Case Study Application Book

6

Redefine your comfort zone™ | www.titus-hvac.com

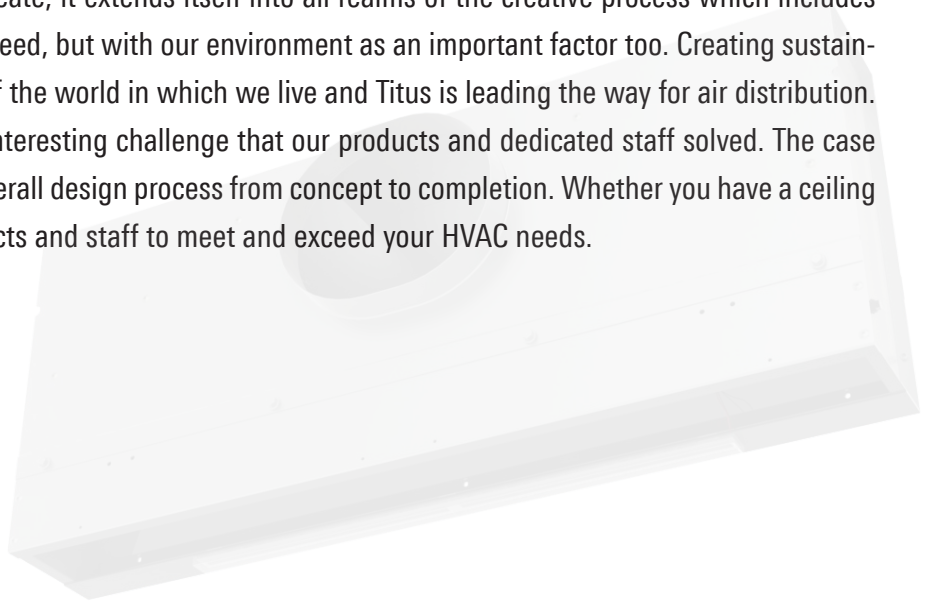
LEED Projects

Titus

overview

As has been our legacy, we continue to advance every aspect of our business to meet the changing needs of our customers and HVAC professionals world wide. At Titus our goal is very clear - to help the people who depend upon us by continuing to innovate and advance the science of air distribution. We are guided in this work by our commitment to building on opportunities that significantly improve the health, efficiency, comfort and aesthetics of the environments in which our products are used. We have a knowledgeable and experienced staff of industry professionals ready and available to assist you and your consumers with any aspect of an HVAC problem.

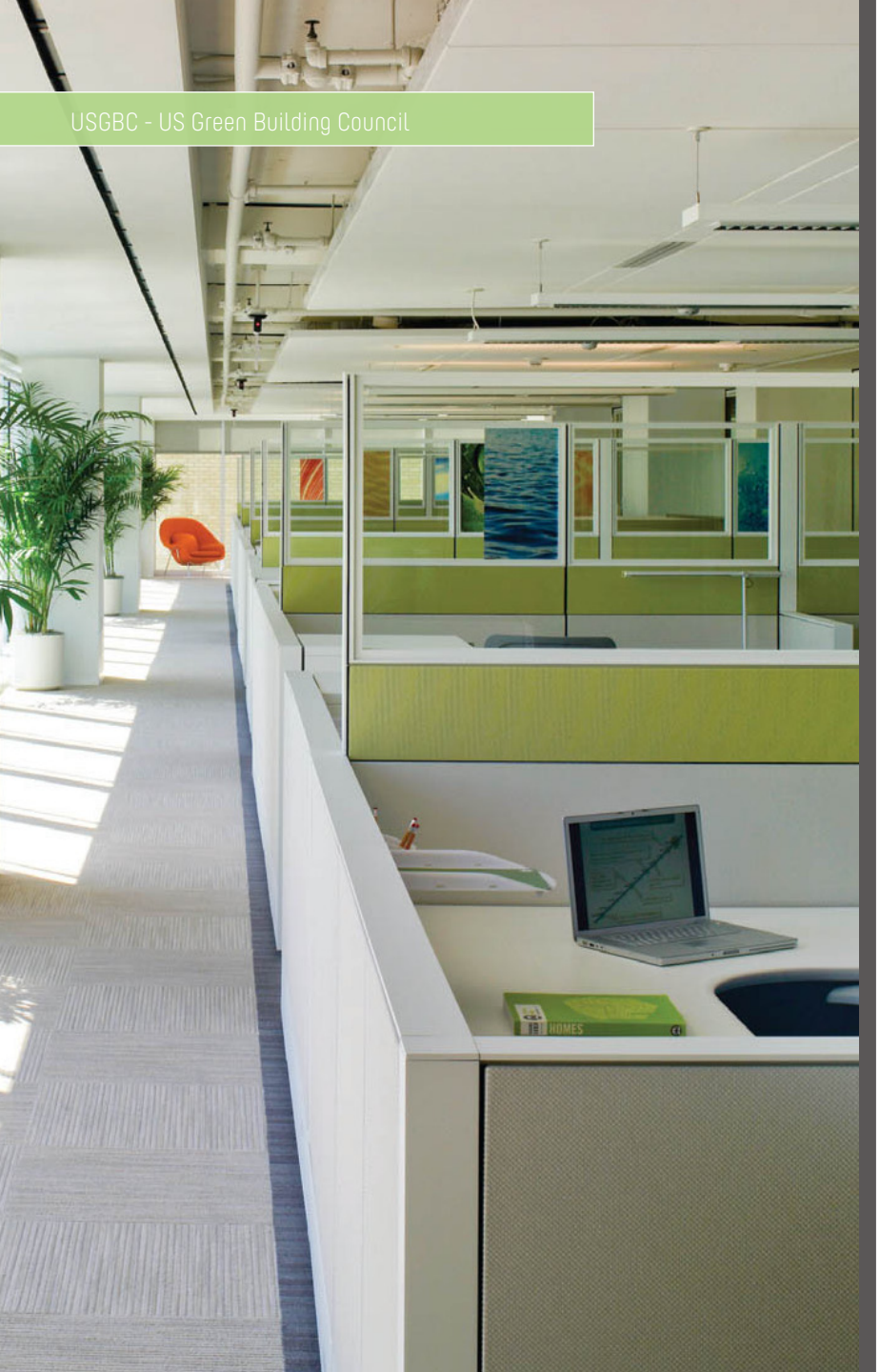
Intelligent innovations doesn't stop with the products we create, it extends itself into all realms of the creative process which includes literature. Today, buildings are constructed not only to fill a need, but with our environment as an important factor too. Creating sustainable and energy conservation products are at the forefront of the world in which we live and Titus is leading the way for air distribution. Each project featured in this book presented a unique and interesting challenge that our products and dedicated staff solved. The case studies in this brochure illustrate an in-depth look into the overall design process from concept to completion. Whether you have a ceiling application or an underfloor installation, Titus has the products and staff to meet and exceed your HVAC needs.



contents

PROJECT - US GREEN BUILDING COUNCIL HEADQUARTERS

ARCHITECT - ENVISION DESIGN
LOCATION - WASHINGTON, D.C.
LEED CERTIFICATION - LEED PLATINUM CERTIFICATION



USGBC - US Green Building Council

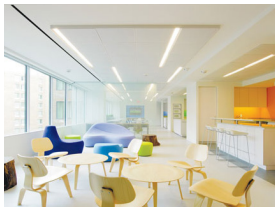
ABOUT THE PROJECT

The U.S. Green Building Council (USGBC), creators of the LEED Green Building Rating System, recently opened their new Headquarters building in Washington, D.C. The new building, located at 2101 L Street N.W. in Washington D.C., is a LEED Platinum level certified building for Commercial Interiors that features an open work space theme with central common areas and multi-functional work spaces. The unique design underscores USGBC's commitment to Green Building innovations and designs by providing a highly functional, healthy, and enjoyable work environment.

The new 75,000 square foot office, which is divided between two floors, demonstrates how environmentally preferred green materials and highly efficient systems can transform an ordinary work space into an exceptional work place. The green features begin at the reception area and continue throughout the work space. The elevator lobby, reception and conference areas are clad in 500 year old gumwood that was salvaged from the bottom of the Tennessee River. Also, the USGBC logo is carved in a two-story section of the gumwood, which is cleary one of the space's most prominent design features. The planning, design and construction of the new headquarters was a lengthy 12-month process from site selection to the actual move-in process. Buildings were evaluated on green metrics and the desire to seek certification for the entire facility.

THE TITUS SOLUTION

Jack Wilson, Vice-President of H&B Products Inc stated, "The air outlets used in the new USGBC headquarters building were chosen for their aesthetics, performance and green attributes." A total of four different models of Titus diffusers were used for the air distribution in the new building space. The perimeter of the building presented a unique problem that Titus already had a solution for - The DynaFuser.



The DynaFuser is an auto-changeover plenum slot diffuser used to provide overhead heating and cooling in perimeter applications. By sensing the supply air temperature, the DynaFuser automatically changes directional pattern controllers to the correct position for heating and cooling. The DynaFuser is a GreenSpec listed product that saves energy and is a great compliment to the other green products used in this renovation.

The ML-TZ Techzone slot diffuser and FlowBar architectural slot diffusers were also selected for this project. These products were used in the areas adjacent to the perimeter. The OMNI-NT ceiling diffusers were utilized in interior areas to reinforce an ultra-modern design theme and to provide an exceptional level of thermal comfort.

THE END RESULT

The new U.S. Green Building Council headquarters in Washington, D.C. is the perfect example of how to retrofit an existing structure from outdated concepts into a more modern energy efficient building. This new headquarters affirms their mission - "to transform the way buildings and communities are designed, built, and operated, enabling an environmentally and socially responsible, healthy, and prosperous environment that improves the quality of life."

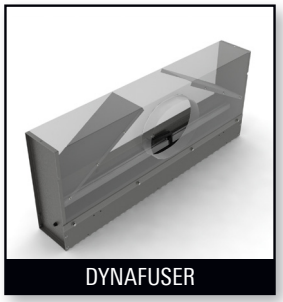
US Green Building Council Headquarters

PRODUCTS LIST


OMNI-NT


FLOWBAR


ML-TZ TechZone


DYNAFUSER

Titus

PROJECT - PALO VERDE ENERGY EDUCATION CENTER

ARCHITECT - ARRINGTON WATKINS ARCHITECTS
LOCATION - BUCKEYE, ARIZONA
LEED CERTIFICATION - LEED GOLD CERTIFICATION

Redefine your comfort zone™

Palo Verde Energy Education Center

ABOUT THE PROJECT

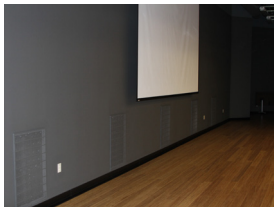
The Palo Verde Energy Education Center (EEC) opened in 2011. The main purpose for this facility is to serve as an emergency base of operations in the event of a crisis at the Palo Verde Nuclear Generating Station (PVNGS), which is conveniently located 22 miles away. During non-emergency times, the center is used as a technical and education facility. Information from the PVNGS is displayed via live data streams and monitored closely by employees at the facility. They are able to communicate instanly with the individuals at the plant and other officials around the world if any issue arises at the nuclear plant.

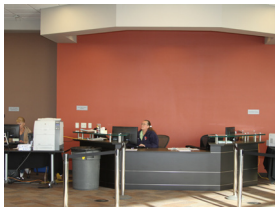
The EEC was designed by Arrington Watkins Architects to be an energy-efficient, state-of-the-art building and incorporates the latest technologies in creating sustainable structures to achieve this goal. Some of the Green Building concepts utilized in this LEED Gold Certified facility are that it uses heavy insulation for the building envelope, has specialized sizing and shading on all the windows installed and the air distribution system.

THE TITUS SOLUTION

The HVAC system in the EEC uses Displacement Ventilation and UnderFloor Air Distribution (UFAD). A Displacement Ventilation system is similar to an UnderFloor system in that is uses warmer supply air and lower pressures then a conventional overhead system. As a result, displacement ventilation systems have many of the same benefits of UFAD systems, such as longer economizer periods, potential energy savings from the warmer supply air and lower horsepower fans, and quiet operation. Both systems allow fresh, conditioned air to distribute properly throughout the center.

The main products featured in the Palo Verde Energy Education Center are the TAF-R UnderFloor diffuser and the DVIR Displacement Ventilation diffuser. The TAF-R is





a GreenSpec Listed product available in either standard light gray or black. All components of the unit are constructed of a high-impact polymer material designed to resist damage from heavy foot traffic. Additional colors may be specified to match any building's interior scheme. This model can help contribute toward achieving the following LEED Credits - LEED EA Credit 1: Optimize Energy Performance; IEQ Credit 6.2: Controllability of Systems; Thermal Comfort, IEQ Credit 7.1: Thermal Comfort - Design, and if the building utilizes an existing structure, MR Credit 1.1: Building Reuse.

The DVIR is a rectangular displacement diffuser with a one-way discharge air pattern designed for flush mount applications. Constructed of galvanized steel and aluminum, the DVIR is designed for in-wall applications and supplies a large volume of air at low velocities into the occupied zone. This model can contribute toward achieving the following LEED Credits - LEED EA Credit 1: Optimize Energy Performance; IEQc2: Increased Ventilation; and IEQc7.1: Thermal Comfort - Design.

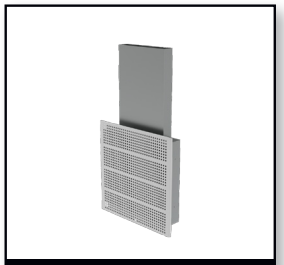
THE END RESULT

The Palo Verde Energy Education Center is equipped to handle any emergency situation that would arise from the nearby nuclear plant. Plant personnel and government leaders would be able to relay information to news, media and law enforcement officials in the event of any emergency. Having a facility such as this ready to provide assistance at a moments notice will definitely ease the concerns of the surrounding community in the event of a crisis.

Palo Verde Energy Education Center

PRODUCTS LIST

TAF-R

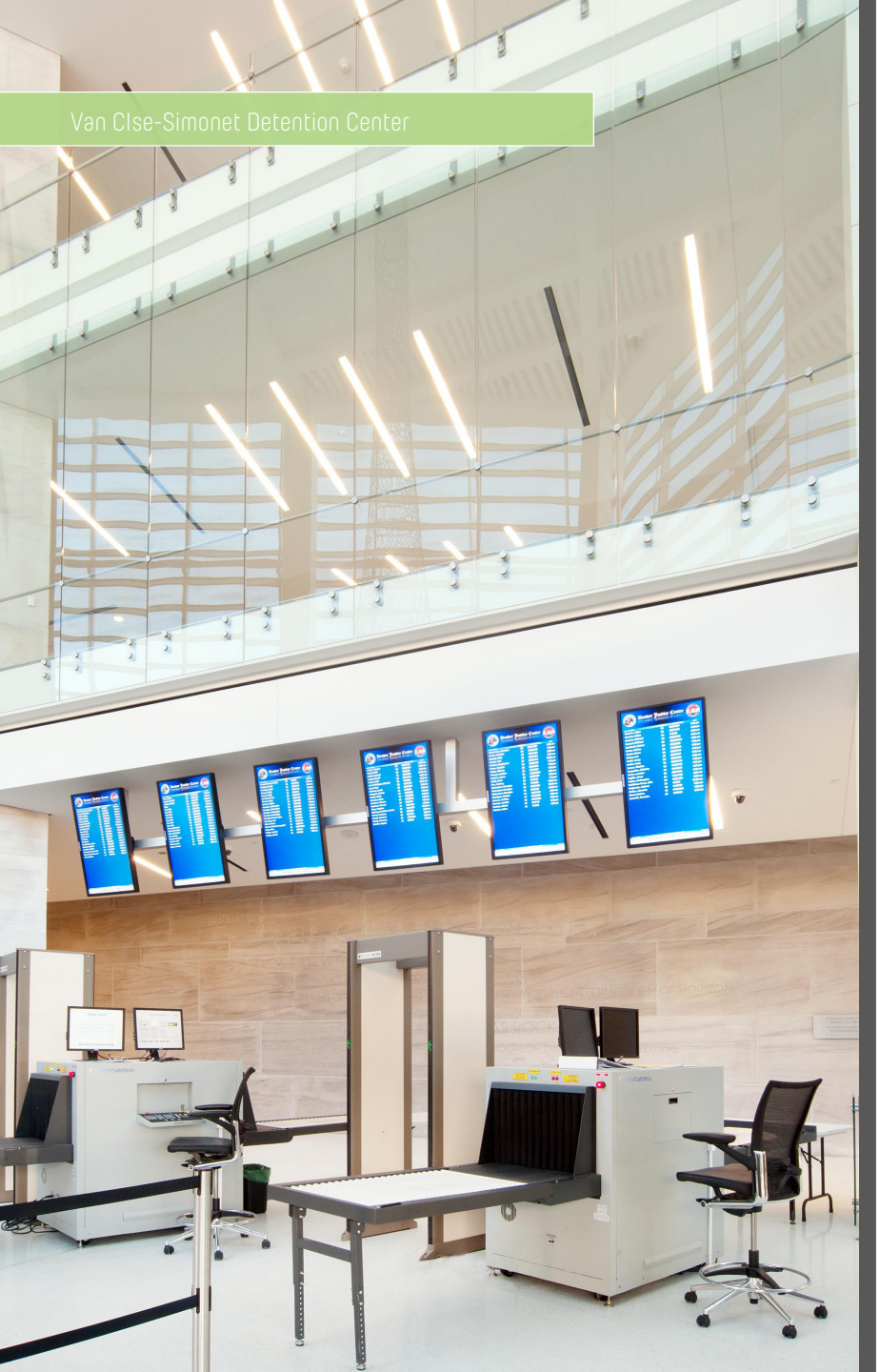


DVIR

Titus

PROJECT - VAN CISE-SIMONET DETENTION CENTER

ARCHITECT - RICCI GREEN ASSOCIATES
LOCATION - DENVER, COLORADO
LEED CERTIFICATION - LEED SILVER CERTIFICATION



Van CIse-Simonet Detention Center

ABOUT THE PROJECT

Law enforcement facilities in the Denver area sorely needed an upgrade. The new Van Cise-Simonet Detention Center is part of the revitalized effort to fill this need. The detention center is part of the Denver Justice Center Campus in the heart of Denver's civic line. The Justice Center Campus includes the Van Cise-Simonet Detention Center, the Dale Tooley Plaza, the Lindsey-Flanigan Courthouse and the US Post Office/parking garage.

This state-of-the-art facility holds up to 1,500 inmates awaiting trial and is operated by the Denver Sheriff Department. The Van Cise-Simonet Detention Center comes complete with a technologically advanced security system and inmate computer visitation. The building holds two courtrooms, a complete medical unit to treat any ailment, a full kitchen, and a laundry area in the basement.

Ricci Greene Associates designed the facility to receive LEED Certification. The construction and design is anticipated to achieve Silver LEED Certification.

THE TITUS SOLUTION

Providing air ditribution in buildings where security is a concern can be tricky, but not for Titus. The designers wanted to partner with a proven HVAC manufacturer with experience in facilities similar to this. The primary air outlets selected for this project were the SG-3300RL, the ML diffuser, the MP plenum, and an assortment of perforated diffusers.

Titus medium security grilles are designed to provide excellent performance in areas requiring increased levels of supervision. These grilles are available in steel or aluminum construction to meet various application requirements. The SG-3300RL is used in sidewall applications. With heavy gauge steel louvers welded to a steel sleeve that

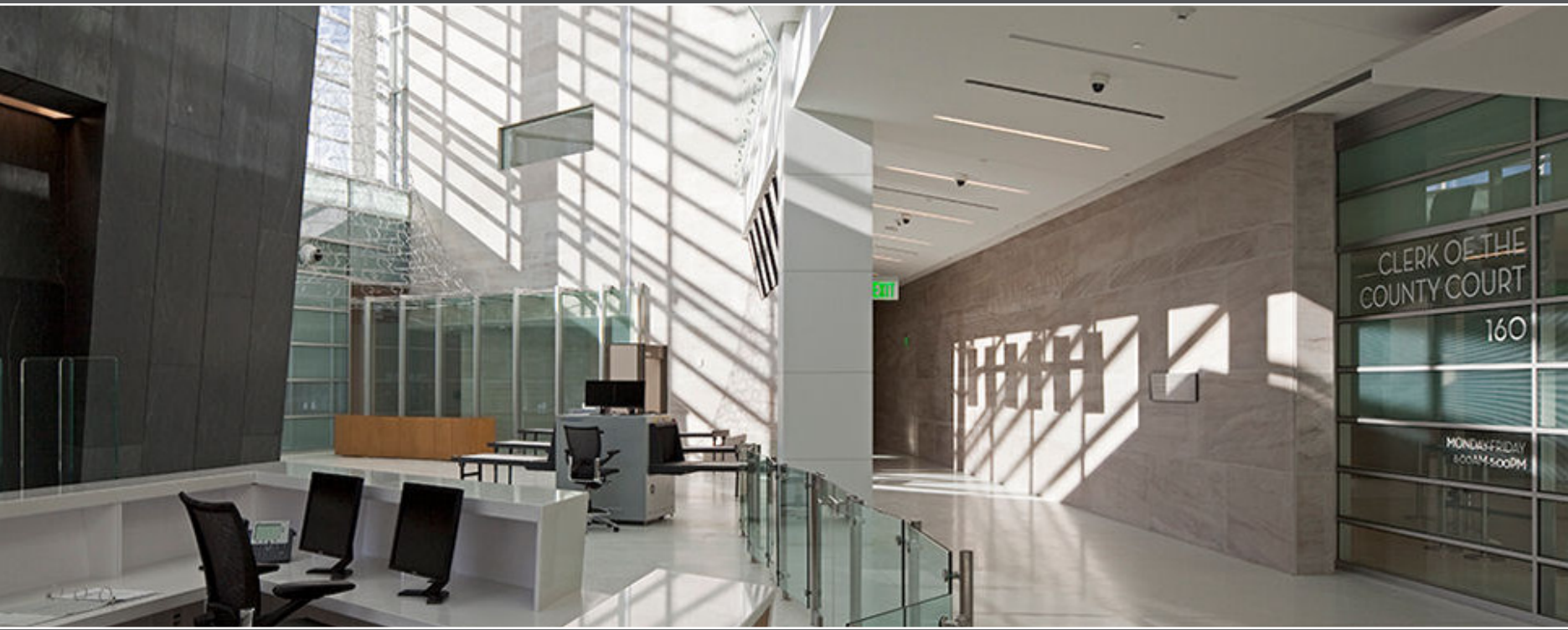
extends through the wall, the SG-3300RL is an exceptionally strong bar grille. The grilles are fixed with a 38 degree deflection with 3/8" blade spacing.

The Titus ML Modulinear diffuser is a high performance, high quality linear slot diffuser. Its unique "ice tong" deflector blades allow both changes in air volume and direction from the face of the diffuser. The MP is an optional plenum for use with the ML modulinear series. When the MP is combined with the ML diffuser, the MP provides a tight horizontal air pattern that clings to the ceiling even at low volumes.

Titus Perforated ceiling diffusers are typically selected to meet architectural demands for air outlets that blend into the ceiling plane. Their features include a perforated face with 51% free area, round or square inlets, and multiple mounting options. Titus perforated diffusers can be selected with round or cross flow discharge patterns to maximize capacity or throw.

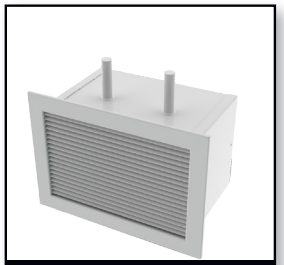
THE END RESULT

The architects at Ricci Greene Associates designed the Van Cise-Simonet Detention Center to be lasting fixture for the Denver area. This facility blends well architecturally with the direction in beautification that Denver is on. A greater benefit for Denver and the surrounding areas is that the building was designed with Green Building concepts which makes it not only a great addition to Denver, but for the world in which we live.



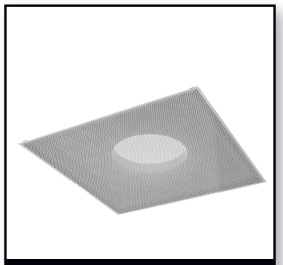
Van Cise-Simonet Detention Center

PRODUCTS LIST


SG-3300RL


ML


MP


PAR/PAS

Titus

PROJECT - KING ABDULLAH UNIVERSITY OF SCIENCE & TECHNOLOGY (KAUST)

ARCHITECT - HOK ARCHITECTS
LOCATION - SAUDI ARABIA
LEED CERTIFICATION - LEED PLATINUM CERTIFICATION

KAUST

ABOUT THE PROJECT

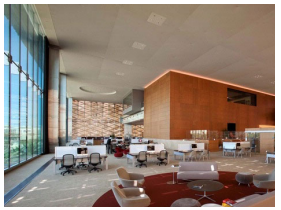
The King Abdullah University of Science and Technology (KAUST), is a graduate-level research university dedicated to bringing a new age of scientific discovery in Saudi Arabia and around the world. It brings together internationally renowned scientists to compete as one of the world's leading graduate research institutions. At KAUST, researchers, graduate-level students and faculty are challenged with advancing science and technology to have a global impact for future generations.

Having opened in September 2009, KAUST was designed by the architectural firm of HOK Architects to be the best university in the world. This LEED Platinum Certified campus features two million square feet of lab space spread across an interconnected complex of four five-story, 500,000-square foot buildings. The research centers focus on cutting-edge programs in biosciences and engineering, materials science and engineering, energy and the environment, and applied mathematics and computational science. The labs are designed and equipped to attract the world's best and brightest minds in science.

THE TITUS SOLUTION

Titus was pleased to provide many air distribution solutions for this project. Several grille and diffuser products are featured throughout this magnificent campus. Two of our perforated ceiling diffusers were used in many different areas. Perforated ceiling diffusers are typically selected to meet architectural demands for air outlets that blend into the ceiling plane. Titus perforated diffusers can be selected for a round pattern to maximize capacity or star pattern to maximize throw.

The PCS-AA and PAR-AA are aluminum units. The PCS-AA is a flush face diffuser that is designed for longer throws in variable air volume systems. The PAR-AA is a return diffuser that provides a tight, uniform horizontal blanket of blanket of air and protects



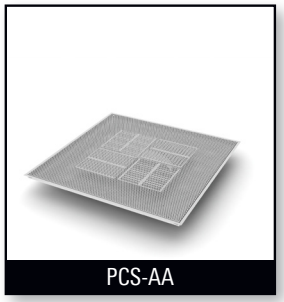
against smudging. Other aluminum products utilized throughout the campus are the OMNI-AA and the 3FL/FS grille. The Titus OMNI-AA diffuser satisfies architectural as well as engineering criteria. The curvature of the backpan works with the formed edges of the face panel to deliver a uniform 360° horizontal air pattern, without excessive noise or pressure drop. The OMNI-AA is an excellent choice for variable air volume systems. The 3FL/FS grille is a return grille with 45° deflection and 3/4" blade spacing. The blades are also parallel to the long dimension.

THE END RESULT

The King Abdullah University of Science and Technology has one main goal in which all others are based - to be the premier scientific institution for graduate research in the world. By providing cutting-edge facilities for all to utilize, KAUST has created the perfect environment to grow and develop the future leaders of the next generation.

King Abdullah University of Science & Technology (KAUST)

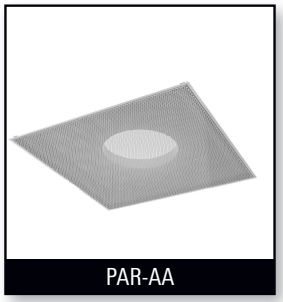
PRODUCTS LIST



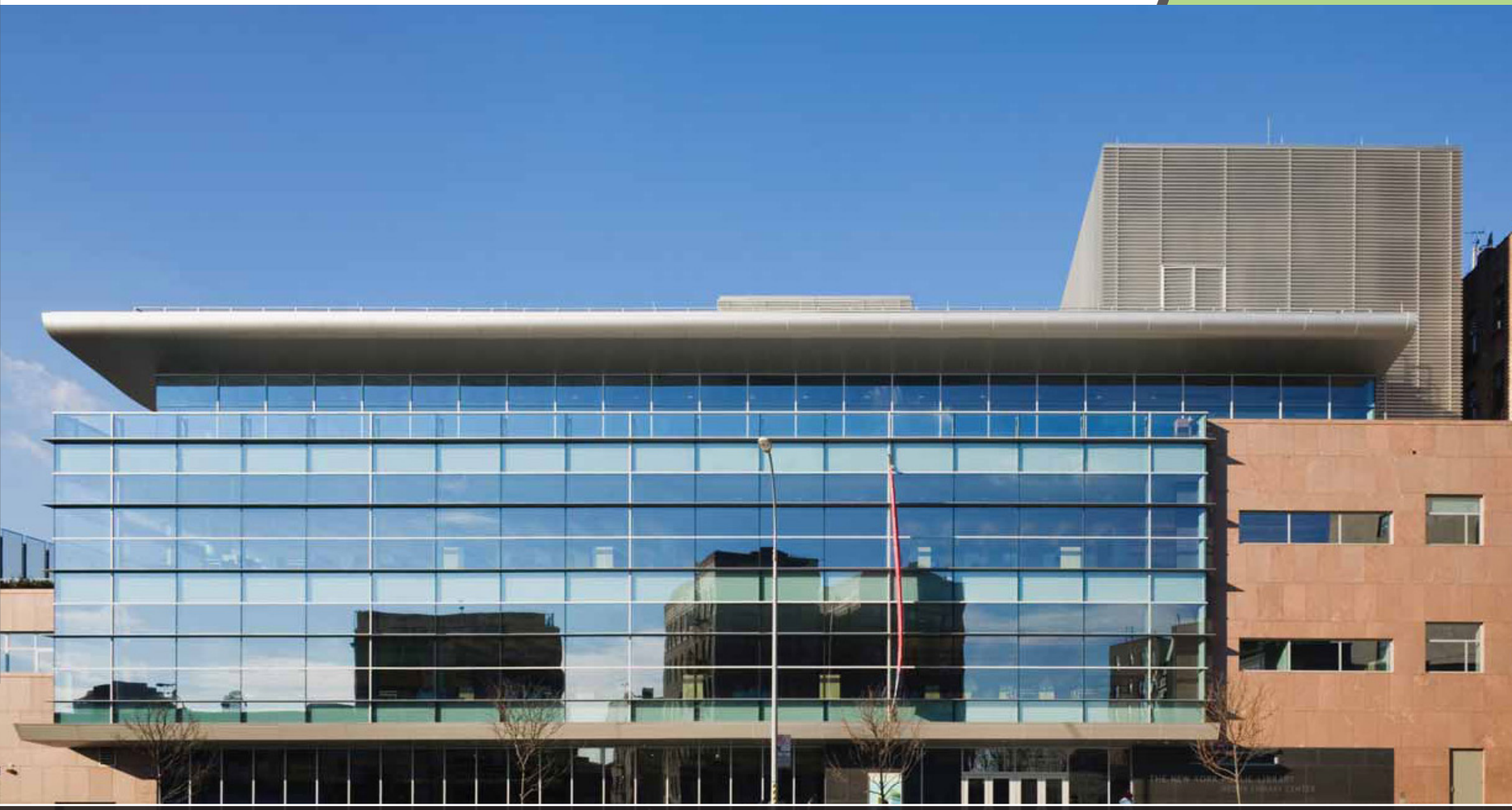
PCS-AA

3FL/FS

OMNI-AA



PAR-AA



PROJECT - BRONX LIBRARY CENTER

ARCHITECT - DATTNER ARCHITECTS
LOCATION - BRONX, NEW YORK
LEED CERTIFICATION - LEED SILVER CERTIFICATION

Bronx Library Center

ABOUT THE PROJECT

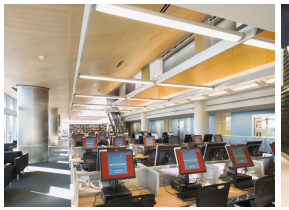
The Bronx Library Center is a 78,000 square foot facility that offers many amentities and opportunities to grow and learn for its surrounding neighborhood. Designed by Dattner Architects, this LEED Silver Certified building provides its guests with an expanded circulation and reference collection, state-of-the-art technology, educational classes for all ages, literacy classes, and also houses the Latino and Puerto Rican Cultural Center.

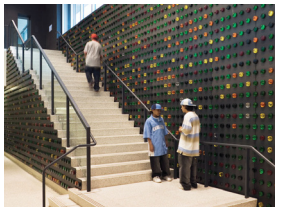
Dattner Architects utilized many green sustainable features throughout the new library center. The glass curtainwall creates an abundance of natural light is seen throughout the building. The reading areas are strategically placed to take full advantage of this; thus providing excellent lighting to enhance the visitor's experience at the new library. Photosensors and occupancy sensors are also used in the facility. Early estimates state the Bronx Library Center will save 20% on electricity. The lights also dim automatically depending upon how light is able to penetrate the building. Other sustainable features are the use of a roof that reflects solar heat and utilizing recycled materials. These materials are used both inside and outside of the library.

THE TITUS SOLUTION

The HVAC system also has Green Solutions. Titus has many air distribution products that provide the heating and cooling for the new facility. The FlowBar, ML and OMNI diffusers are the primary air outlets while the DTQS fan powered terminal unit is one of the terminal units featured.

The FlowBar is a unique linear diffuser system that maximizes engineering performance without sacrificing aesthetic considerations of the designer. It delivers higher airflows than conventional linear diffusers. With its immense amount of available slot widths, the FlowBar provides more cfm per linear foot while minimizing noise and





pressure loss.

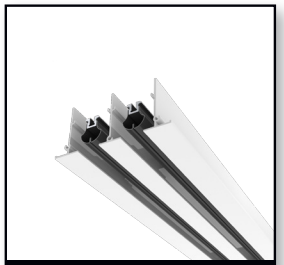
The ML and OMNI ceiling diffusers are excellent selections for air distribution as well. The ML is a high performance linear slot diffuser that allows both changes in air volume and direction from the face of the diffuser. The OMNI diffuser delivers a uniform 360B horizontal air pattern without excessive noise or pressure drop. The DTQS is a fan powered terminal unit. The quiet unit comes with built-in sound baffles that produces low sound levels. An energy efficient fan motor is mounted with vibration isolators that provides constant air delivery and temperature blending by utilizing pressure independent airflow control. The DTQS maintains the variable air volume (VAV) energy savings at the central fan.

THE END RESULT

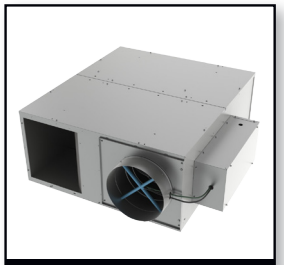
The Bronx Library Center is the largest public library in the Bronx. It has extensive collections of print and non-print materials for adults, young adults, and children. The center is New York Public Library's first Green facility and the first public facility in New York to achieve LEED accreditation.

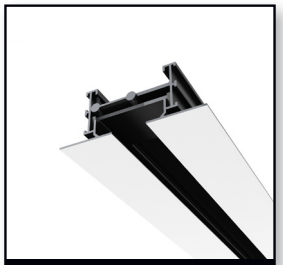
Bronx Library Center

PRODUCTS LIST


ML


OMNI


DTQS


FLOWBAR

PROJECT - LILLIAN OSBORNE HIGH SCHOOL

ARCHITECT - COHOS EVAMY INTEGRATED DESIGN
LOCATION - EDMONTON, ALBERTA
LEED CERTIFICATION - LEED SILVER CERTIFICATION

Lillian Osborne High School

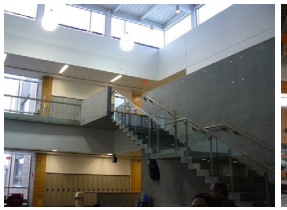
ABOUT THE PROJECT

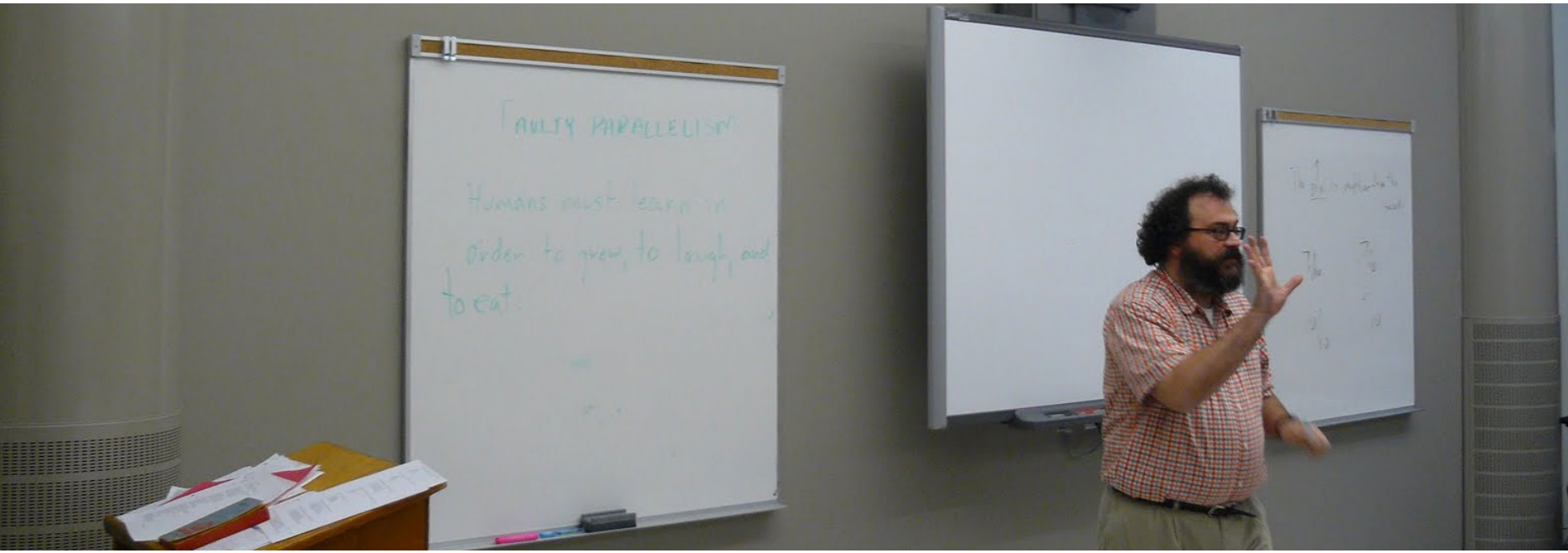
Lillian Osborne High School is the first school in Edmonton to achieve LEED certification. Designed to achieve the LEED Silver Certification by Cohos Evamy Integrated Design, the school opened its doors for the 2009-2010 school year and is a testiment to Edmonton Public School's commitment to provide superior learning environments for its district's students.

The architects designed the school to incorporate Green Building design concepts in the construction and operation of the building with specific regards to the Indoor Environmental Quality - (IEQ). The school utilizes effective ventilation systems that assist in ensuring thermal comfort for the students and faculty. The design of the mechanical and lighting systems will allow increased controllability of these systems for the users as well. Carpets, paints and adhesives were selected based on their ability to emit low volatile organic compounds (VOCs). The architects also placed an emphasis on bringing in more natural light into the occupied spaces. The Lillian Osborne High School will only use environmentally approved or "green" cleaning products and chemicals.

THE TITUS SOLUTION

With their focus on IEQ and wanting a unique ventilation solution for the classroom environment, Titus had the perfect product. The DVBC is a rectangular displacement diffuser with a curved face for wall mount applications. It is designed to supply a large volume of air at low velocities into the occupied zone. This model can contribute toward achieving LEED EA Credit 1: Optimize Energy Performance; IEQc2: Increased Ventilation; and IEQc7.1: Thermal Comfort - Design. Displacement Ventilation is a great alternative to conventional overhead ceiling supply systems. Displacement Ventilation provides design flexibility, energy savings, and the highest level of indoor air quality (IAQ).



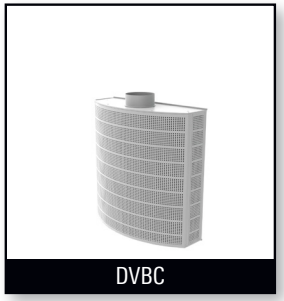


THE END RESULT

Designing and building sustainable buildings that are recognized by LEED are not limited to the United States. It is an international goal that can definately have a positive impact on the world. By building the Lillian Osborne High School, the Edmonton Public School District has created a unique learning environment for their students to grow, develop and learn about the world in which we live.

Lillian Osborne High School

PRODUCTS LIST



DVBC

Titus

PROJECT - ASU BIODESIGN INSTITUTE BUILDING A

ARCHITECTS - GOULD EVANS / LORD, AECK & SARGENT
LOCATION - TEMPE, ARIZONA
LEED CERTIFICATION - LEED GOLD CERTIFICATION

Redefine your comfort zone™

ASU BioDesign Institute Building A

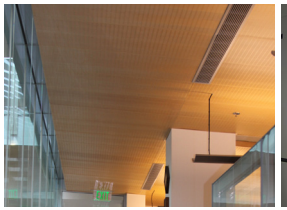
ABOUT THE PROJECT

Considered by most as the "lab of the future," The ASU BioDesign Institute is a massive multi-building learning and research center built to meet the demands of an ever-changing world. Buildings A & B encompass 350,000 square-feet of award-winning, state-of-the-art LEED-certified space. The Biodesign Institute represents the State of Arizona's largest investment in bioscience-related research. Arizona State University is the first university in the U.S. to create an interdisciplinary research institute solely devoted to bio-inspired innovation principles. The three major areas in which The Biodesign Institute is working to make a difference are: biomedicine & health outcomes, sustainability and security. This framework allows the Institute to address these critical global challenges by creating "use-inspired," as well as "bio-inspired" solutions.

Building A achieved a LEED NC 2.2 Gold Certification after it was built. Designed with Green Building concepts in mind, Building A is filled with sustainable elements. Some of the green elements featured are the use of public transportation. The university encourages all to take advantage of alternate transportation by offering free passes for public service, has several bike racks spread throughout campus and many showers in all the buildings. It also makes excellent use of the abundance of natural light provided. Building A has an impressive atrium that spans the entire space. Instead of having several walls to divide offices and labs, the facility utilizes glass so that light easily penetrate the building. This also offers impressive views of the surrounding landscape while saving energy. Other Green Building elements are the state-of-the-art storm drain system and the use of a reflective roof membrane to reduce the effect of the heat island.

THE TITUS SOLUTION

The BioDesign Institute has several air distribution products from Titus ranging from



grilles and diffusers to terminal units. Our laminar flow diffusers, models TLF-AA and TLF-SS, are the industry standard for unidirectional flow. TLF diffusers can be used to create clean zones by positioning the diffuser directly over the area to be washed with clean air. They are also used in most operating rooms as the center diffuser. The vertical piston of air created by the TLF is used to discharge clean air over the patient during operations. The Titus CT linear bar diffusers are designed for both heating and cooling applications, supply as well as return. They are available in eight different core styles plus a wide selection of frames and borders. These diffusers can be used for ceiling, side wall, or sill installations. Accessories such as directional blades, dampers, blank-offs, access doors and mitered corners make these diffusers even more versatile.

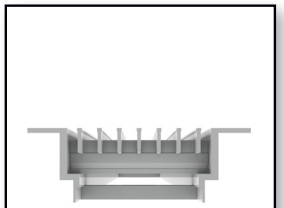
Single Duct terminals are the fundamental building blocks for Variable Air Volume (VAV) systems. Their primary function is to regulate airflow to a zone, in response to zone temperature requirements. The Titus DESV is unique as it incorporates many design features that increase performance, decrease service and installation costs, and offer increased value, over and above this basic function. This unit also contains a standard AeroCross ™ multi-point center averaging velocity sensor. The 50F is an Eggcrate grille. It has the highest free area of any return grille. These grilles are available with an aluminum border and aluminum grid; steel border and aluminum grid; or entirely stainless steel construction. It is offered in ½ x ½ x ½-inch, ½ x ½ x 1-inch, or 1 x 1 x 1-inch core sizes. The 50F is also available as a filtered return grille.

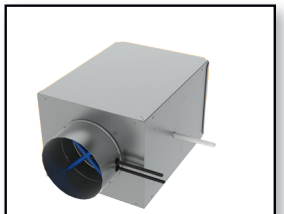
THE END RESULT

Winner of the 2006 Lab of the Year by R & D Magazine, the ASU BioDesign Institute is now the benchmark for new research facilities being constructed. The Green Building elements featured throughout all the buildings not only help to save energy, but fosters a unique learning environment for the next generation of researchers and scientists to grow and develop.

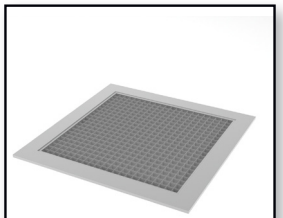
ASU BioDesign Institute Building A

PRODUCTS LIST


CT


DESV


TLF-AA


50F

PROJECT - CEDAR RIDGE HIGH SCHOOL

ARCHITECTS - PERKINS + WILL / KAH ARCHITECTS
LOCATION - ROUND ROCK, TEXAS
LEED CERTIFICATION - LEED CERTIFICATION

Cedar Ridge High School

ABOUT THE PROJECT

Round Rock ISD envisioned a sleek, modern new campus that would foster growth and development for its students. They wanted a high school capable of unlocking the hidden abilities of their students and one that would aid their teachers in preparing their students for the next chapter of their lives. Cedar Ridge High School is the result.

Cedar Ridge High School is a unique two-story, 375,000 square-foot high school divided into four distinct academies: Academy of International Business and Economics, Academy of Professional Studies, Academy of Science, Technology, Engineering, and Mathemathics, and the Academy of Visual and Performing Arts. Each academy houses its own media center, administration suites and planning areas for teachers. The common areas for all students are the cafeteria, the athletic facility and the outdoor courtyard which is considered the heart of campus and is home to several multi-purpose events.

The design team and Round Rock ISD wanted this school to be an environmentally friendly facility. This LEED Certified school has several sustainable elements featured. It uses local limestone materials on the exterior of the buildings and offers an abundance of natural light. All the windows allow natural light to penetrate deep into the occupied spaces.

THE TITUS SOLUTION

The HVAC system featured in the high school also contributed toward it achieving LEED Certification. Titus has an abundance of products installed that provide energy savings for the school. Several areas in the new high school utilize displacement ventilation, which is a unique alternative for air distribution.

The DVIR and DVBC are rectangular displacement diffusers. The DVIR is a

unidirectional discharge diffuser designed for flush mount applications. The DVBC has a curved face and discharges air via a three-way pattern. Both units provide air distribution by supplying large volumes of air at low velocities into the occupied zone. Easily adjustable air pattern controllers inside the units can create different airflow patterns in the space to optimize occupant comfort. Some additional products featured in the school are the TMS diffuser and the TRM mounting frame.

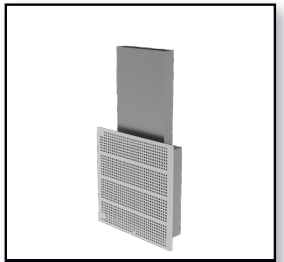
The Titus TMSA is a steel diffuser that features adjustable vanes which vary the discharge pattern between vertical and horizontal for heating and cooling applications. These diffusers deliver supply air in 360º pattern and are designed to protect ceilings from smudging. All sizes have 3 cones providing a uniform appearance. The TRM is an aluminum mounting frame used to make installation of grilles & diffusers and other ceiling components in plaster and sheet rock ceilings as simple as inserting them in a standard T-bar type ceiling. For typical applications, the frame has adjustable fastening clips which adapt to a variety of plaster and sheet rock ceiling thicknesses.

THE END RESULT

There have been numerous studies on the importance of proper ventilation in our schools. Cedar Ridge High School has a state-of-the-art HVAC system that provides superior performance for its students and faculty. The new high school is also a beautiful campus that has created the best learning environment for the students of Round Rock, Texas. The teachers, staff and administration now have a technologically advanced partner that will assist them in molding the future leaders for the next generation.

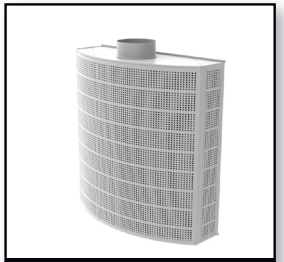
Cedar Ridge High School

PRODUCTS LIST

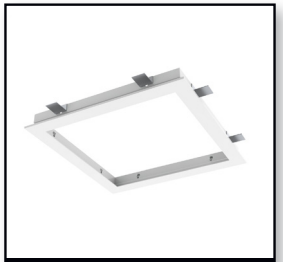


DVIR

TMSA



DVBC



TRM

PROJECT - DENVER ANIMAL SHELTER

ARCHITECT - ANIMAL ARTS
LOCATION - DENVER, COLORADO
LEED CERTIFICATION - LEED PLATINUM CERTIFICATION

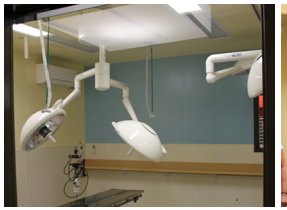
ABOUT THE PROJECT

Proving high quality animal care is becoming more and more important in our society today. Animal shelters that were once housed in older buildings are being cast aside and new and impressive structures are being built in their place. Denver is the latest city to follow suit. Opening in June 2011, the new Denver Animal Shelter is a 36,000 square-foot facility that is twice the size of the previous one. With more space to meet the needs of a growing community, the new shelter now offers the city the latest technology in humane animal care.

The Denver Animal Shelter is the first and only animal shelter in the US designed with Green Building concepts. The architects at Animals Arts created a facility that achieved LEED Platinum Certification. The sustainable elements and energy saving features definitely places the new shelter head and shoulders above the competition. The kennels have radiant-floor heating installed which is not only energy-efficient, but aids in reducing the spread of disease throughout the shelter. The roof of the building incorporates a photovoltaic-ready design, making the addition of solar panels at a later date a simple installation. Other sustainable elements include the use of daylight sensors to automatically control the lights and energy usage, the reuse and preservation of the site in which it was constructed and utilizing recycled content to build the shelter. The HVAC system and products used also have a major role in the building earning LEED recognition.

THE TITUS SOLUTION

Green Building design and providing HVAC energy solutions is nothing new to Titus. We have been the industry leader for many years. We provided many air distribution outlets for the shelter including: the ML diffuser and MP plenum, the PAR-AA perforated diffuser, and the TDCA-AA diffuser.



The Titus ML Modulinear diffuser is a high performance, high quality linear slot diffuser. The unique "ice tong" deflector blades allow both changes in air volume and direction from the face of the diffuser. This diffuser is also available in 1 through 8-slot configurations with the exception of the ML-40, which is available in 1 through 4-slot configurations. The MP is an optional plenum for use with the ML modulinear series. When the MP is combined with the ML diffuser, the MP provides a tight horizontal air pattern that clings to the ceiling even at low volumes.

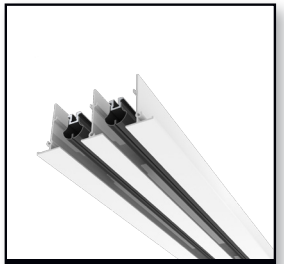
The PAR-AA is an aluminum perforated ceiling diffuser. Perforated ceiling diffusers are typically selected to meet architectural demands for air outlets that blend into the ceiling plane. Their features include a perforated face with 51% free area, round or square inlets, and multiple mounting options. Titus perforated diffusers can be selected with round or cross flow discharge patterns to maximize capacity or throw. The Titus TDCA-AA diffuser handles an unusually large amount of air for a given pressure drop and noise level. Its pleasing appearance harmonizes with various architectural details, especially in modular ceiling systems.

THE END RESULT

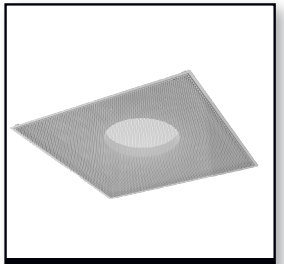
The city of Denver is generating a lot excitement with the construction of new buildings that are not only filling a need, but are built with sustaining the environment in mind as well. The new animal shelter is just another in a long line of impressive structures that can be seen throughout the city.

Denver Animal Shelter

PRODUCTS LIST


ML


MPI


PAR-AA


TDCA-AA

Index

notes

notes

Titus

Redefine your comfort zone™

LEED Projects

605 Shiloh Road | Plano TX 75074 | office: 972.212.4800 | fax: 972.212.4884