

MODERNIZING WASHINGTON DC SCHOOLS AND ITS MEASURABLE EFFECT ON LEARNING

BY MICHAEL QUADRINO AND NIKKIA MARTIN

Over the last 20 years, the urban fabric of Washington DC has undergone nothing short of a renaissance. Like many American cities, various neighborhoods of Washington DC suffered a period of urban decay in the 1970s and 80s, leaving blocks of homes and industrial buildings abandoned and shuttered. Today many of those buildings have been replaced by, or even renovated into, trendy restaurants and apartments – playing host to an influx of new residents with a more diverse range of socioeconomic backgrounds and a desire for 21st century urban American life. The District is realizing its potential as a city that is both viable and interesting on all levels. There is a consistent sense of amazement from visitors and daily residents alike when observing how swiftly the city is being transformed into a collection of contemporary neighborhoods, each with unique characteristics in the people they serve and how they serve them. Behind all of this, the city has realized consistent gains in its tax base, generating increased amounts of revenue to keep the development of both neighborhood buildings and social programs for residents moving forward.¹ Naturally, the public school system has been a centerpiece of the changing times and the desire for improvement. The new residents want to plant roots in the city and have a high quality education available for their children without the price tag of private education. And longtime residents want to see improvements in an educational system that has had struggles in the past.

The District of Columbia Public Schools (DCPS) system garnered national attention in 2007 when then newly-elected Mayor Adrian Fenty took control of the school board and appointed Michelle Rhee as chancellor to implement sweeping changes across the District. In a move that gained a bit less national attention, Mayor Fenty also created the Office of Public Education Facilities Modernization (OPEFM), led by current City Administrator Allen Lew, to function as an independent agency handling capital improvements across the entire schools facility portfolio. The agency demanded an absolute commitment from its employees and contractors to the urgency and purpose of the work involved, knowing change could not occur through anything less. The majority of schools were in a state of disrepair- waiting weeks, if not years, for basic repairs to occur. The agency was given considerable resources and an aggressive timetable: implement \$3.5 billion of capital improvements over the next 15 years to create school buildings that would become landmarks in all neighborhoods across the city.

In 2011, Vincent Gray became the District's mayor with a renewed vision of public education as a means to unite the city. He appointed Kaya Henderson as school chancellor and consolidated OPEFM and other facility-managing agencies into the Department of General Services (DGS), led by Director Brian Hanlon. The idea was for DGS to include schools in a broader plan and elevate DC's quality of life through state-of-the-art municipal facilities and a focus on

environmental sustainability. DGS has worked aggressively to fulfill that vision ever since. The modernization program currently implements nearly \$300 million in design and construction annually. In a district of 4,000 teachers, 111 principals, and 47,000 students, that is approximately \$6,300 per student each year. By comparison, New York and Los Angeles spend \$2,000-\$2,500 annually by the same measure.^{2,3,4} The investment is considered monumental, and so are the expectations.

THE MODERNIZATION PROGRAM

The rapid changes taking place inside DCPS classrooms have been described as a national focus in improving urban schools⁵. The same can be said about the investment and aggressive approach to facility modernization. To make enhancements as quickly as possible, the District and the DC Partners for the Revitalization of Education Projects (DCPEP – a joint venture of program managers Brailsford & Dunlavey and McKissack & McKissack) developed three different modernization approaches.

The Full Modernization approach, applied to larger schools like high schools, takes the traditional renovation (or in some cases, demolish and rebuild anew) approach, requiring 18-24 months of construction. This requires strategic placement of students around the construction or nearby “swing spaces” to minimize disruption to learning while

Reading Top Ten Gainers (% point change)		Math Top Ten Gainers (% Point Change)	
Maury ES	28.8	Nalle ES	27.2
Malcolm X ES	20.2	J.O. Wilson ES	24.6
Macfarland MS	19.7	Seaton ES	21.9
Ross ES	18.4	Leckie ES	21.4
Nalle ES	16.2	Macfarland MS	20.2
LaSalle-Backus EC	14.7	Maury ES	19.2
ML King ES	14.0	Ellington School of the Arts	17.1
Kelly Miller ES	13.4	Bruce-Monroe ES @ Park View	15.9
CW Harris ES	13.1	Browne EC	15.7
Bruce Monroe ES @ Park View	12.6	Kelly Miller	14.4

(Schools listed in bold type indicate those receiving modernization work since 2008.)

constructing new learning environments, including gymnasias and performing arts space, as quickly as possible for older students who use them most. **The Phased Modernization** approach is arguably the cornerstone of the program as it is applied to the large volume of elementary and middle schools. These schools receive modernizations during three separate summer breaks over the course of the program. The first phase addresses the aesthetics, acoustics, lighting and thermal comfort of traditional classrooms, corridors and bathrooms, while the second phase addresses support spaces like cafeteria and gymnasias. The third phase addresses remaining mechanical and electrical systems and exterior improvements. This approach improves classroom spaces -the most important spaces for learning - for all the city’s children in the fastest manner possible. The program is nearing its midway point with the phase one modernizations, which often require over \$1 million of construction per week in each school over the eight-week summer break in order to make the needed improvements. Lastly, **Stabilization Modernizations** provide basic improvements such as handicap accessible ramps and heating and cooling upgrades that bring schools awaiting modernization into code compliance until their scheduled renovation.

The DC program also uses an innovative modified design-build delivery method to procure architectural and construction services. The city hires an architect for each project to develop concept plans for district approval and then advances to schematic design. At this time, a construction firm is selected on a best-value evaluation based on experience, project approach and understanding, general conditions and fee costs. The construction firm becomes the design-builder of record and assumes the district’s prior contract with the architect to complete the design under its guidance. This approach helps the owner control costs by shifting the

associated design risks to the design-build team and allows the design process to move swiftly to meet the program’s demanding schedule. Both the phased modernization approach and the modified design-build delivery method are unique aspects of the DC program created from the need to improve the school facilities as efficiently as possible.

WHAT’S IN A MODERNIZATION

From the very beginning, the modernization program aimed to completely overhaul every school building in the city, many of which had been built in the 1920s, 1950s, or 1970s and had not received upgrades or basic repairs in years. Traditional two-pipe mechanical systems are being replaced by more sophisticated four-pipe systems or variant refrigerant flow systems to increase user flexibility and thermal comfort. Hallways once lined with plaster walls and ceilings now contain acoustical treatments to reduce noise levels. All classrooms have interactive white boards and enhanced listening systems to accompany student computers and tablets, fulfilling DCPS’s commitment to use the latest technologies available. Outside the classroom, auditoriums are outfitted with acoustical treatments and sound systems to support college-level performances. Some high schools are outfitted with swimming pools and secondary practice gyms to accommodate more students in athletic programs. At many schools, the entryways and lobbies built nearly 100 years ago are being preserved to comply with historical preservation guidelines and pay homage to DC’s roots, as called for in the City Beautiful movement of the early 1900s.

The enhancements go beyond improving the educational experience and work to address the needs of the whole student. They also support the surrounding community with features like parent resource rooms and health and dental

suites that provide resources and quality care to community members. The modernizations also prioritize sustainability. Geothermal well fields, green roofs, rainwater harvesting cisterns and LED light fixtures are all being employed to reduce energy costs over the buildings' lifecycles. Heating and cooling systems use advanced controls programs to scale back energy use during unoccupied times. In the fast-developing Brookland neighborhood, Brookland Middle School, currently under construction, will feature an exterior terrace overlooking an adjacent park that provides an outdoor classroom and place of respite for students during break periods. In the Truxton Circle neighborhood just north of the US Capitol building, the new Dunbar High School was the first modernization to incorporate a power purchase agreement where a third-party vendor provided solar-panels at no initial cost to supplement the building's power supply. The improvements being made through DC Public Schools are not only widespread, they are keeping up with – and sometimes setting – the design trends of the day.

THE RESULTS

When results of the 2012-2013 statewide tests showed students earned their highest test scores ever, and largest yearly increase since 2008, DC Public Schools made headlines. More positive news came in December 2013 when the results of a national study showed DCPS students made more progress than any other major urban school system.⁵ With overall proficiency rates now around 50%, most agree there is room for improvement. But the growth is notable and an 18% increase in test scores since 2007 is a very encouraging sign of progress in the right direction.⁶ The achievement gap in proficiency between white and African-American students has slightly narrowed⁷ and the number of African-American DCPS students taking AP exams increased by 45% from 2010 to 2013.⁸ School officials and parents alike are excited about the progress and are working hard to continue the success.

Like any school district going through changes, it's hard to say how much of the progress can be attributed to the physical enhancement of the schools themselves. DCPS has led the country in the creation of its teacher evaluation system and the implementation of the rigorous Common Core State Standards. A recent report by researchers from the University of Virginia and Stanford University found that teacher performance in DCPS improved because of the school system's teacher evaluation system (IMPACT). The study also found DCPS is replacing low-performing teachers with even stronger teachers, and the school system is retaining its best teachers at very high rates. DCPS also overhauled its curriculum three years ago, using a new one that raises the bar for students, and has improved its efforts to support teachers with robust professional development opportunities, as well as subject-specific coaching, training, and collaborative planning.

That said, there are indicators that the modernization program is having a positive effect. When looking at the Top Ten Gainers in Math and Reading scores in 2013, six out of the ten in each category were schools that received significant modernization work in recent years.⁷

Considering that the program has modernized roughly four out of ten facilities to date, this can be considered an indicator that modernized facilities are making slightly greater strides since they represent a greater portion of the top gainers. In a more striking example, the ten elementary schools (grades PK-5) and education campuses (grades PK-8) that received significant phase one modernizations the summer before the 2012-2013 school year increased test scores by an average of 10% - a figure notably higher than the already impressive 3.7% increase realized citywide. Both of these examples indicate strong gains in the younger grades, where one might assume changes in the learning environment can have their greatest effect. But considering the various changes to both the buildings and the school system – and other factors such as city demographics, sharing the city enrollment with local charter schools, and consolidation of student populations via school closures – only time will tell just how much impact is being made.

CONCLUSION

While the city of Washington DC continues its journey of revitalization, DCPS is in the midst of executing its 2012-2017 strategic plan known as a Capital Commitment. The five tenets of the plan focus on matters such as improving test scores and graduation rates, but also place a strong focus on students enjoying their school environments. The modernization program was initiated for that very reason, believing that contemporary, elegant buildings can inspire students with a sense of care and purpose to do better for themselves. These are ambitious goals, but the offices of the Mayor, DC Public Schools, and the Department of General Services are working passionately towards them. While there may not be substantial data to clearly indicate that students are doing better because of their new environs, the intangibles suggest a difference is being made. Hundreds of residents attend summertime ribbon cutting ceremonies to celebrate the opening of their new neighborhood facilities. Parents and students are increasingly involved in the modernization process via volunteer School Improvement Teams (SITs) and wider community outreach meetings. Teachers and staff express delight in their new facilities with a renewed sense of importance in their efforts to provide a great education for all students across the city.

So while time will tell just how much the investment in facilities will positively affect the DC public schools educational experience, one thing is for sure: the people of the District of Columbia – be it the residents or the policymakers – are certainly counting on it.

About Nikkia Martin

Nikkia Martin currently serves as assistant project manager, Brailsford & Dunlavey in Washington, DC. She graduated from North Carolina Agricultural and Technical State University with a degree in construction management. Her extensive studies included project management, construction codes, estimating, statics and strength of materials, and scheduling and planning. During her senior year, she served as a “student shadow” for the renovation and addition to the University of North Carolina at Greensboro’s Gove Student Health Center. Her responsibilities included regular site walk-throughs and active participation in weekly meetings with contractors, project managers, and university officials.

About Michael Quadrino, LEED AP

Michael Quadrino joined Brailsford & Dunlavey after working for eight years in general contracting, where he developed a deep understanding of construction project risk assessment and the importance of design and planning’s effect on the construction process. Prior to joining B&D, he quickly ascended up the ranks to the project manager position at Whiting-Turner Contracting and multi-family residential developer JPI, where he worked on a wide range of project types including university housing, university athletics, multi-family residential, class A office space, senior living and wellness, and public institutions such as libraries and senior centers. His varied projects totaled nearly \$150 million in construction costs. In addition, Mr. Quadrino serves as president on the Board of his co-operative housing association, where he helps advise on the buildings’ \$5 million annual operating budget and reserve funding.