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Court's Adjourned, School's in Session

By Warren Gran | February 1st, 2008

After Brooklyn Family Court adjourned for the final time, the New York City School Construction Authority (SCA) acquired the circa-1951 building and initiated conversion of the 140,000-sq.-ft. courthouse into two new learning academies for the Board of Education. The original courthouse earned high scores for its location in the heart of Brooklyn's Civic Center and a symmetrical floor plan around a central core, facilitating its division into two high schools. However, it lost points because of its 12-ft. floor-to-floor height, the absence of a space that could easily be converted into an auditorium or gymnasium, and deed restrictions that limited the overall height of the building.

These and other challenges were overcome, and construction is now under way on the \$56M project that will be open for the start of the 2008-09 school year as the Urban Assembly School for Law and Justice and the Urban Assembly of Math and Science for Young Women.

Is Conversion Feasible?

Adaptive reuse of municipal, institutional, and commercial buildings as schools is a growing trend in urban areas across the country where additional classrooms are desperately needed and there is often little or no land available for new construction. One might assume that the typical municipal or commercial building of the 1950s-era, with its basic, straightforward design and simple, symmetrical layout would be more easily converted to school use than a 1960-70s office building or a late 19th-century factory or warehouse.

Actually, the architecture of office buildings from the '60s and '70s typically reflected the dreary "9 to 5" workaday world, but reasonable column spans and high ceilings offer some flexibility for adaptive reuse. Old warehouses and factories offer high ceilings, thick exterior walls, high floor loads, and reasonable column spans, plus architectural character.

Because the typical '50s building is very tightly designed and specifically programmed, it often presents the most challenging puzzle for planners, designers, and administrators tasked with adapting them for an educational program. This is particularly true in school districts that have embraced the small-schools movement, where existing large-volume buildings are being carved into two or more small learning academies dedicated to specialty curricula such as science, technology, justice, or performing arts.

A detailed pre-design feasibility study is essential to the ultimate success of such a project. All too often, owners considering rehab/reuse are put off by the amount of work, time, and fees associated with the feasibility study. However, the information gathered during this planning phase provides the basis for sound design decisions that contribute to completion of the project on time and within the budget.

School construction officials who are experienced in renovation projects understand that a feasibility study is a worthwhile investment — they would rather pay now than pay later in the form of costly, time-consuming change orders. In this case, the SCA contracted with Gran Kriegel, the project architects, to determine whether it was feasible to convert the half-century-old courthouse to meet the educational program. The study concluded that the project was feasible, but not without its challenges.

Building Symmetry

Located in Brooklyn's Civic Center, a government and transportation hub, the Brooklyn Family Court building was clad in gray limestone like its neighbors. Typical of an urban school site, there was no open space on site for outdoor recreation, although there is a nearby public park. The building was a prime example of post-World War II institutional design approach, which pushed the limits of "less is more."

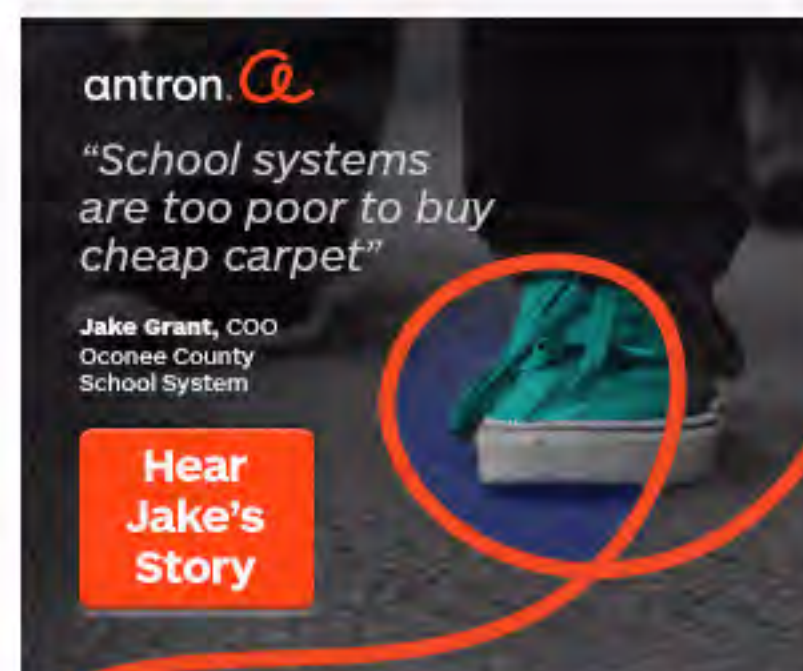
The architecture was clearly driven by cost and function, with minimal amenities and little sense of style. When one imagines a courthouse, one expects to find expansive, light-filled public spaces; yet, due in part to the building's 12-ft. floor height, it had no public spaces that were responsive to a user's emotional or aesthetic sensibilities.


The building's one saving grace was its symmetrical plan, with a central core of elevators, fire stairs, and toilet rooms flanked by two relatively equal building volumes. This is a typical organizing device for older institutional buildings, including those dating back to the early 20th and late 19th centuries, because it was a straightforward, economical design. The organization facilitated a typical classroom floor plan, allowing for separation into two high schools.


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One half of the existing cellar comprised mechanical and electrical service and a boiler room, while the other half was used for storage. The service entrance was located in the rear of the building at cellar level, facilitated by a site that slopes down from front to rear.

Design began with a program identifying two 500-seat high schools, one of which had been identified as the Urban Assembly School for Law and Justice, while the other had yet to be determined. As in the board of education's other multiple-school facilities, these two high schools were to share an assembly space, gymnasium, and dining/kitchen facilities. Architects began to develop a space plan locating all shared functions on the ground floor and dividing the building into two schools above. This involved a complete gutting of interiors, including all systems and windows.

While the initial design phase was underway, the architects undertook a simultaneous investigation of existing conditions. Although the elevators were not ADA-compliant, the shafts were adequate to accommodate larger cars. The building's limestone cladding required detailed study, as it appeared to be in poor condition. This was confirmed by removal and inspection of one panel near the roof that revealed that the hardware securing the panel to the building's framework was badly deteriorated. However, given the weight of the four- by six-ft. limestone panels, it would have been quite expensive to remove them all for examination. Instead, nondestructive visual inspection, impulse radar, thermography, and acoustic sounding were used to evaluate their condition.

Shared Space

New construction projects can be designed to meet the board of education's requirement for separation of shared facilities (gymnasium, auditorium, and cafeteria) from teaching spaces. For example, Gran Kriegel had recently completed a new school, P.S./I.S. 395, comprising two 500-seat schools with shared spaces on the ground floor that can be used by the community after school hours without entering the classroom corridors.

Achieving that goal is more difficult in a renovation project. One of the three design schemes proposed involved breaking through to the storage side of the cellar to create a two-story multipurpose room that would be entered from the ground floor. The penthouse level that had served as the judges' chambers was to be demolished and replaced with specialized classrooms, such as science labs and art rooms.

Due to the estimated cost of the extensive structural changes associated with this design scheme, the SCA selected an alternative that places the multipurpose room on the penthouse level. By use of a movable partition, this space can function as a competition gym, flexible performance space, or simultaneously accommodate two activities.

Clerestory windows and the glazing beneath the curved trusses bathe the space in daylight, creating a special space within this otherwise low-ceilinged building. The steel framed, long-span joist structure is separated from the existing roof by an interstitial space, which allows for efficient MEP distribution and optimum noise isolation. Clad in stainless steel, the addition contributes a special exterior identity to this otherwise severe former courthouse.

Light-filled Classrooms

It was always a given that the interior partitions and systems would be gutted and replaced. Architects developed a donut-like floor plan on classroom floors in each half of the building, placing classrooms on the exterior walls of the double-loaded corridors and auxiliary spaces (storage, AV, small seminar rooms, air shafts, electrical closets, janitor closets, etc.) in the donut "hole," to bring daylight into all classrooms. Art rooms were placed near the top floor to enhance natural lighting and ventilation, while special education classrooms were placed on a lower floor to facilitate access. Once the second school was identified as the Urban Assembly of Math and Science for Young Women, architects clustered additional science labs on an upper floor to provide for a cost-effective system to exhaust fume-hood gases.

In the case of the Urban Assembly School for Law and Justice, the design included a wood-paneled mock courtroom, complete with judge's podium, witness chair, and jury box. Although general classrooms have an overall floor-to-ceiling height of nine ft., architects were able to increase the height of the courtroom space to 10 feet to overall through careful routing of mechanicals, giving that space more drama.

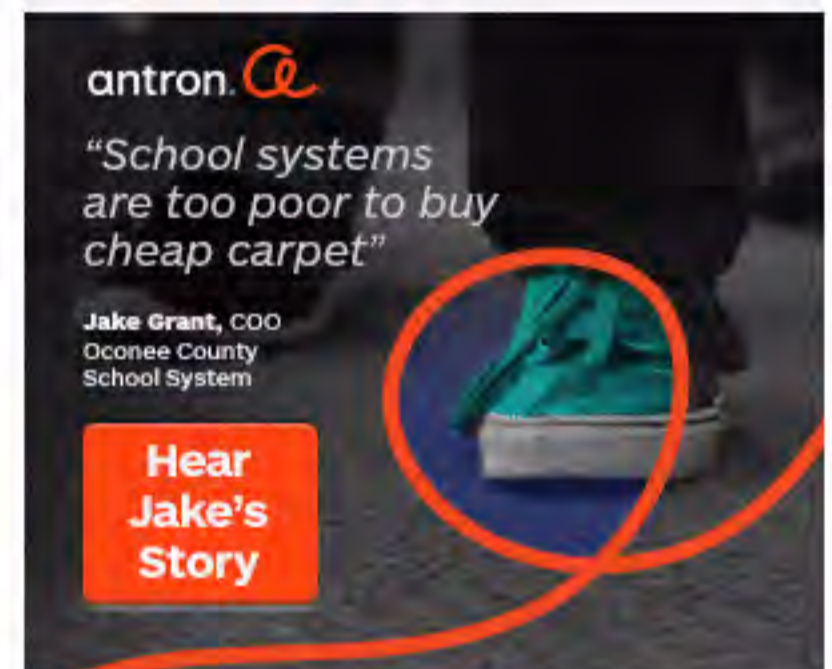



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Elevator shafts have been combined to accommodate larger, ADA-compliant cars, and programmed to separate access to the classroom floors of each school. The deteriorated limestone exterior will be over-clad with an innovative thin-stone façade system and windows replaced throughout the building. Egress from the multipurpose room has been augmented with an additional fire stair.

Old and New

The courthouse's original red granite-framed entrance was retained, creating a two-story interior public space to give the building a stronger presence and more gracious entry experience. Column covers and other metal trim at the center of the building are aligned with the rooftop multipurpose room and colored to match the existing red granite base, reinforcing the relationship between old and new. New window frames are a complimentary shade of blue, adding a lively event to the 1950s-era rigidity of the building mass.

Each adaptive reuse project poses unique challenges and usually presents more than a few surprises. The conversion of the Brooklyn Family Court building to a new dual high school for the New York City School Construction Authority was no exception.

Testing the Fit


The primary requirement for an adaptive reuse is that there is the right "fit" among the existing conditions, new program, and budget. Determining the fit includes answering the obvious planning questions through the schematic design process, as well as the appropriate analyses of building systems, environmental issues, and zoning and building codes. Yet performing these analyses reveals only so much, just as kicking the tires of a used car is only a preliminary to finding out if it actually runs — the prudent would-be owner still takes the car to a good mechanic for a thorough examination. Similarly, determining the feasibility of an adaptive reuse requires a thorough investigation and documentation of the existing conditions in order to test the relationships among the factors mentioned above. To reduce the unknowns, owners are well-advised to complete most of the demolition under a separate contract early in the design process, even though final demolition documents will still be required as part of bidding the general construction package. This process is costly, but in the end it will provide more accurate cost estimates, lower bids, and fewer change orders. Even so, experienced school construction authorities always expect some surprises during construction and include a contingency percentage that is higher than that for a new construction project.

That said, if the owner and design team begin with a comprehensive feasibility study, maintain realistic expectations, expect the unexpected, and look beyond the building's existing constraints, it is possible to develop a design that works for a new era and dramatically different program.

Warren W. Gran, FAIA, is the founding partner of Gran Kriegel Associates architects and planners in New York City. He has worked on varied public works projects for more than 35 years.

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