Titus
Redefine your comfort zone.™

CASE STUDY PROJECTS

APPLICATIONS

04

ADVANCING THE SCIENCE OF AIR DISTRIBUTION

COLLEGES / UNIVERSITIES

Rethink what air management systems can be.
Revise your notion of functionality.
Redefine your comfort zone.™

Comfort, Redefined.

Since 1946, Titus has focused on technologically advanced products that create the highest degree of comfort.

We've consistently led the industry by breaking the barriers of expectation and convention when it comes to technology. We've redefined how technology drives, influences and supports air management. And by being first to market with the most innovative approaches to air distribution, we're proud to say that the marketplace has taken notice, and is counting on us to lead the way into the next decade. A challenge we're more than happy to accommodate.

Titus has raised the bar on design, proving that functional can also be beautiful. And we've redefined what it means to be energy efficient, with a collection of smart technology products that optimize the use of natural resources.

Titus has also redefined what it means to work with an air management products partner. We pride ourselves on listening and responding so that we can not only meet expectations, but also exceed them. Service has been, and will always be, our main focus at Titus. And, it's why so many of our customers keep coming back.

Welcome to your new comfort zone. It starts here.

PROJECT - UT BELO CENTER FOR NEW MEDIA

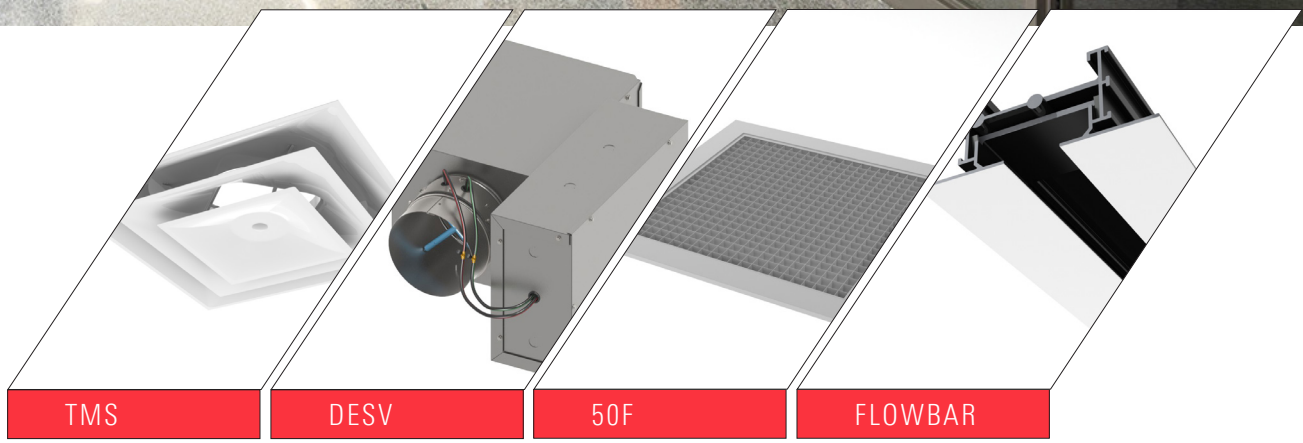
Austin, TX

CLIENT - UNIVERSITY OF TEXAS AT AUSTIN
ARCHITECT - THE LAWRENCE GROUP
CONSTRUCTION - FLINT CONSTRUCTION
ACOUSTICS - HMPA
LEED CERTIFICATION - LEED GOLD CERTIFIED

ABOUT THE PROJECT

Students at the University of Texas at Austin have a brand new addition to the family this Fall. The Belo Center for New Media opened on August 29, 2012, and will house all multimedia classrooms, newsrooms and be the editorial headquarters for the university's student produced news website. This renovated and expanded facility is now 120,000 square-feet and will continue to house the College of Communications. It will also become the new home of KUT Public Broadcast Center as well.

The design team wanted to utilize the latest advancements in Green Building technology in the newly revitalized media center. There are several sustainable features throughout and the Belo Center has obtained LEED Gold Certification from the USGBC. It utilizes recycled and regional building ma-



TMS | DESV | 50F | FLOWBAR

FEATURED PRODUCTS

UT BELO CENTER
interior photos

terials, motion-sensitive lighting and translucent glass office walls that filter sunlight. This allows natural light to penetrate into the facility and conserve energy. The landscaping is irrigated from a rainwater collection system and from condensation collected from the heating, ventilation and air conditioning systems.

THE TITUS SOLUTION

Titus was extremely proud to be selected to provide the air distribution for this prestigous institution. We have an abundance of products featured throughout the media center. The main products selected for this project were the FlowBar, the TMS diffuser, the 50F Eggcrate grille, and the DESV terminal unit.

Our linear bar diffusers are quickly becoming a favorite selection for architects to choose from. The FlowBar is an architectural linear diffuser system that maximizes engineering performance without sacrificing the aesthetic considerations of the architect. FlowBar's outstanding performance allows higher airflows than conventional linear diffusers. The wide array of slot widths allow for more CFM per linear foot while minimizing noise and pressure loss. The Flowbar system is available in continuous linear, incremental linear and square configurations.

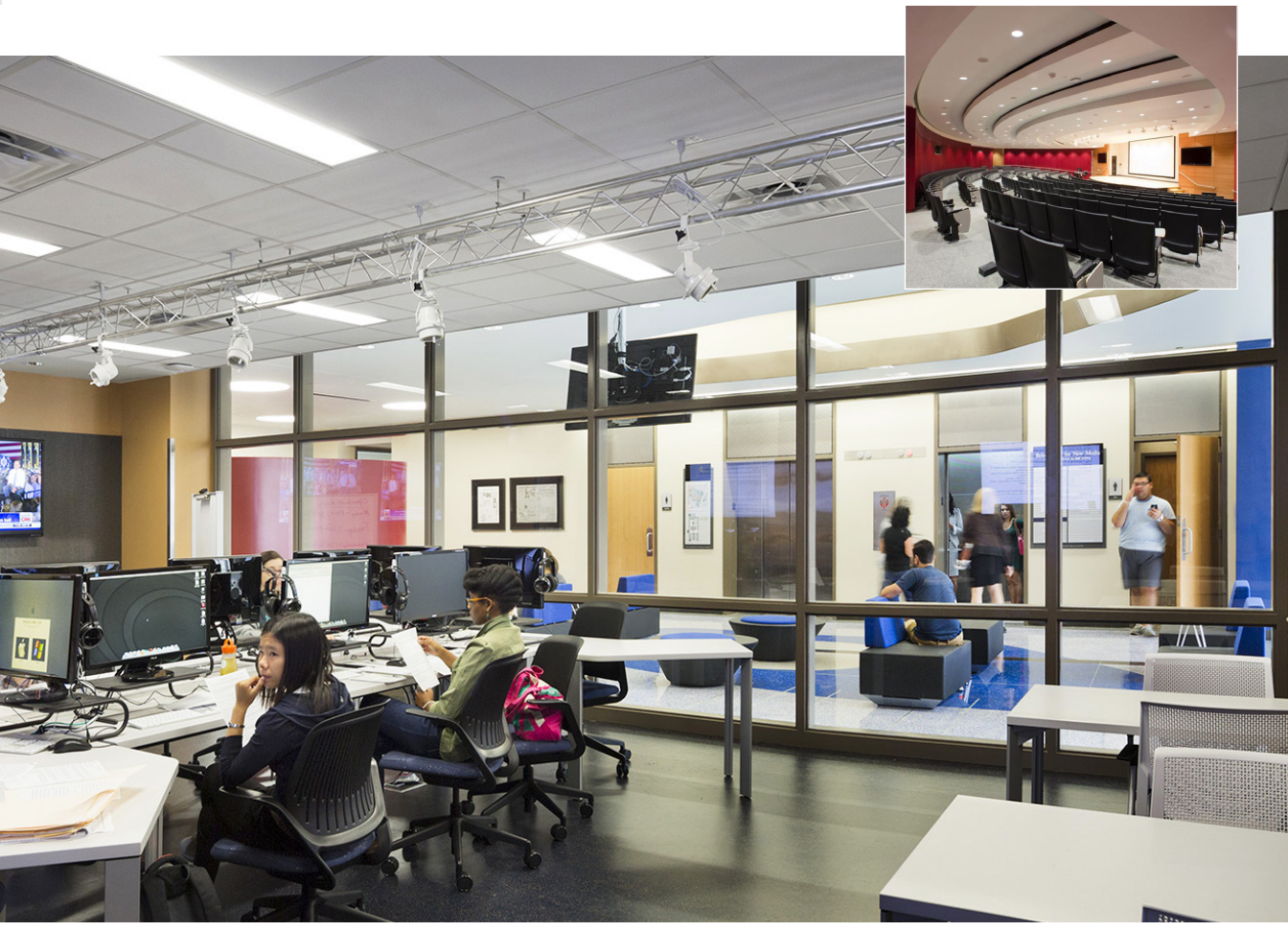
The TMS is a square ceiling diffuser that delivers supply air in a true 360° pattern with low pressure drop. The uniform, nearly horizontal jet from the outer

cone maintains effective room air distribution even when the air volume varies over a considerable range. All sizes have three cones, giving a uniform appearance where different neck sizes are used in the same area.

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, incorporating many design features that increase performance, decrease service and installation costs, and offer increased value, over and above basic function. The DESV 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. They 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

The University of Texas Belo Center for New Media is an impressive combination of innovation and aesthetics. Broadcast journalism and multimedia will continue to flourish in this new environment. The new media center will be able to foster several generations of creative minds now and into the future, plus it also affords the university another asset to recruit future students for many years to come.



PROJECT - ASU WALTER CRONKITE SCHOOL OF JOURNALISM & MASS COMMUNICATION

Phoenix, AZ

CLIENT - ARIZONA STATE UNIVERSITY

ARCHITECT - HDR ARCHITECTS

DESIGN CONSULTANT - EHRLICH ARCHITECTS

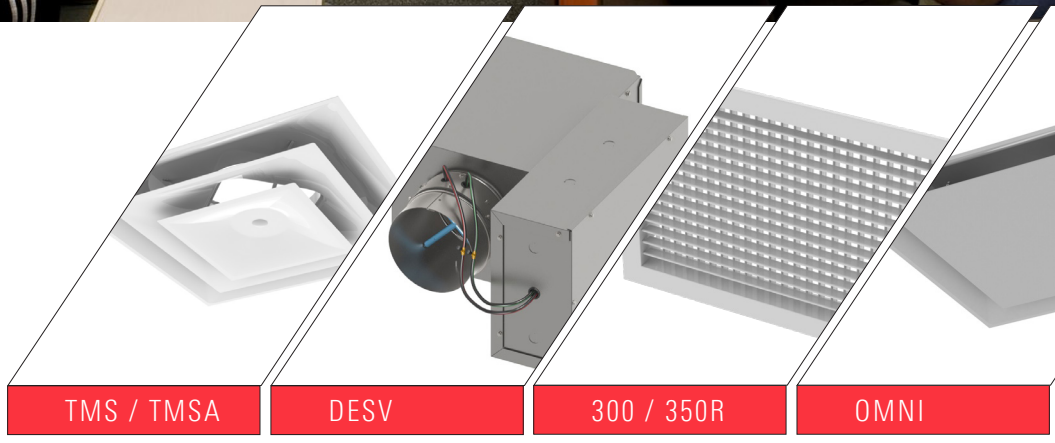
CONSTRUCTION - SUNDT CONSTRUCTION

LEED CERTIFICATION - LEED SILVER CERTIFIED

ABOUT THE PROJECT

Back in 1984, the School of Journalism at Arizona State University was in dire need of a jolt. Legendary journalist Walter Cronkite partnered with the university to bolter their efforts to improve this area and its building has used his name ever since. The next chapter for ASU journalism was completed in 2008 as the new ASU Walter Cronkite School of Journalism and Mass Communication opened in the Fall.

The new building is a state-of-the-art six-story, 225,000 square-foot facility that houses classrooms, office space and production and broadcast facilities for PBS station KAET/Channel 8 to utilize. The design team focused on creating an open environment for students, faculty and industry leaders to exchange ideas about today's current events. This forum extends two



TMS / TMSA | DESV | 300 / 350R | OMNI

FEATURED PRODUCTS

ASU WALTER CRONKITE
interior photos

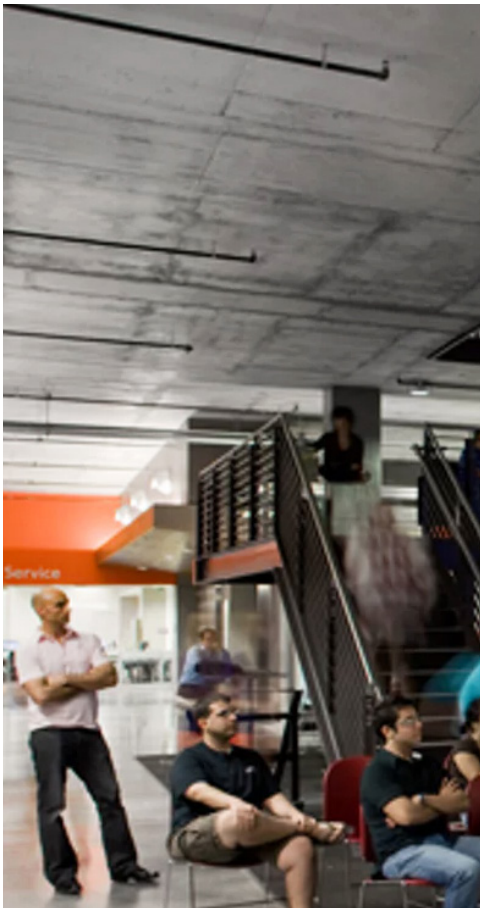
stories and allows open discussions to take place at all times of the day. The architects at Ehrlich Architects & HDR designed a building that not only met the growing needs for a university, but created an environmentally friendly facility that earned LEED Silver Certification.

THE TITUS SOLUTION

It was a privledge and honor for Titus to be selected as the HVAC provider for this project. The products selected for this new building were the DESV terminal unit, an assortment of 300/350R grilles, the OMNI diffuser, and a combination of TMS/TMSA diffusers.

The DESV is a Single Duct Terminal Unit. The Titus ESV is unique as it incorporates many design features that increase performance, decrease service and installation costs, and offer increased value. Titus' 300/350 series grilles define the standard for the HVAC industry. With high quality and competitive pricing these grilles form the back bone of a standard offering that will meet any application requirements.

For architectural ceilings, Titus has several options to choose from. The OMNI diffuser is an architectural ceiling diffuser with a steel plaque face. Its strong, clean, unobtrusive lines harmonize with the ceiling system without sacrificing performance. The curvature of the OMNI backpan works with the formed edges of the face panel to deliver a uniform 360 degree horizontal air pattern, without excessive noise or pressure drop. The TMS/TMSA are



square ceiling diffusers that deliver supply air in a true 360B pattern with low pressure drop. Their uniform, nearly horizontal jet from the outer cone maintains effective room air distribution even when the air volume varies over a considerable range. All sizes have three cones, giving a uniform appearance where different neck sizes are used in the same area. Additional Titus products selected were the FlowBar, ML and MP.

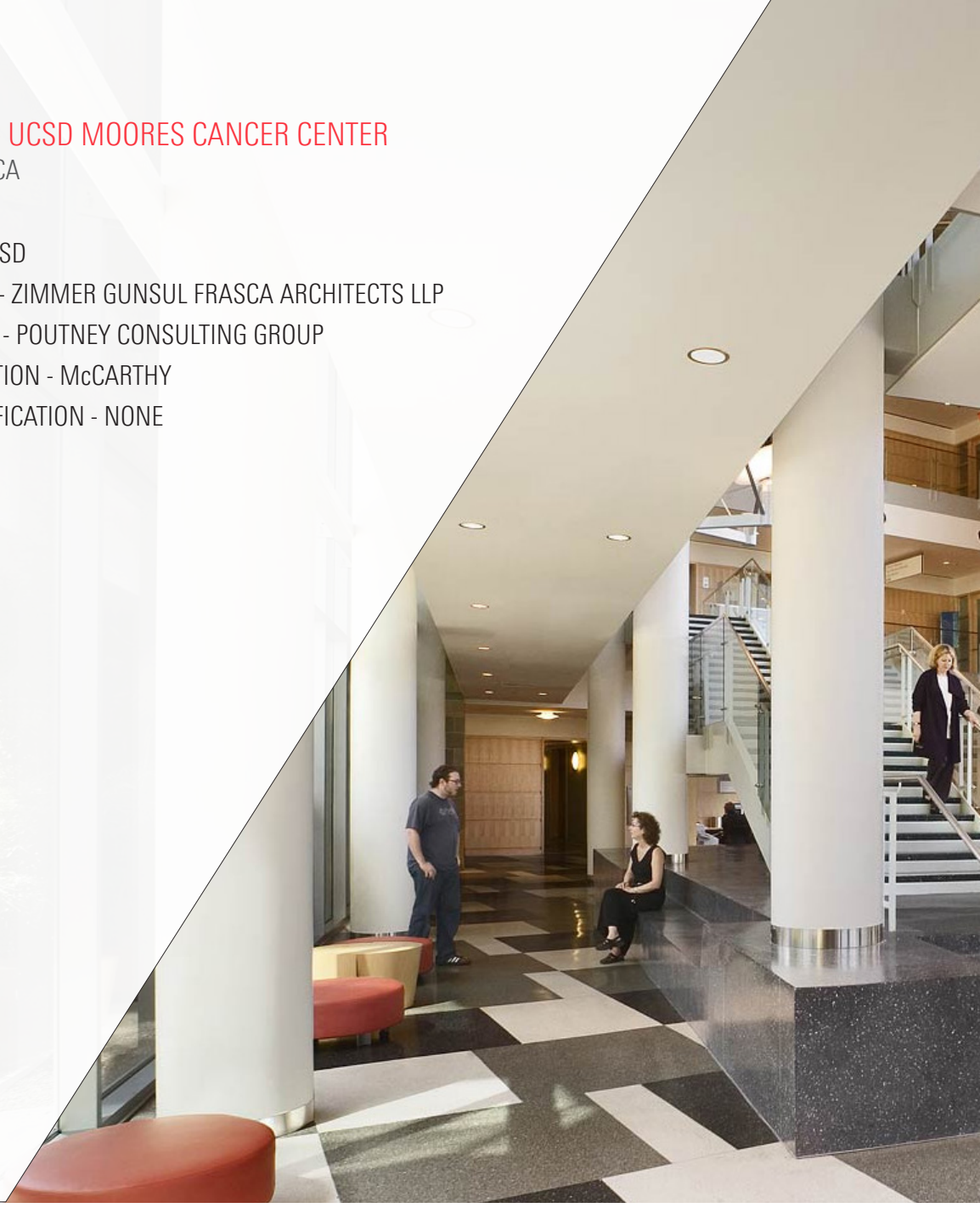
THE END RESULT

The new ASU Walter Cronkite School of Journalism and Mass Communication is a breathtaking building that is positioned to take the next generation of media to new levels of achievement. With access to so many media tools at their fingertips, these new scribes can utilize technology and their innate abilities to transform the way we learn about the latest news and events and even make Mr. Cronkite say his famous line - "And that's the way it is."

PROJECT - UCSD MOORES CANCER CENTER

San Diego, CA

CLIENT - UCSD
ARCHITECT - ZIMMER GUNSUL FRASCA ARCHITECTS LLP
ENGINEERS - POUTNEY CONSULTING GROUP
CONSTRUCTION - McCARTHY
LEED CERTIFICATION - NONE



ABOUT THE PROJECT

The University of California at San Diego Cancer Center is a stunning achievement for teaching, treatment and research into the causes and hopefully cures of all forms of cancer. The patients who walk through these doors will have access to the most advanced care, in a state-of-the-art setting. The groundbreaking work of the physicians and scientists associated with the Moores UCSD Cancer Center will benefit its patients for generations to come.

The UCSD Cancer Center is a 270,000 square-foot facility that houses clinical, research, educational, and outreach activities all under one roof. The center also includes a serene outdoor setting called the Garden of Hope. This tranquil, shaded bamboo garden can be used for dining and interaction

FEATURED PRODUCTS

UCSD CANCER CENTER
interior photos

with other patients. This location was designed specifically for the cancer patients to inspire hope and provide comfort during their treatment at the facility.

THE TITUS SOLUTION

Providing air distribution solutions for critical environment or cleanroom applications is not new to Titus. We have been the industry leader for air management for several decades. The products selected for the Moores UCSD Cancer Center were the TriTec, the PSS and the FlowBar.

The Tritec diffuser is a high volume, low velocity unit that utilizes radial air diffusion technology to dilute airborne contaminants. The airflow pattern is designed to produce a uniform pattern to prevent dead spots where contaminants can linger. It is an excellent choice for Class 1,000 to 100,000 rooms. The Titus Series PSS perforated star diffusers generate a high induction air pattern that maximizes throw. The deflector is mounted directly under the neck of the diffuser to generate the long-throw star pattern. As a result, pressure drop and noise levels are lower than typical curved blade perforated diffusers.

Titus FlowBar is an architectural linear diffuser system that maximizes engineering performance without sacrificing aesthetic considerations for the designer. Its outstanding performance allows higher airflows than conventional linear diffuser systems. The wide array of slot widths that are

available allow for more CFM per linear foot while minimizing noise and pressure loss. The Flowbar system is available in continuous linear, incremental linear and square configurations.

FlowBar also provides an installation alternative to the conventional linear diffuser. Conventional linear diffusers are supported by the duct system and in most cases are installed after the ceiling system is in place. For complete ceiling integration, the FlowBar system is offered with a large selection os flange styles compatible with various ceiling applications. Our unique clip/hanger support system allows for quick and easy installations. The system actually supports and becomes an integral part of the ceiling system and is installed along with the ceiling suspension system. This entire series of diffusers is available with two unique pattern controllers.

THE END RESULT

The new building represents a new beginning for UCSD as an NCI-designated Comprehensive Cancer Center. It is a tribute to the commitment of the university to establish a world-class cancer center that fosters interdisciplinary research and brings the benefits of research directly to the community it serves. The center serves as the benchmark for future facilities to meet or exceed.

PROJECT - GSU PARKER H. PETIT SCIENCE CENTER

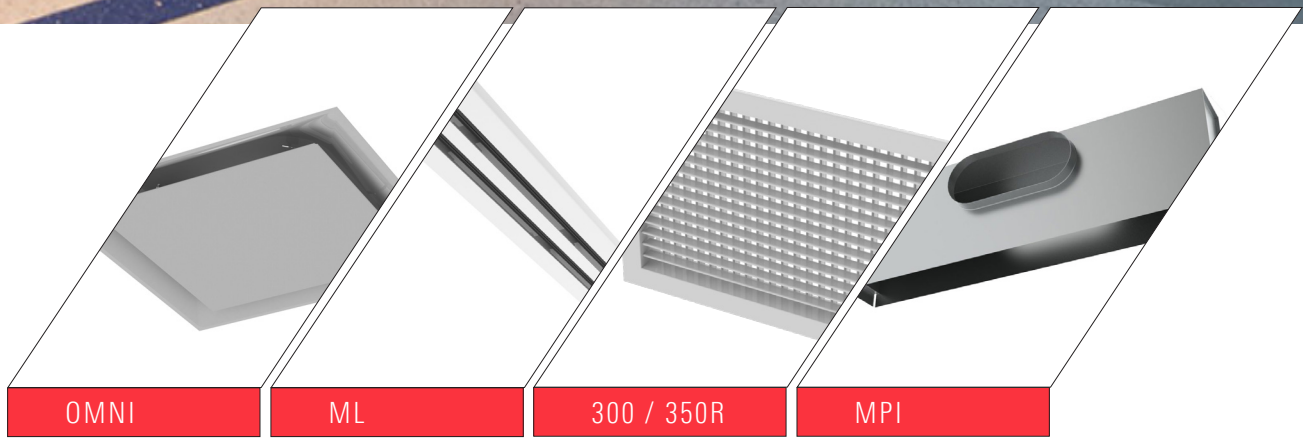
Atlanta, GA

CLIENT - GEORGIA STATE UNIVERSITY
ARCHITECT - CUH2A, INC.
ENGINEER - PBS & J
STRUCTURAL ENGINEER - KSI STRUCTURAL ENGINEERS
CONTRACTOR - McCARTHY CONSTRUCTION
LEED CERTIFICATION - NONE

ABOUT THE PROJECT

Georgia State University is now the envy of many institutions of higher learning with the addition of their new science and research facility. Designed by HDR Architects to be a lasting landmark for the city, the Parker H. Petit Science Center is a state-of-the-art building that opened in March 2010. The new multi-disciplinary 350,000-square foot facility augments laboratory and classroom space to accommodate an ever-growing curriculum, and enhances the East Side "science zone" of GSU's urban campus. The new science center offers basic science classes and research labs as well as housing specialized areas which includes: biotechnology, neurosciences, physical therapy, and sports medicine.

The Petit Science Center also has a 20,000 square-foot vivarium and a



FEATURED PRODUCTS

GSU SCIENCE BUILDING
interior photos

working Bio-Safety Level 4 suite. This makes Georgia State Univeristy one of very few universities to have a BSL-4 lab in the country.

THE TITUS SOLUTION

At Titus, we know that new innovations cannot be created without the proper equipment or in this case, the proper facility. Our air outlets selected for the Parker H. Petit Science Center were not only chosen for their aesthetic appearance, but for their superior performance as well.

The Titus OMNI is a steel Architectural Ceiling Diffuser. This plaque face diffuser satisfies architectural and engineering criteria. Its strong, clean, unobtrusive lines harmonize with any ceiling system without sacrificing performance. The curvature of the OMNI's backpan works with the formed edges of the face panel to deliver a uniform 360 degree horizontal air pattern, without excessive noise or pressure drop. It is an excellent selection for variable air volume systems.

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. The ML diffuser is also available in 1 through 8-slot configurations. The Titus MPI is an optional plenum for use with the ML modulinear series. When combined with the ML diffuser the MPI provides a tight horizontal air pattern that clings to the ceiling even at low volumes. Titus' 300 / 350 series grilles define the standard

for the industry. With high quality and competitive pricing these grilles form the back bone of a standard offering that will meet any application requirements.

THE END RESULT

The Parker H. Petit Science Center is the first of many planned enhancements to develop the surrounding area. Georgia State University has positioned itself to raise their profile within the scientific community. This new facility will definitely not only attract new students, but new instructors who are on the brink of making new discovers and are only hampered by the facilities in which they work.

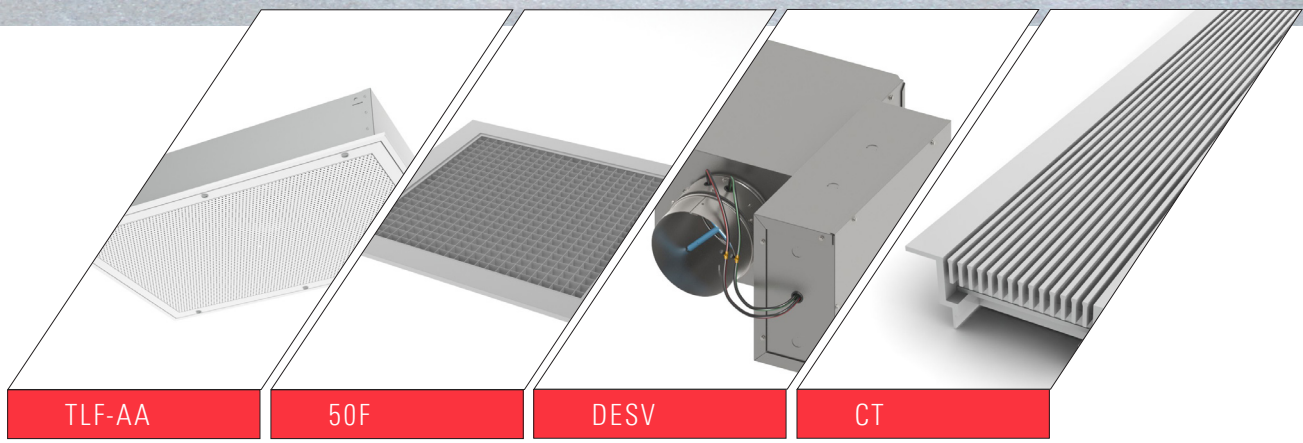
PROJECT - ASU BIODESIGN INSTITUTE BUILDING A

Tempe, AZ

CLIENT - ARIZONA STATE UNIVERSITY
LEAD ARCHITECT - GOULD EVANS
ASSOCIATE ARCHITECT - LORD, AECK & SARGENT
ENGINEER - NEWCOMB & BOYD
CONSTRUCTION - SUNDT CONSTRUCTION
LEED CERTIFICATION - LEED GOLD CERTIFIED

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.



FEATURED PRODUCTS

ASU BIODESIGN INSTITUTE
interior photos

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

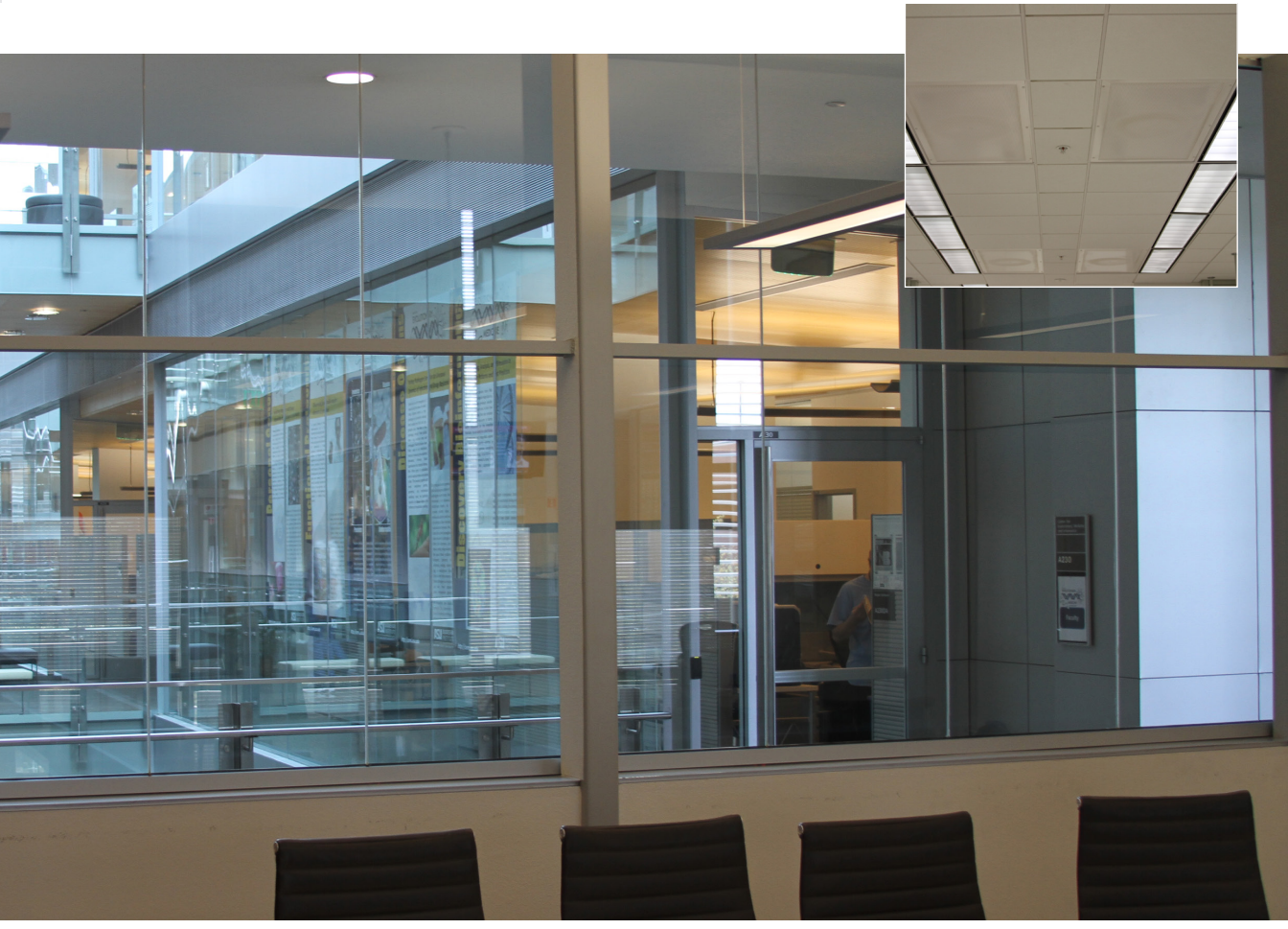
The BioDesign Institute has several air distribution products from Titus ranging from grilles and diffusers to terminal units. Our laminar flow diffusers, models TLF-AA and TLF-SS, are the industry standard for unidirectional flow. TLF diffusers can be used to create clean zones by positioning the diffuser 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.



PROJECT - UNLV SCHOOL OF DENTAL MEDICINE

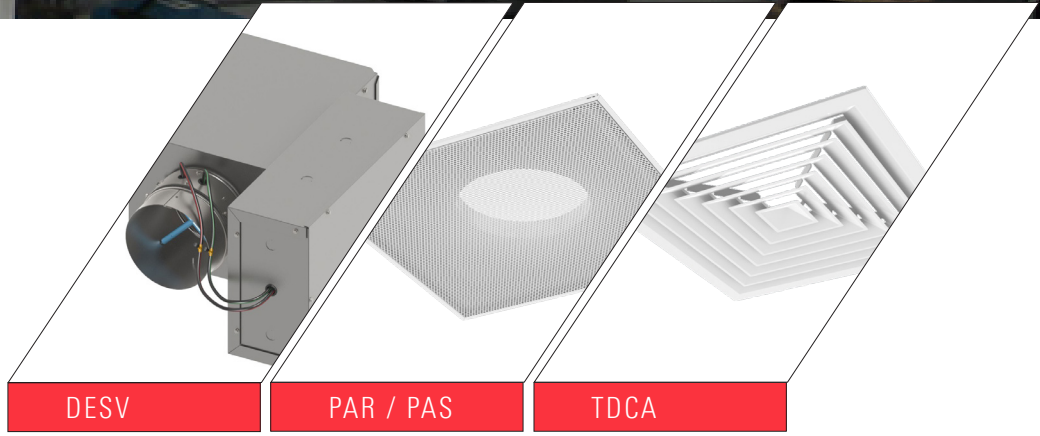
Las Vegas, NV

CLIENT - UNLV
ARCHITECT - CARPENTER SELLERS DEL GATTO ARCHITECTS
ENGINEER - LOCHSA ENGINEERING
CONTRACTOR - SLETTEN COMPANIES
LEED CERTIFICATION - NONE

ABOUT THE PROJECT

The UNLV School of Dental Medicine is a 2-story, 40,000 square-foot facility designed to teach, prepare and immerse the next generation of students into the field of dental medicine. Students have the opportunity to learn the basics from operating a dental practice to performing oral surgery. Formally an office building, the new state-of-the-art building houses everything needed for new dentists to be successful by incorporating the latest technology into their curriculum and day-to-day work environment.

The main floor of the school contains all of the dental practice and surgerical areas. Each area or "pod" as it is commonly known, is designed to focus on one particular aspect of dental medicine which includes the following: pediatric, ortho, endo and perio dentistry. This floor also has a wet lab,



FEATURED PRODUCTS

UNLV SCHOOL OF DENTAL MED.
interior photos

consultation rooms, administrative offices, and a CT scanner. The second floor mainly houses the classroom environments.

THE TITUS SOLUTION

Titus has worked with many schools in the creation of their HVAC system, especially those in critical environment applications. We were able to provide several Titus products for the university. The main products featured in the building are the TDCA diffuser, our perforated diffusers, and the DESV single duct terminal unit.

The Titus Series TDC diffusers can handle an unusually large amount of air for a given pressure drop and noise level. Their pleasing appearance harmonizes with various architectural details, especially in modular ceiling systems. Our TDCA diffuser is an adjustable discharge product that contains movable vanes that is accessible from the face of the unit. The discharge pattern of the diffuser can then be adjusted from horizontal to vertical which makes it extremely flexible. The TDCA also maintains an unbroken horizontal flow pattern from maximum cfm down to minimum. All of these features make this diffuser an excellent choice for Variable Air Volume (VAV) systems.

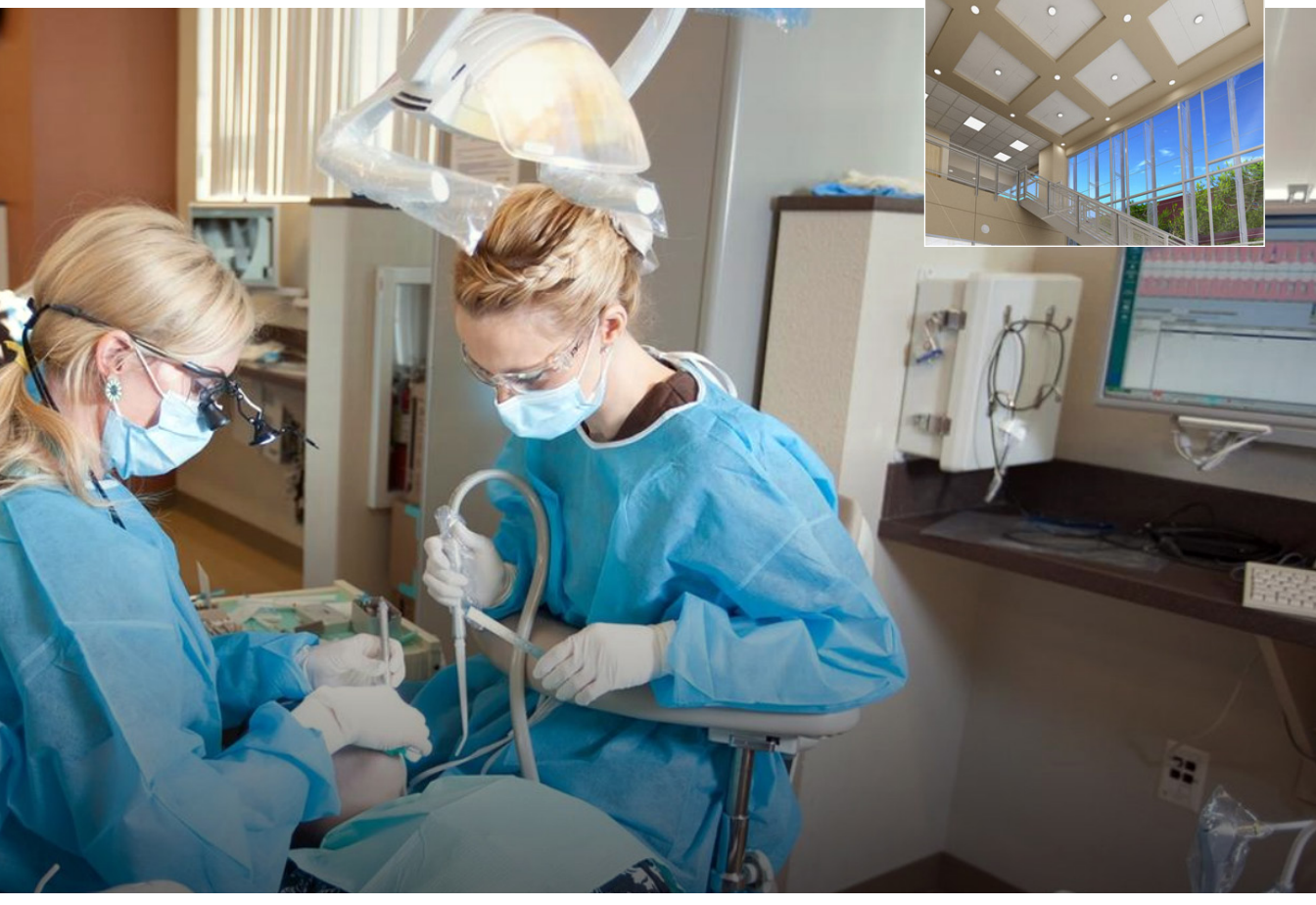
Perforated ceiling diffusers are typically selected to meet architectural demands for air outlets that blend into the ceiling plane. Titus perforated diffusers can be selected for a round pattern to maximize capacity or star pattern to maximize throw. The UNLV School of Dental Medicine utilizes a

combination of supply and return diffusers (PAS/PAR).

Single Duct terminals are the fundamental building blocks for 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.

THE END RESULT

The new school, which opened its doors in January 2015 was designed to meet the requirements for LEED Gold but actually achieved LEED Platinum Certification and now has a total occupancy of 775 students and staff. With dedicated spaces allotted for day care, early childhood education, play areas and a public library, Amber Trails Community School is a vital piece of a Winnipeg community's puzzle. Thanks to a sustainable design and energy efficient HVAC system, the multipurpose space serves as a daily reminder to students, teachers and the overall community about how buildings can have a positive impact on communities beyond their intended uses.



PROJECT - OSU THOMPSON LIBRARY

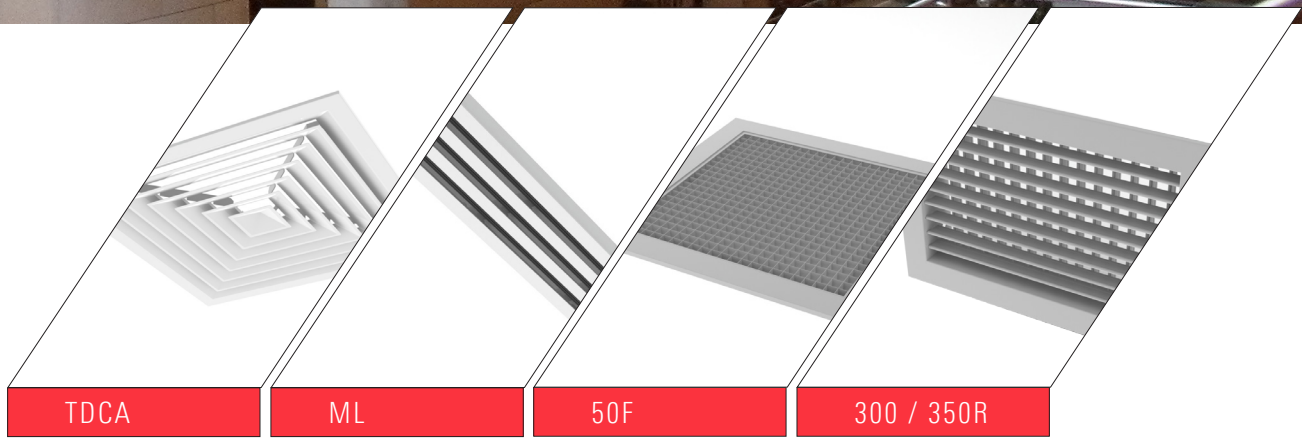
Columbus, OH

CLIENT - THE OHIO STATE UNIVERSITY
ARCHITECT - GUND PARTNERSHIP / ACOCK ASSOCIATES
CONSTRUCTION - TURNER CONSTRUCTION
LEED CERTIFICATION - NONE

ABOUT THE PROJECT

In an age where new and technologically advanced buildings are being built everyday, The Ohio State University faced a difficult decision - to demolish their existing library or renovate it. The answer was renovation and it turned out to be the correct one. The new Thompson Library was recently reopened after a three year renovation and offers many amentities that patrons would expect at new libraries.

With funding from the Athletic Department, the architects at Gund Partnership and Acock Associates were able preserve the rich history of the original library and infuse it with modern conveniances from today. The renovation and expansion transforms the original library into a 309,000 square-foot building. Places to study throughout this 11-story building have



FEATURED PRODUCTS

OSU THOMPSON LIBRARY
interior photos

drastically increased. New computers and wireless access to the internet are definite upgrades. Other amentities include a cafe for study breaks, a gallery that houses special collections of art from the library and breathtaking views of the campus and Columbus, Ohio can be found on the eleventh floor.consultation rooms, administrative offices, and a CT scanner. The second floor mainly houses the classroom environments.

THE TITUS SOLUTION

Titus has extensive experience in renovating outdated HVAC systems into new efficient systems that help save energy. We were able to supply this project with an assortment of grilles and diffusers that not only blend well architecturally, but provide superior performance.

TDCA diffusers handle an unusually large amount of air for a given pressure drop and noise level. Their pleasing appearance harmonizes with various architectural details, especially in modular ceiling systems. It also has an adjustable air discharge pattern and maintains an unbroken horizontal flow pattern from maximum cfm down to minimum cfm. The TDCA is truly an excellent selection for variable air volume systems. The 50F is an Eggcrate grille that has one of the highest free areas of any return grille. These grilles are available with an aluminum border and aluminum grid; a 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 too.

The Titus ML Modulinear diffuser is a high performance, high quality linear slot diffuser. Its unique "ice tong" deflector blades allow for both changes in air volume and direction from the face of the diffuser. Modulinear diffusers are designed for variable air volume systems. They project a uniform blanket of air that adheres to the ceiling even at low flow rates. This diffuser is also available in 1-, 2-, 3-, and 4-slot configurations. Finally, Titus' 300 / 350 series grilles define the standard for the HVAC industry. With high quality and competitive pricing, these grilles form the back bone of a standard offering that will meet any application requirement.

THE END RESULT

The new William Oxley Thompson Library is now a library that students, faculty, and staff can be proud of for quite some time. This renovation begins a new era of learning for the university.back to life while creating an open and stunning work environment.

Titus
Redefine your comfort zone.™

CASE STUDY PROJECTS

ADVANCING THE SCIENCE OF AIR DISTRIBUTION

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