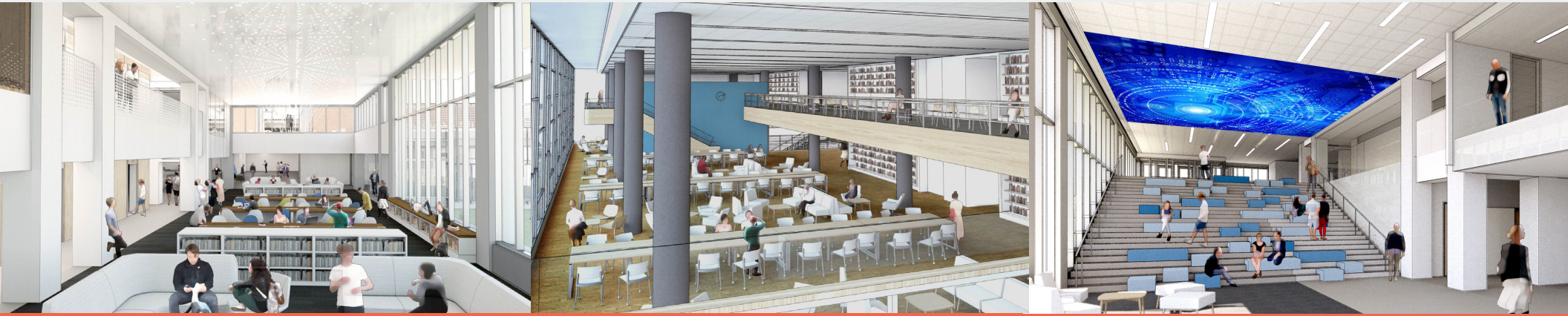


RENEWAL

REIMAGING THE GEORGIA TECH LIBRARY FOR THE 21ST CENTURY

In December of 2013, the collaborative design team of Praxis3 and BNIM began work on the Renewal of the Price Gilbert Memorial Library at the Georgia Institute of Technology in Atlanta, GA, a \$64 million transformational project including the renovation of 230,000 square feet across two buildings. The idea for this project was born a year earlier, when Georgia Tech entered into a partnership with Emory University to build an off-campus “Harvard-style” book storage facility, later known as the Library Service Center. The benefits of the Library Service Center were multiple: both institutions immediately increased their collections in previously under-represented disciplines; the books themselves would be better preserved, lengthening their life spans significantly; and additional floor space would be created in the respective library buildings. For Georgia Tech, it was an opportunity to create a Research Library for the 21st century.





BOOKS & PEOPLE

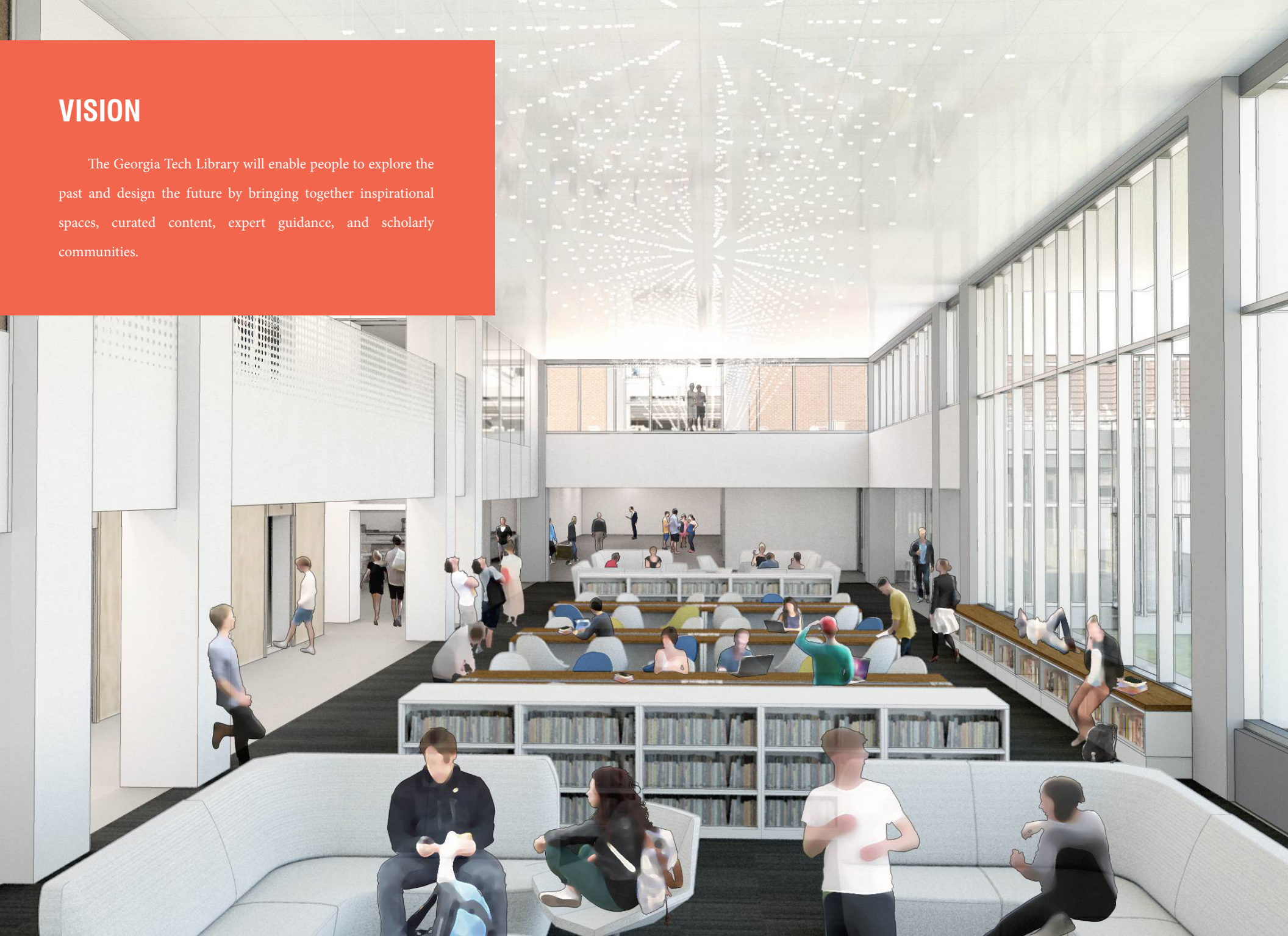
Compared with its peer institutions, the Georgia Tech Library ranked near the bottom in terms of capacity, with space for approximately half its target seat count. Obviously, the relocation of portions of Library's collections presented an opportunity to create new spaces for additional students and faculty. However, the low-ceilinged and often windowless spaces that had once been optimal for the storage of books were far from optimal as spaces for people. The conversion of these spaces into well-lit, comfortable spaces for scholarship was a design imperative, and every effort was made to introduce height, natural light, and views at newly occupied spaces.

LONG LIFE, LOOSE FIT

The concept of Long Life, Loose Fit involves the design of spaces that are configured such that they can absorb the inevitable programmatic changes that will occur during the lifetime of a building and the use of quality materials and assemblies that while attractive are also durable and easily maintained. The existing Price Gilbert building is already a very good example of a Long Life, Loose Fit design, with good solar orientation, large double-height spaces flanked by lower-ceilinged support spaces, relatively open floor plans, and a rich but durable materiality. In fact, the configuration of the existing double-height reading rooms provided a template for several design interventions proposed in Crosland Tower. The renewal design also seeks to use furniture solutions for delineating spaces where possible, providing a simple means of reconfiguring spaces as programmatic needs change. Additionally, the location of power and data backbones and outlets has been carefully considered to optimize flexibility.

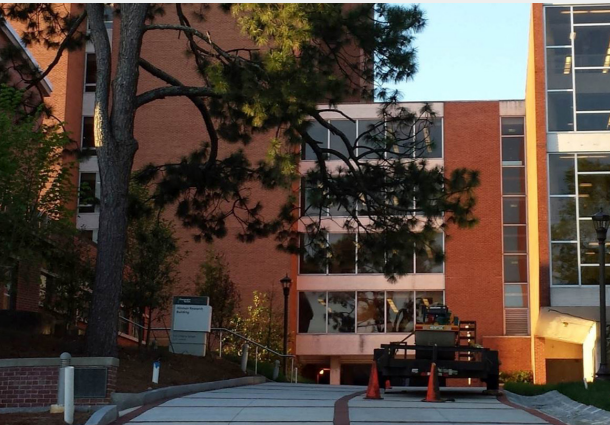
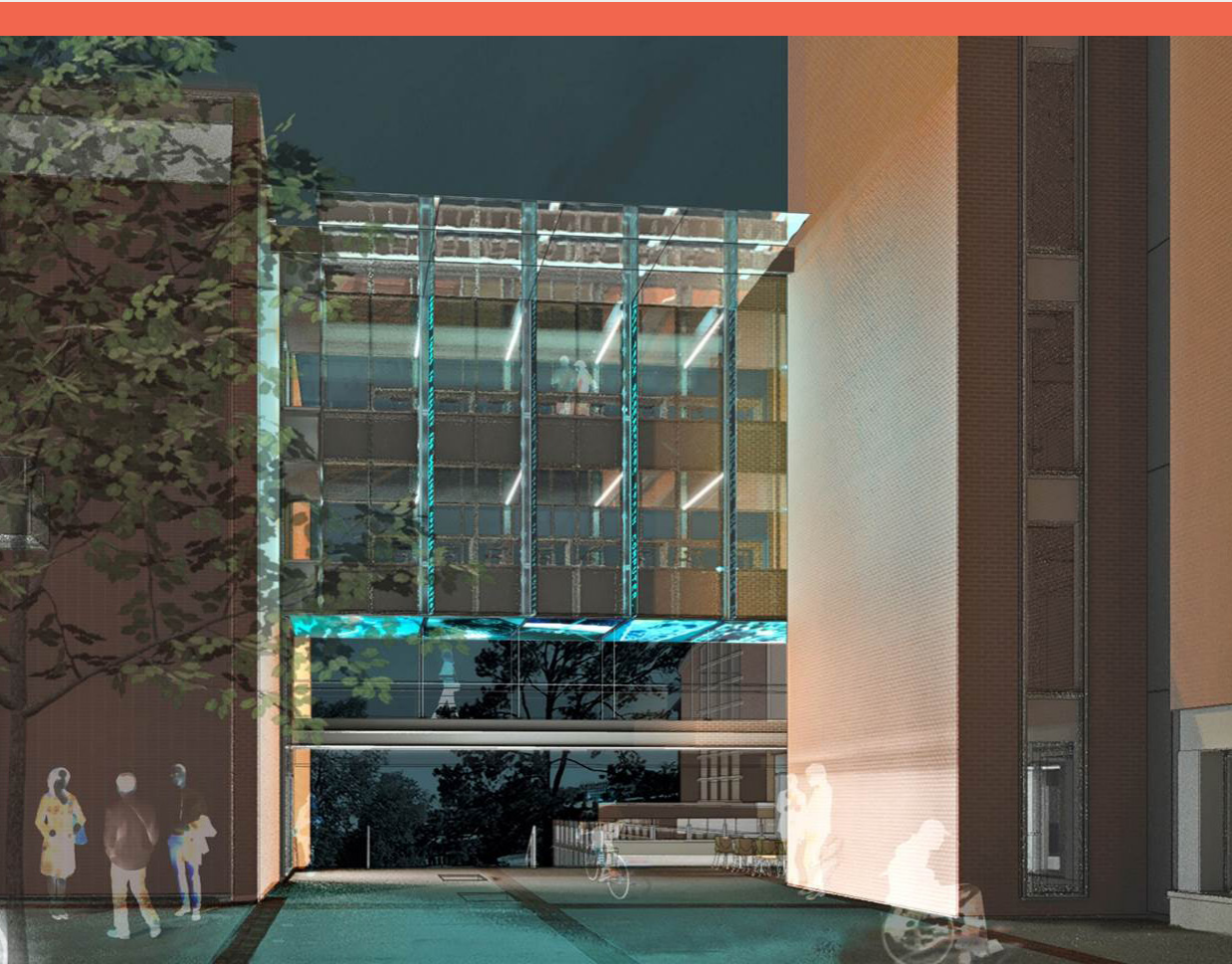
VISION

The Georgia Tech Library will enable people to explore the past and design the future by bringing together inspirational spaces, curated content, expert guidance, and scholarly communities.



CAMPUS CROSSROADS

While the Library certainly finds itself at a programmatic crossroads with a new service model, an increasingly digital collection, and a focus on providing places for people in addition to books, the Georgia Tech Library is also situated astride a literal crossroads on the Georgia Tech campus. The Library faces onto Bobby Dodd Way to the south, an east-west pedestrian spine connecting the residence halls of East Campus with the Student Center complex and West Campus and which is possibly the most heavily traveled pedestrian route at Georgia Tech. Additionally, the renewal is designed to enhance an existing north-south pedestrian route passing between the two Library buildings, and which connects the historic campus with areas to the north. In its current configuration, this route is constricted as it passes below the existing bridge connector, while the mass of the connector itself creates a wall that denies a continuity of space. In the renewal, the existing bridge is removed and replaced with a lighter, slimmer, and more transparent bridge that frames the view from both directions. Once a barrier, the design of the new bridge transforms the Library into a gateway between the historic campus and the Architecture School to the north, and simultaneously opens up the ground plane to create a pleasant and secure public plaza.

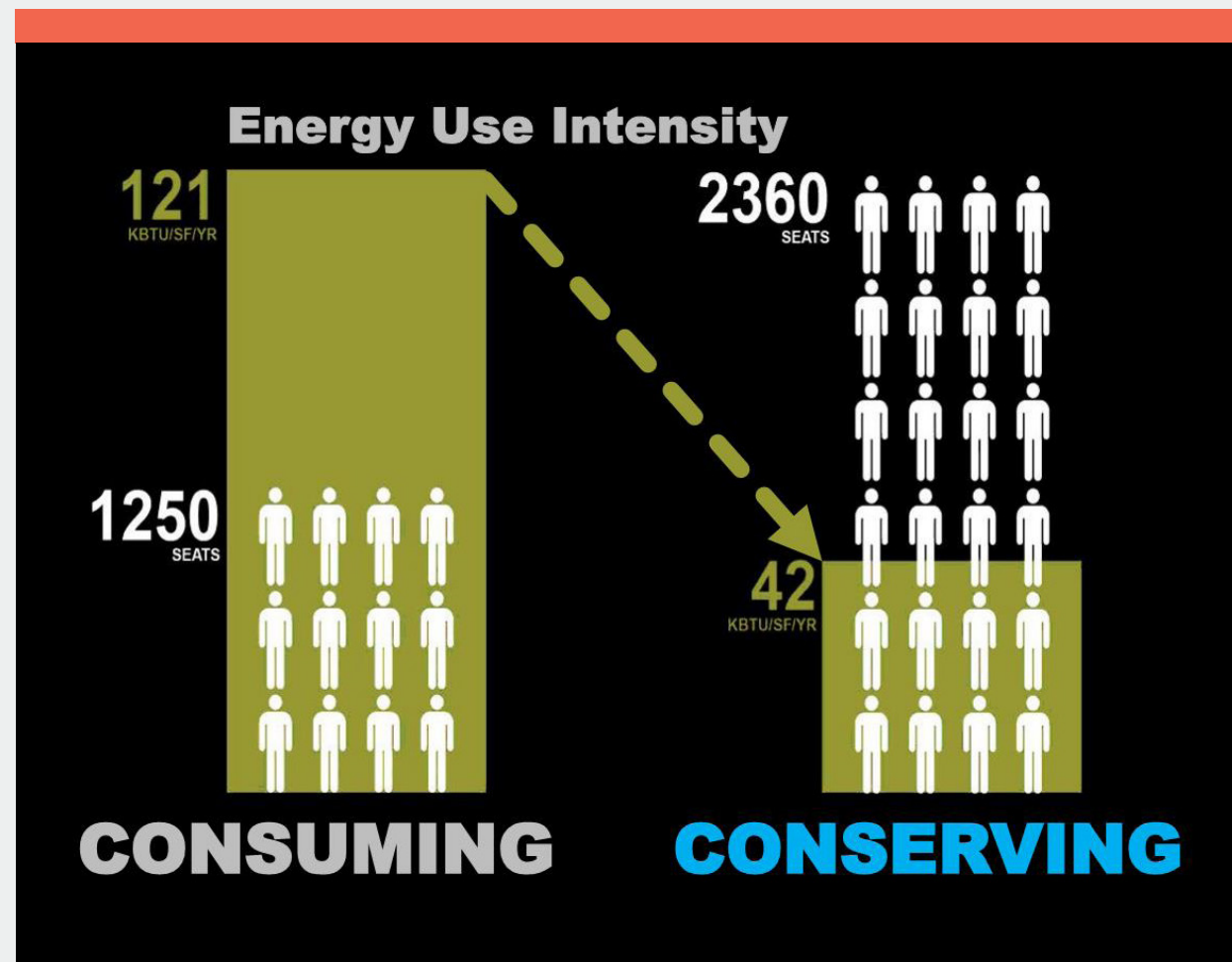


BEFORE

AFTER

HIGH PERFORMANCE AND INTEGRATED DESIGN

A High Performance Integrated Design approach brings together all of the various issues, project phases, key team members, stakeholders, and project components into a single working model from the beginning of a project. This allows the team to look for opportunities to balance investments in various building systems to create the best performance and long term value, so that each individual system can be right-sized to play its part in achieving the desired outcome. For the Price Gilbert/Crosland Tower complex, one of the lowest performing existing systems was the building envelope, with very little thermal insulation and single pane glazing for the majority of the skin. By modeling various envelope modification scenarios, the design team was able to determine that while adding insulation to opaque exterior walls would provide nominally higher performance, the greater benefits lay with improvements to the glazing systems and adding roof insulation. The costs saved by not retroactively adding insulation to exterior walls allowed the team to utilize more advanced HVAC strategies, including the widespread use of active chilled beams combined with radiant heat, which, in combination with advanced controls systems, is markedly more efficient than conventional forced air systems.



Another energy performance challenge was created by the Library Renewal program itself. The proposed occupant capacity of the Library is double the current capacity, which increases the cooling load due to the heat generated by all those additional bodies. The results speak for themselves: despite doubling the building's population the renewed Library will use only a third of the energy it used before renewal.

It's a staggering statistic – the building serves twice as many people with only a third of the energy use – and it provides but one example that speaks to the power of leveraging high performance integrated design.

AN INTERNATIONAL STYLE LANDMARK

Designed by Paul M. Heffernan of the Atlanta architectural firm Bush-Brown Gailey and Heffernan, the Price Gilbert Memorial Library provided a sleek symbol of modernity and technological sophistication when it was dedicated in 1953. The International Style building received international acclaim and was featured in numerous design publications touting its clean lines, open plan, and crisp detailing. The five story building is organized around

two large double-height reading rooms with expansive north-facing curtain wall glazing, which flood the space with diffuse natural light. The reading rooms are flanked on each end with sculptural communicating stairs that grant access from a continuous mezzanine around the remaining sides of the space. It's a beloved building, a campus landmark, and a fine example of mid-century modern architecture. The design approach for this building was to retain the existing architectural expression while replacing outdated systems and assemblies with new, high performance solutions that will extend the life of this sixty year old building another sixty years.





DIGITAL MEDIA

Historically, the overwhelming presence of books has been a defining characteristic of Libraries. The reading rooms of the world's great libraries were traditionally high-ceilinged spaces surrounded by multiple levels of book stacks, creating inspired and inspiring spaces for scholarship. In the past, books were relatively rare, extremely expensive, and fiercely protected in Library buildings designed with closely guarded entrances. In the digital age, books are increasingly abundant, relatively inexpensive, and can be accessed from virtually anywhere via the internet. In fact, one of the primary reasons for Georgia Tech's decision to relocate much of its physical collection to the off-campus Library Service Center was that in 2013 only five percent of the Library's acquisitions were physical books. To be clear, the Renewed Library will still have books in it – twenty five thousand volumes will remain in the Library and will no doubt continue to inspire the scholars who use them - but Tech's embrace of the digital age has also

created an opportunity to pioneer new types inspirational spaces that leverage the power of digital media. Five strategic interventions in the Library seek to create immersive and media-rich environments that will highlight digital activities this might otherwise remain unseen: they seek to make the invisible visible. In some cases, these environments are literally interactive, allowing users to browse the collection or obtain information via touch screens or mobile devices. In others, the intervention showcases digital activity, such as a dashboard highlighting the building's energy or water use or water, or a real-time display of active searches. One of the most exciting interventions is called the "Media Bridge" and it seeks to create a tension between digital and physical media, incorporating both digital animations (text streams, video screens) and optical phenomena (reflection, transparency, lenticularity) located on the new bridge that connects the two buildings and also frames the Cherry Street pedestrian corridor, a major route connecting the historic campus with the northern parts of the campus. The Media Bridge works

on multiple scales, simultaneously providing a campus-scaled landmark, an interior circulation route, and human-scaled study spaces. And befitting an Engineering School, the Media Bridge provides opportunities for students and faculty to experience it from both the inside and the outside, the digital-era equivalent of looking at the clockworks inside a clock tower. These interventions enable users to experience digital activities and scholarship that would otherwise remain virtual or invisible. In the same way that rows of book stacks have historically connoted scholarship in traditional libraries, the digital media interventions at the Price Gilbert Library serve as an index of the innovative scholarship hosted by the 21st Century Research Library.

INSPIRATIONAL SPACE

For the Library faculty and staff, perhaps the most important goal for the Library Renewal was the need to create Inspirational Spaces – spaces that inspire students to participate in the great tradition of scholarship that Research Libraries have fostered for centuries. Historically, Libraries have relied upon an overwhelming presence of books in combination with dramatic, high-ceilinged spaces to create this sense of inspiration. The existing Price Gilbert reading rooms, with their high ceilings, expansive exterior views, and surrounding mezzanines of bookstacks, have been inspirational spaces for Georgia Tech students and faculty for sixty years. In the renewal design, although the quantity of stacks has been reduced, the stacks surrounding the reading rooms have been turned ninety degrees to increase the visual impact of the remaining collections toward the reading rooms. In Crosland Tower, the “familiar section” of the Price Gilbert Reading Rooms is employed to create double height spaces by strategically removing large areas of the existing floor

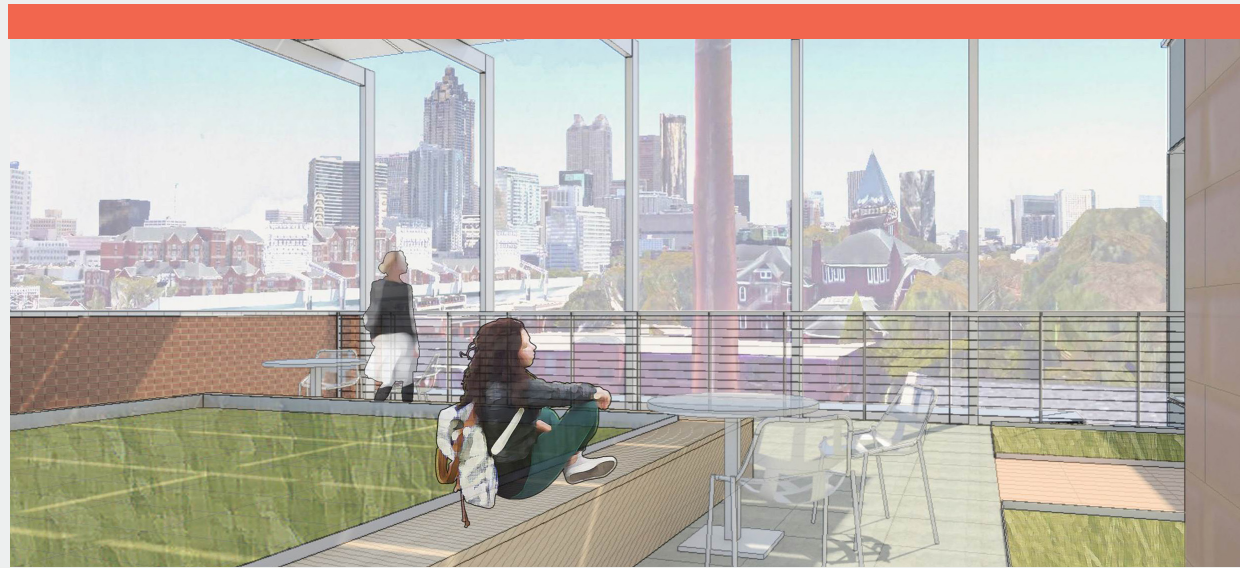


plate and allowing the adjoining levels to overlook the resultant high-ceilinged spaces. Secondly, the design seeks to leverage the Library’s location at one of the highest elevations on the campus, with views to an impressive Atlanta skyline that has grown up around the Tech campus. This is particularly the case with the Crosland Tower building, a high-rise structure with panoramic vistas from its upper levels. The upper story of Crosland Tower includes a large Reading Room/

Event Space with spectacular views of north campus and the Midtown skyline, and a large Meeting Room with glazing on three sides opening onto two rooftop terraces with views of the historic portion of the Tech campus and the skyscrapers of the downtown skyline. These versatile spaces will certainly inspire scholars, but they will also be inspiring spaces for the Georgia Tech community in general, able to host both academic events and social events.



TRANSFORMATION

In 1969, an eight-story addition was constructed primarily to house the rapidly growing Library collection. The original design of Crosland Tower was optimized for the storage of books, with low ceilings and minimal glazing to protect the books from harmful UV rays, a response to a program that is now mostly obsolete. The renewal design approach for Crosland Tower is transformational, including the removal of north- and south-facing brick facades and their replacement with high performance curtain wall glazing, optimized for daylight harvesting and views to the campus and city

beyond. Additionally, large new floor openings have been created which recall the double-height reading room spaces found in Price Gilbert, establishing a spatial continuity between buildings which never existed before. In short, the building has been converted from a space intended for books to spaces intended for people. Additionally, the existing bridge connecting the tower to the Price Gilbert building has been removed and replaced with a thinner, more transparent bridge that reduces the visual congestion that characterized the existing connector.

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