

C A S E S T U D Y
PROJECTS




APPLICATIONS

01

LIBRARIES

ADVANCING THE SCIENCE OF AIR DISTRIBUTION

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

An abstract graphic consisting of numerous thin, overlapping, wavy lines that create a sense of motion and depth. The lines are light gray and originate from the bottom right corner, extending towards the center of the page.

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 - WALNUT CREEK PUBLIC LIBRARY

Walnut Creek, CA

CLIENT - CITY OF WALNUT CREEK

ARCHITECT - GROUP 4 ARCHITECTS

CONTRACTOR - WEST BAY BUILDERS

LEED CERTIFICATION - LEED GOLD CERTIFIED



ABOUT THE PROJECT

The new Walnut Creek Library opened on July 17, 2010. Designed by Group 4 Architects to achieve LEED Certification, this new facility has many amenities that the young and old can utilize for several years to come. Eventually earning LEED Gold Certification from the USGBC, the library contains a large meeting room, conference room and a new technology center that can be used by anyone. The children's area is designed to foster reading in an open and inviting environment that has views of the garden while the young adult area is designed for the technologically advanced teens of today.

The library also incorporates a wide variety of Green Building design elements, including daylight harvesting, an advanced mechanical system





FEATURED PRODUCTS



WALNUT CREEK LIBRARY
interior photos

and utilizing recycled materials. The placement of 80% of parking spaces under the building and plaza areas reduces the heat island effect of paving and preserves space in the Civic Park as well.

THE TITUS SOLUTION

An equally important and vital piece to the green design was to have an energy-efficient HVAC system in place that offered sustainable features as well. The Walnut Creek Library selected the Titus UnderFloor Air Distribution (UFAD) system as well as the FlowBar to achieve this goal.

The main underfloor product featured in the library was the TAF-R diffuser. The TAF-R is a GreenSpec Listed product that is available in standard light gray or black. All components are constructed of a high-impact polymer material that is designed to resist damage from foot traffic found in libraries. Additional colors may be specified to match any building's interior scheme. This model can help contribute toward achieving LEED credits.

Another high performing and energy saving product that can be found in the library is the Titus FlowBar. The FlowBar is an architectural linear diffuser that maximizes engineering performance without sacrificing aesthetic considerations of the design 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.



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 of flange styles compatible with various ceiling applications. Our unique clip/hanger support system allows for quick and easy installations. The FlowBar system actually supports and becomes an integral part of the ceiling system and is installed along with the ceiling suspension system.

The Titus FlowBar offers a new concept of air distribution that fully integrates with all ceiling systems. The FlowBar system is available in continuous linear, incremental linear and square configurations. This entire series of diffusers is available with two unique pattern controllers as well.

THE END RESULT

The Walnut Creek Library is a shining example of what can happen when the community and the designer are fully engaged with the design of a new facility. This collaboration allowed the Group 4 Architects to create an aesthetically pleasing building that will service this community for many generations to come.



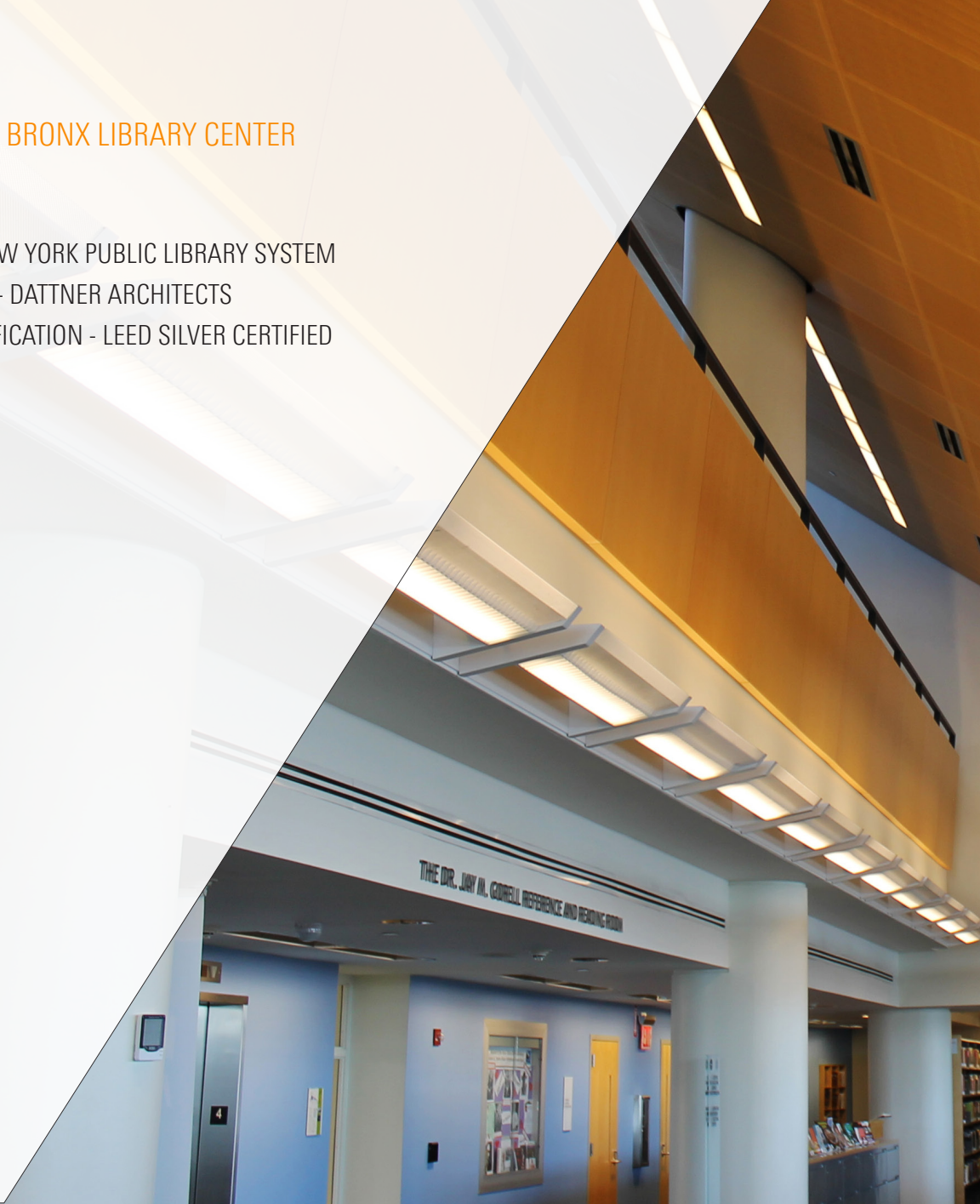
PROJECT - BRONX LIBRARY CENTER

Bronx, NY

CLIENT - NEW YORK PUBLIC LIBRARY SYSTEM

ARCHITECT - DATTNER ARCHITECTS

LEED CERTIFICATION - LEED SILVER CERTIFIED



ABOUT THE PROJECT

The Bronx Library Center is a 78,000 square foot facility that offers many amenities 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





FEATURED PRODUCTS



BRONX LIBRARY CENTER
interior photos

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 360 degree 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.



PROJECT - OAK PARK PUBLIC LIBRARY

Oak Park, IL

CLIENT - CITY OF OAK PARK

ARCHITECT - NAGLE HARTRAY ARCHITECTURE

LEED CERTIFICATION - NONE



ABOUT THE PROJECT

The Oak Park Public Library is a breathtaking revitalization and renovation project that doubled the size of the previous building. The design team from Nagle Hartray Architecture partnered with the community to create a facility that would meet their needs while preserving the history of the era in which the library was built. The community also wanted to have an eco-friendly facility, but with a limited budget, the design team was faced with another challenge. The library received several awards including the Chicago Building Congress Award of Merit and the Midwest Construction Magazine's Best of 2004 Award for New Library Construction.

Meeting the sustainable elements that the community wanted meant the architects would have to become creative. The library used material within





FEATURED PRODUCTS



OAK PARK PUBLIC LIBRARY
interior photos

a 500-mile radius of the building for construction and applied a green roof which increases insulation during extreme weather while prolonging the life of the roof itself. Storm water drainage is also reduced with the addition of the green roof. The library also has underground parking, amenities for young and old to utilize and totals 104,000 square-feet.

THE TITUS SOLUTION

The new library has a state-of-the-art HVAC system. Titus was pleased to be selected to provide the grilles, diffusers and terminal units for this project. Throughout the library, we have hundreds of products providing superior air distribution. The main products featured in the facility are the OMNI, the TBDI-80, the DTQS, and the DESV terminal unit.

The Titus OMNI is a steel plaque face diffuser that satisfies architectural and engineering criteria. 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. It is an excellent selection for variable air volume systems. Our TBD diffusers are a series of plenum slot diffusers that provide flexibility, great performance and ease of installation. Their adjustability and streamlined appearance make them the industry standard for plenum slot diffusers. The TBDI-80 works with many types of ceiling systems - plaster, splined, regressed, and standard lay-in.



The terminal units selected for this project are equally as impressive as the GRD products. The Titus DESV is a single duct terminal unit. The 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 DTQS is a fan powered terminal unit that maintains the VAV energy savings at the central fan. Designers choose Series flow terminals for their characteristics of constant air delivery and temperature blending.

THE END RESULT

The newly renovated Oak Park Public Library combines modern technology while honoring the architecture from a time long ago. This new blend of amenities and historic architecture will definitely serve the community for many years to come and allow this generation to pass down a piece of history to the next generation.



PROJECT - PATRICK HEATH PUBLIC LIBRARY

Boerne, TX

CLIENT - CITY OF BOERNE, TX

ARCHITECT - OCO ARCHITECTS

LEED CERTIFICATION - LEED GOLD CERTIFIED



ABOUT THE PROJECT

The new state-of-the-art Patrick Heath Public Library is a welcomed addition to the community and surrounding areas near Boerne, Texas since it opened on June 4, 2011. Designed by OCO Architects, this LEED Gold Certified library is a 30,000 square-foot facility and offers new amenities and programs that its predecessor couldn't. Guests will now have access to cultural programs and other resources. The lower level, designed primarily for children features a youth activity area to promote learning and reading and meeting space for upto 100 people. The upper level of the library has books for young adults, adults, meeting space, and several study areas. Also featured throughout the library are new computers for patrons to use.



The design team, with input from the community, created a facility that



FEATURED PRODUCTS



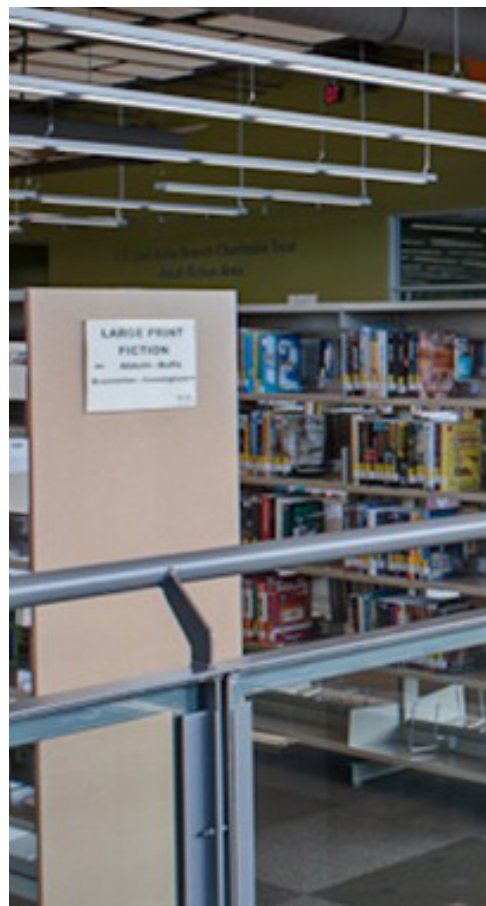
PATRICK HEATH LIBRARY
interior photos

also utilized many Green Building concepts. The many windows seen throughout the building allows the Patrick Heath Public Library to not only take advantage of the abundance of natural light and conserve energy, but to also highlight the beautiful scenery of the Hill Country and the surrounding area that the library was built on. Other sustainable elements used in the library are using rainwater harvesting and reuse of HVAC condensation, installing low-flow water closets and installing bicycle racks to encourage alternate forms of transportation. The HVAC system was also designed with energy-saving concepts in mind.

THE TITUS SOLUTION

Providing open-ceiling solutions is nothing new to Titus. We have numerous solutions to choose from, especially products that mount directly to the duct. The S300F is a Spiral Grille that mounts directly to the duct, eliminating the need for duct taps. It is available in two border styles: S series for radius end cap to match duct diameter, and US (Universal) series which can be used on any duct diameter. Each grille has a gasket to provide a tight seal to the duct. Other Titus products featured in the library are the 50F Eggcrate grille and the TMS-AA diffuser.

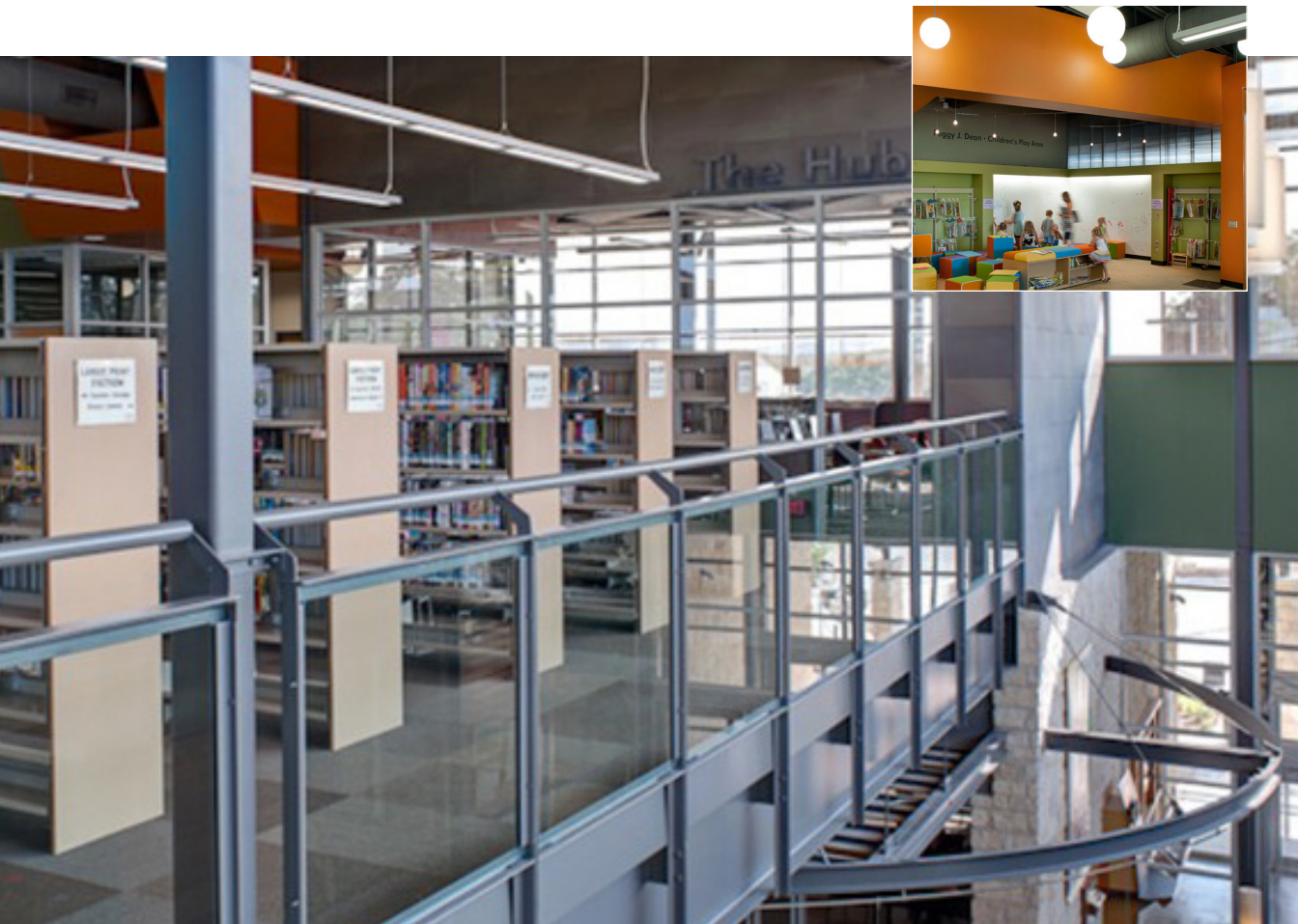
The 50F is an Eggcrate grille that is offered in $\frac{1}{2} \times \frac{1}{2} \times \frac{1}{2}$ -inch, $\frac{1}{2} \times \frac{1}{2} \times 1$ -inch, or $1 \times 1 \times 1$ -inch core sizes. Titus eggcrate grilles have the highest free area of any return grille and the 50F is available with aluminum border and aluminum grid. The TMS-AA 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.

THE END RESULT

Since it opened earlier this year, the Patrick Heath Public Library has definitely made a positive impact on the citizens of the Hill Country area in which it was built. The architects used the surrounding landscape to perfectly place the library to enhance the new amenities while building a relaxing environment to enjoy scenic views. This facility will positively impact lives for many generations to come.



PROJECT - ANACOSTIA LIBRARY

Washington, D.C.

CLIENT - DC PUBLIC LIBRARY SYSTEM

ARCHITECT - THE FREELON GROUP

CONSTRUCTION - FORRESTER CONSTRUCTION

LEED CERTIFICATION - LEED SILVER CERTIFIED



ABOUT THE PROJECT

The DC Public Library System continues to enrich its neighborhoods with impressive libraries. The Anacostia Library opened its doors on April 26, 2010. This two-story building is 22,000 square feet of inviting spaces for adults, teens and children to enjoy for many years to come. Designed by The Freelon Group, the new library offers many amenities to choose from. There are 40,000 books, dvds, cds, and other material for all age groups. This LEED Silver Certified building also has comfortable seating for 200 customers, quiet study areas and two conference rooms. Visitors have access to free Wi-Fi internet, laptop computers and Mac computers. There are also separate designated reading areas for adults, teens and children.



Sustainable solutions can be seen on the inside and exterior of the building.



FEATURED PRODUCTS



ANACOSTIA LIBRARY
interior photos

The building was built on a previously developed site and is located near several bus routes and a subway station. Other green features include daylight harvesting, high building insulation, occupancy sensors, and solar panels.

THE TITUS SOLUTION

The highly efficient HVAC system used in the new library was selected to help achieve LEED certification. The Titus UnderFloor Air Distribution (UFAD) system was selected to be the primary source of airflow for the new library because this innovative system affords architects and building owners options long after the building is finished. The TAF-R diffuser is a round underfloor product that is architecturally pleasing and designed for use in high induction raised floor applications. It is constructed of a high impact, polymeric material that's durable enough to resist foot traffic.

The diffuser now has the fastest installation in the industry with the new innovative spring clip design and it can be easily relocated to another location simply by relocating the floor panel it is installed in. The TAF-R diffuser is also a GreenSpec Listed™ product that can help contribute toward achieving LEED credits. Another benefit of the TAF-R is the ease in which it can be adjusted. The top of the unit can be turned clockwise or counterclockwise to reduce or add airflow into the occupied space.

● The TBDI-30 is an insulated high performance plenum slot diffuser that



utilizes the Titus Modulinear pattern controller. This feature allows for 180 degree adjustment of the discharge direction as well as volume control from the face of the diffuser. The CT linear bar grille. Titus CT linear bar diffusers are designed for both heating and cooling applications, supply as well as return. It is 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.

An added bonus of the CT and TAF-R diffusers is they both are available in wood grain finish options which can add to the architectural beauty of any interior.

THE END RESULT

The Anacostia Library incorporated many elements in its design. Green Building concepts and the surrounding community itself played integral roles in the design of the new library. By being open to meeting the needs of the surrounding community, The Freelon Group created a library that teaches everyone about the environment while creating an innovative and welcoming facility for all to enjoy for many generations to come.



C A S E S T U D Y
PROJECTS



ADVANCING THE SCIENCE OF AIR DISTRIBUTION

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