Construction Manager with T.W. Frierson Contractor, Inc. “The Slotted Drain water collector system had to be installed below the existing concrete pavement and required demolition to allow for the install. TWF opted to selfperform this installation and entered into a partnership with Contech to provide the engineering and material required to complete the functional system.”

FedEx worked with Allen & Hoshall, Inc. on construction of a two-story canopy for international sorting operations and needed to find a drainage collection system to remove sheet flow from the construction area. Allen & Hoshall, Inc. has provided design and construction phase services for airside and landside projects at Memphis International Airport since 1960.

T.W. Frierson Contractor, Inc. installed 127 feet of 12-inch diameter 2-2/3 x 1/2, 188 feet of 15-in. diameter, 177 feet of 18-inch diameter and 238-ft. of 24-in. diameter variable height, aluminized Slotted Drain in approximately three weeks.

“The new canopy was to be constructed in a space between a nearly identical canopy and another FedEx operations building,” said James Simpson, Jr., PE, CPESC, Associate Principal with Allen & Hoshall, Inc. “We were to minimize impacts on ongoing FedEx operations in the vicinity. This dictated some elements of the design and construction, including the choice to install the drain product with minimal disturbance to the existing concrete.”

“We would not have been able to successfully deliver this scope of work without Contech’s in-depth understanding of the system and attention to detail, schedule and cost,” said Eberle.





## Partial Parallel Taxiway "A" Relocation | Mobile, AL

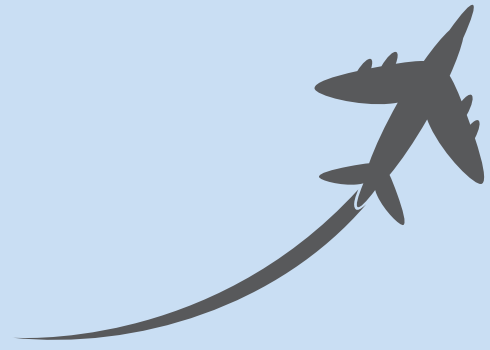
Owner: Mobile Airport Authority

Engineer: Michael Baker Jr. Inc.

Contractor: H.O. Weavers & Sons

Installation: 2015

Technical Description: 20,770 LF of 60-in. CORLIX® detention system, 680 LF of 48-in. ULTRA FLO® Liner Pipe, (13) VortSentry HS®



The Mobile Airport Authority owns and operates the Mobile Downtown Airport, a public use airport located three miles south of the central business district of Mobile. The airport can trace its roots back to Brookley Field, a WWII era airfield. The airport is the principal component of the Mobile Aeroplex at Brookley, a 1,650-acre industrial complex. With the Mobile Airport, east coast to west coast rail lines, two Interstates I-65

Detention ponds were not an option, as ponds attract waterfowl and other wildlife that are a safety hazard for aircraft. Therefore, engineers at Michael Baker Jr. Inc. designed 8 corrugated metal pipe detention systems using 20,770 linear feet of 60" diameter CORLIX aluminum pipe. Aluminum pipe was selected for this project due to its proximity to the Mobile Bay, which is a saline environment. The detention system stores stormwater underground and releases slowly over time into nearby Mobile Bay.

Thirteen VortSentry HS stormwater treatment systems were installed for pretreatment. The VortSentry HS units will prolong the life of the detention systems and reduces maintenance costs by removing sediment and retaining it in a structure that can be easily maintained.

Also used on the project was 680 LF of 48" ALT2 ULTRA FLO pipe for the purposes of sliplining some existing 54" RCP that experienced settlement problems at the joints. The entire 680 LF had to be pushed upstream from the outlet end due to airfield safety issues which prevented access into the upstream junction box structure.

Contech partnered with Alabama Pipe & Supply/Universal Precast to provide solutions for this project. Installation was completed in phases by H O Weaver & Sons in the fall of 2014 through the winter of 2016.

(North/South) and I-10 (East/West), and the nearby Mobile Port Authority, the site is the perfect location for companies that engage in interstate commerce and aviation.

More than 75 companies lease space at Mobile Aeroplex, including FedEx, Signature Air Support, and VT Mobile Aerospace Engineering. Most recently, Airbus announced it would build its first North American final assembly line for the A320 family of jetliners at Brookley Aeroplex. As such, Mobile became the home of the company's first U.S.-based fixed wing aircraft production facility.

The continued growth of the Mobile Aeroplex necessitated the need for expansion of the airfield to make it compliant with new FAA standards and more operationally efficient. The expansion includes the construction of the partial parallel taxiway "A" relocation that will add about 3,500 linear feet to the taxiway.

Site drainage was a major challenge during the design phase of the taxiway project. With city stormwater runoff regulations restricting any increase in offsite flows from site-related drainage, planners had to review options carefully to ensure compliance with requirements and FAA advisory circulars when addressing drainage for the relocated parallel taxiway.





### Telluride Regional Airport Safety Improvements | Telluride, CO

Owner: Telluride Regional Airport Authority, Federal Aviation Administration  
 Engineer: Kimley-Horn & Associates, Terracon  
 Contractor: R.E. Monks Construction Company  
 Installation: 2009  
 Technical Description: MULTI-PLATE 23' Span x 19' Rise x 600l Length

The Telluride Regional Airport has completed Phase II of four phases of a runway safety improvement program that consists of levelling the runway, widening the runway safety areas, installing Engineered Material Arresting Systems (EMAS), extending the take-off length to 7,070 feet and adding an airport maintenance vehicle underpass beneath the runway. The Telluride Regional Airport Authority (TRAA) - with grants

### Hartsfield International Airport Runway | Atlanta, GA

Owner: The City of Atlanta  
 Engineer: P.B.S. & J.  
 Contractor: C.W. Matthews Contracting Co.  
 Installation: 2004  
 Technical Description: CON/SPAN® 32' span x 10' rise x 504' length

In order to meet the increased demand for air travel and reduce current delays, it was necessary to build the new 9,000-foot Fifth Runway (Runway 10/28) as quickly as possible. As part of the design-build solution, a twin cell 32-foot span and 36-foot span CON/SPAN® structure was chosen to serve as a service tunnel and a public road under the new taxiway.



The City of Atlanta authorized the airport to spend an impressive \$5.4 billion towards its ten year development program. The Hartsfield-Jackson Development Program will modernize and expand the current airport facilities to accommodate its current and future traffic demands. Hartsfield-Jackson bears the proud distinction of being "the world's busiest passenger airport" The CON/SPAN® Bridge System portion of the project was completed during the summer of 2004 and the runway was commissioned in 2006.

from the Federal Aviation Administration (FAA) and the Colorado Division of Aeronautics - are funding the project.

"Once all phases are complete, the new runway will provide a much safer take-off and landing environment" said Richard Nuttall, Airport Manager. "The reduced runway grade, wider safety areas and EMAS will greatly increase the runway safety for all aircraft. The maintenance vehicle tunnel will also be a great safety enhancement for accessing the south side of the Airport"

Kimley-Horn & Associates worked with Terracon and the TRAA to find a structural plate product for the airport maintenance vehicle underpass that would allow for continued flow of maintenance vehicles below grade, eliminating conflicts with aircraft. There was a narrow window for construction due to heavy aircraft traffic and high elevation and a cost effective underpass structure with a fast installation time was essential.

A MULTI-PLATE® structure from Contech was chosen for the tunnel because it provided the strength, durability and construction speed needed versus a conventional bridge or customized cast-in-place structure. R.E. Monks Construction Company installed 660 linear feet of MULTI-PLATE while Plate Erectors assembled the plate structure. A shape control technician was onsite to monitor the structure until minimum backfill cover was obtained.

The plan reconfigures the layout for the Airport, better utilizing the existing land area while maintaining the scenic open space that surrounds the facility. These improvements will allow for larger regional commuter aircraft to land at the airport, bringing larger passenger loads, thus increasing the number of visiting tourists.





## Anchorage International Airport – Taxiway Y Reconstruction | Anchorage, AK

Owner: Alaska Department of Transportation (AKDOT)

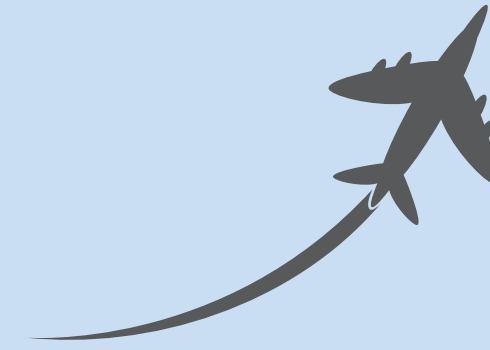
Engineer: Stantec

Contractor: Quality Asphalt Paving

Installation: 2016

Technical Description: 392 LF of 54-in. DuroMaxx® SRPE Liner Pipe with HP Joints

The Alaska Department of Transportation (AKDOT) issued a request for proposals (RFP) packet that outlined plans for the reconstruction and improvement for Ted Stevens Anchorage International Airport (ANC) Taxiway Y. These enhancements involved several things including new pavement, upgrade of the entire taxiway's edge and centerline lighting systems as well as the replacement and/or rehabilitation of an existing storm drain system.



port each was placed in the 12 o'clock, 5 o'clock and 7 o'clock positions of each piece of pipe. The purpose of the grout ports was to allow the contractor to monitor the grout level during grout installation and to hold the liner pipe in place during grout installation. Skid tubes were installed on each piece of pipe to aid in joint alignment and minimize sliplining friction.

The contractor cleaned, dewatered and inspected the existing host pipe and prepared for the liner pipe to be sliplined directly into the deteriorated storm drain. An important part of the preparation work included laying two continuous and parallel timbers along the invert of the host pipe. These timbers would act as rails, which the liner pipe rested on during the pushing process. The rails insured proper liner pipe alignment while decreasing the friction between the host pipe and the new pipe. The liner pipe was pushed uphill through a downstream manhole. Grout tubes of different lengths were connected to the liner pipe and pushed into the host pipe along with the liner pipe.

The initial grouting plan consisted of constructing bulkheads at each end of the pipe run between the host pipe and the liner pipe. The project was going smoothly until it began to rain prior to the construction of the bulkheads. Drainage water flowed through the annulus between the host pipe and the liner pipe since the bulkheads were not in place. This water caused the liner pipe to lift, and the various grout tubes caused the floating liner pipe to rotate. Once the water subsided, the contractor learned that the grout tubes and grout ports were out of position, and could not be easily placed in the correct position. After consulting with the contractor onsite, Contech recommended they drill new 2" diameter grout ports in the desired positions through the DuroMaxx pipe wall. Doing this allowed the contractor to move forward with their construction plan without having to reinstall the pipe, thus staying on schedule. Additionally, doing so wouldn't jeopardize the quality of the final system.

Once the new grout ports were drilled in the correct positions, the grout sub-contractor began to grout between the host and liner pipe through a staged approach with multiple lifts. Upward buoyant forces were kept in check by the use of a well-designed buoyancy control system. The grout ports in the 12 o'clock position of each segment of pipe allowed a strut consisting of a steel pipe and bottle jack to penetrate the liner pipe wall and brace against the existing pipe. The bottom of each bottle jack rested on a 4x4 beam running along the invert of the liner pipe, effectively spreading the resisting load along the entire length of liner pipe.

In spite of mother nature causing unexpected site challenges on this project, the adaptability of QAP, Contech and DuroMaxx allowed for creative and smart answers that enabled the team to overcome them. ANC was provided with a rehabilitated storm drain capable of carrying all the loads and hydraulic capacity required without having to trench through the taxiway. The final system provides a 100-year service life, and the trenchless approach allowed the critical path scheduling to be advantageously shifted, allowing the overall construction time to be reduced.

The Anchorage office of Stantec Consulting Services, Inc was chosen as the engineer of record for the project. One of their challenges was to address the existing 66 inch diameter CMP storm drain which crosses directly under the taxiway and was in need of rehabilitation or replacement due to its deteriorated condition. They determined that a 54" diameter smooth liner pipe would be sufficient for the hydraulic requirements and specified a solid wall HDPE product with 54" outside diameter and 50.48" diameter inside diameter. This approach would not require the shutdown of the taxiway over the deep storm sewer pipe. The excavation and replacement using conventional direct bury techniques would have delayed the pavement and lighting work and caused the taxiway traffic to be disrupted, in addition to being much more expensive than the trenchless method selected.

After bids were received and evaluated, a contract for the work was awarded to a local contractor, Quality Asphalt Paving (QAP). Upon receiving the award, the contractor investigated other pipe material options and determined that a steel reinforced polyethylene pipe product manufactured by Contech Engineered Solutions would be a better and more viable approach. It allowed for greater burial depths than the specified pipe. The DuroMaxx® SRPE liner pipe was ideal for this solution as it adhered to the both AASHTO MP 20 and ASTM F2562 material specification while the joints complied with ASTM D3212 and would keep the grout from leaking into the pipe during the grouting stages.

The steel reinforced polyethylene (SRPE) liner pipe was manufactured with eighty (80) ksi tensile strength steel reinforcing ribs which provided the inherent strength, while the pressure rated polyethylene (PE) resin provided the durability. This combination of materials resulted in an extraordinarily strong and durable pipe that was a fully structural capable solution, resistant to the effects of temperature and sunlight.

The deteriorating storm drain was under 24' of cover height. The 54" diameter DuroMaxx SRPE liner pipe weighed just 36 lbs/ft as compared with the 120 lbs/ft for the solid wall product, thereby offering handling advantages as well. QAP submitted DuroMaxx as an 'or equal' and it was approved for use by the ANC project management team.

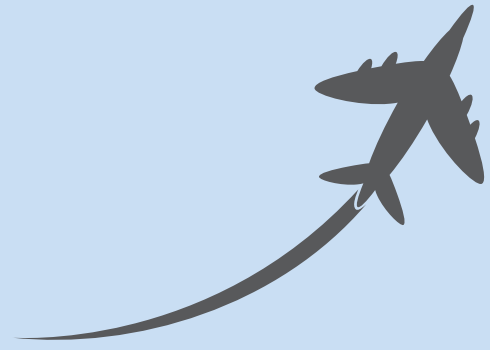
Longer lengths are typically used but the 20' lengths allowed for efficient shipping since multiple shipping modes were used. To aid in the grouting and bracing process, three 2" diameter grout ports per piece of pipe were installed at the Ogden plant. One grout





### Harrisburg International Airport Shoreline Protection | Middletown, PA

Owner: Harrisburg International Airport  
 Engineer: Urban Engineers Inc.  
 Contractor: Kelly Construction, Inc.  
 Installation: March 2022  
 Technical Description: 2019-2020



Twenty years after the Harrisburg International Airport (HIA) began working on plans to repair and rehabilitate a levee built by the United States Army Corps of Engineers to prevent flooding from the nearby Susquehanna River, the project came to fruition.

The 13,000' long earthen structure runs along the west side of the airport's runway and was eroding

During construction, it was imperative for the construction crews to communicate with air traffic controllers, especially while working in restricted areas due to the risk of the equipment interfering with the localizer and glide slope systems. With the grade of the slope ranging from 33-50%, installation can be a bit tricky but experienced installers completed the job effectively, efficiently and six months ahead of schedule. ArmorFlex proved to be a great solution for the site.

"Overall, on a scale of one to 10, I'd give the project a 10," concluded Brian Peda, Deputy Practice Leader/Construction Engineer with Urban Engineers. "Everything went pretty smoothly and according to plan."

due to excessive vegetation, burrowing animals and damage from ice jams and other heavy debris.

"It hadn't reached the point where it threatened the integrity of our runway and other critical infrastructure, but we knew it ultimately would reach that point without rehabilitation," stated Tim Edwards, Executive Director at HIA. "We basically had a repair project fully designed in 2004, but there was no funding available from the FAA at the time."

In 2018, funding became available and since HIA met the requirements, they were granted a \$20.2 million grant in May 2019. Additional funds were provided by the state of Pennsylvania and Susquehanna Area Regional Airport Authority, the airport's owner.

Urban Engineers Inc. had designed the project years ago and provided the final design which included 1,000,000 sf of ArmorFlex® Class 40TSS Mats in various sizes. ArmorFlex is a flexible, interlocking matrix of cellular concrete blocks of uniform size, shape, and weight used for erosion control. ArmorFlex systems have specific, tested, hydraulic capacities and are laced longitudinally with revetment cables to provide ease-of-handling and rapid installation. The mats were selected over riprap for the cost effectiveness, ease of installation and the ability to prevent erosion, vegetation growth and damage from animals burrowing.

During the project, crews from KC Construction Co. (KC) used large excavators with spreader-bar attachments to install about 6,700 mats, or about 130-140 each day. "We believe this is the largest articulated concrete block project in the country," said Bob Machiesky, On-Site Project Manager/Superintendent for KC. Concrete was poured into the horizontal gaps between the mats to grout them together. Next, a skid-steer loader was outfitted with a cylindrical broom attachment to fill the block openings as well as the vertical gaps with the same kind of stone used in the base layer. In order to get out of potential high-water zones as quickly as possible, KC began installing the mats at the bottom of the levee, working upward and away from the water.



# The experts you need to solve your airfield design challenges



For more than a century, Contech has provided innovative, cost-effective site solutions to engineers, contractors, and developers on projects across North America. With a portfolio that includes bridges, drainage, erosion control, retaining wall, sanitary sewer and stormwater management products, our team is ready to help you to design, build, and support your next project.



### AGENCY/REGULATORY GUIDANCE

Our team is ready to provide you with expert advice and assistance on local regulatory requirements, resulting in faster approvals.



### SOLUTION DEVELOPMENT

Our engineers can review your requirements, weigh all options, and recommend the optimal solution to integrate with your site designs.



### TECHNICAL EXPERTISE

Our engineers assist by providing product-specific engineering calculations such as hydraulics, buoyancy, foundation reactions, and unit sizing.



### COST ESTIMATES

We can quickly provide engineer's cost estimates to assist with your solution selection process.



### SITE SPECIFIC DRAWINGS

Our engineers can provide site-specific drawings for proposals, project meetings, and submittals, helping you be more efficient with your time.



### ON-SITE ASSISTANCE

Contractors know time is money, so we provide preconstruction meetings, delivery coordination, and on-site installation support to ensure a timely, smooth installation.



# CONTECH<sup>®</sup>

## ENGINEERED SOLUTIONS

### AIRFIELD DESIGN SOLUTIONS

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Find all the information you need at [www.ContechES.com](http://www.ContechES.com), including field and laboratory test results, approvals, brochures, design guides, standard details and specifications within the product section of our site.

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