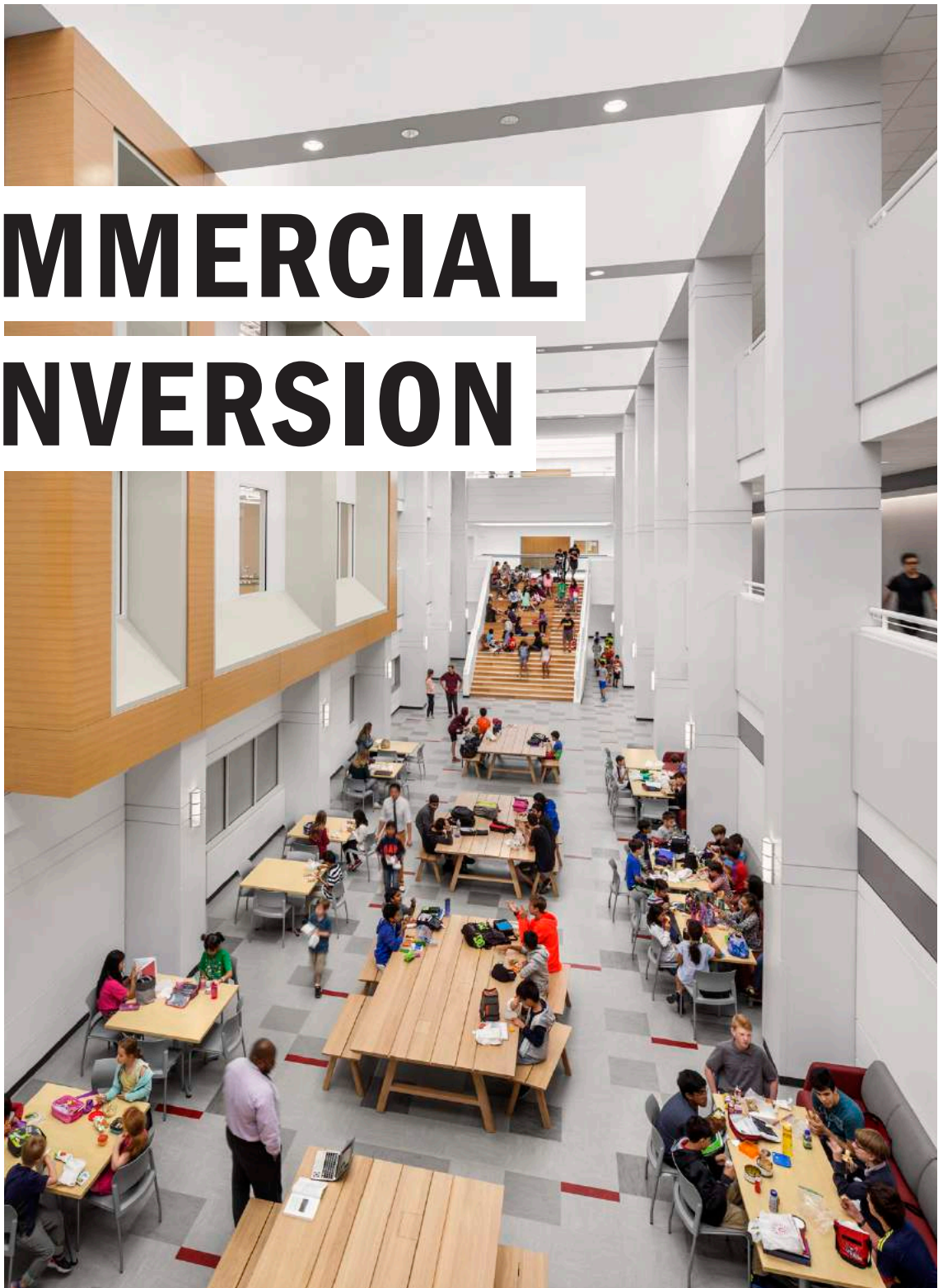


# COMMERCIAL CONVERSION



**ADAPTIVE REUSE**  
A CATALYST FOR  
EDUCATIONAL  
INNOVATION

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**PERKINS —  
EASTMAN**  
*Human by Design*



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“The best adaptations of commercial space to schools will not only accommodate the program, but will provide a **COMPLETE STUDENT EXPERIENCE** – from a feeling of safety to a feeling of belonging.”







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## EXECUTIVE SUMMARY

As communities and economic conditions shift over time, commercial, industrial, and even retail properties can lose their market appeal or slip into disuse altogether. The resulting vacancies present a challenge to the vitality of a community, but also present an opportunity. School districts and education providers with limited resources, appetites for innovation, or mandates for sustainable development practices can find substantial value in converting commercial properties to schools. It's a viable strategy to achieve state-of-the-art facilities that are cost-effective, responsive to changing pedagogies, environmentally responsible, and which also reflect the shifting lifestyle preferences of young families.

Adaptive reuse of commercial buildings is not new, but is becoming more established as a strategy for accommodating a variety of educational program space. Among other advantages, the conversion of under-performing office or retail properties takes advantage of the embodied investments in utilities and transportation infrastructure already in place to serve those facilities. In expanding communities, this often allows schools to come online more quickly with lower capital expenditure.

Increasing public acceptance of this strategy reflects a growing recognition of the success of unconventional pedagogies, the wide availability and mobility of information, and a corresponding comfort with educational innovation.

The social and cultural trends that are refocusing education and softening the ground for innovation are also challenging the accepted norms and preconceptions of the ideal school environment. New paradigms are emerging to increase the range of educational options and to adapt educational space typologies to new program priorities.

The greatest benefit of adapting underperforming commercial property lies in careful market analysis to find value where others do not. Even so, the success of this approach in a specific circumstance depends on diligent evaluation of the property across a number of factors: security, safety, on-site amenities, programmatic flexibility, structural adaptability, occupant wellness, and social wellness, in addition to practical concerns of location, site configuration, building conditions, and intended use.

By seeking to overcome the inherent constraints of adaptation, converted commercial properties can offer an effective path to explore new typologies and transform outdated educational specifications. School systems willing to adapt their programming to fit a new kind of environment may discover by doing so that their programming is better for the adaptation. Our Case Studies demonstrate that commercial reuse is not a compromised solution, but rather a beneficial, and potentially transformational, development scenario.

## I. THE CHALLENGE

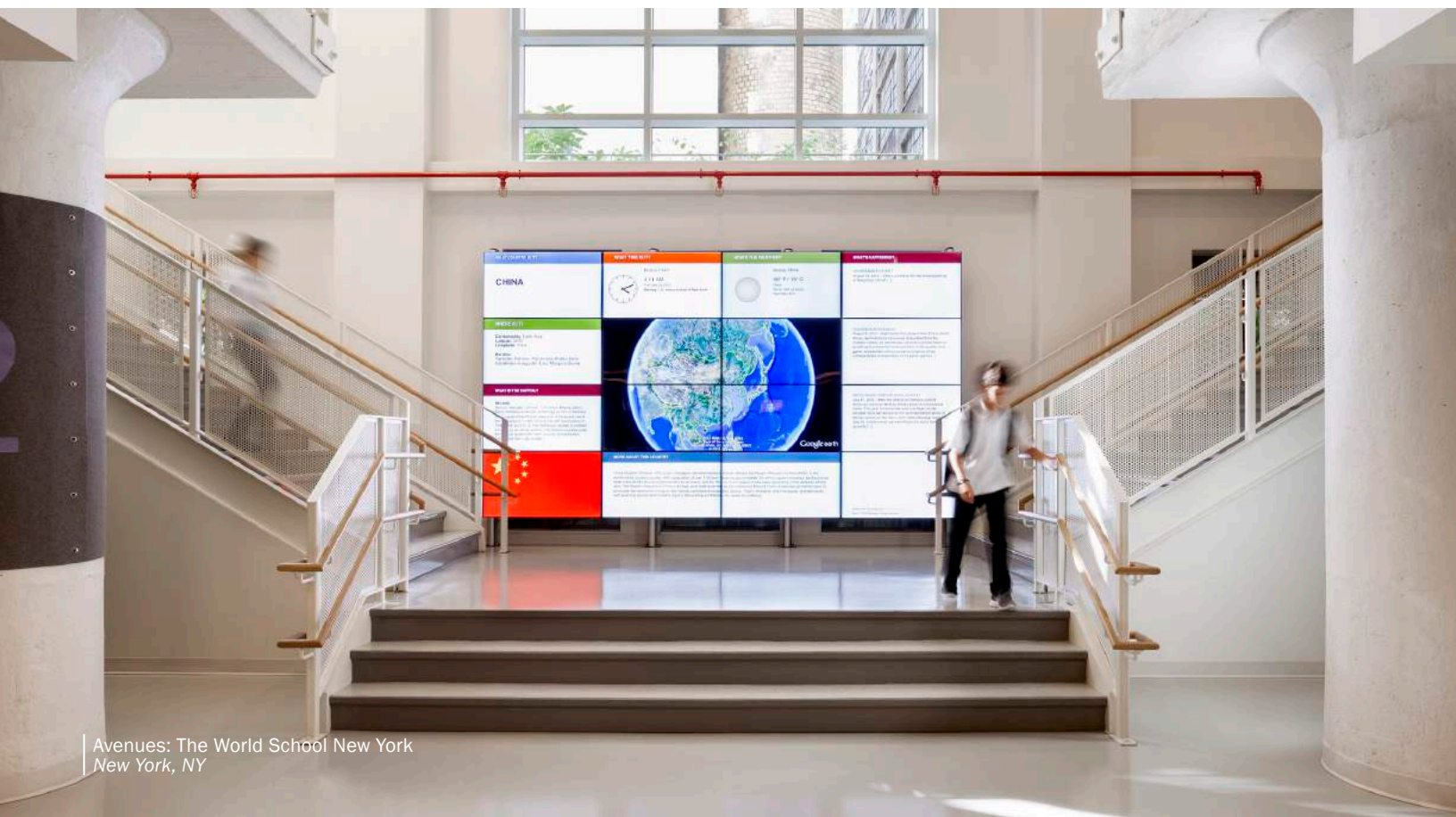
In Fairfax County, Virginia, there is 20 million square feet of vacant commercial real estate and there is another eight million square feet in neighboring Arlington County. Add to that the rest of suburban Virginia and Maryland, as well as the city itself, and there is over 70 million square feet of empty office space in the Washington, DC, region[1]. Across the country, a similar story is playing out, even in relatively higher growth cities like Dallas (where about 30 million square feet sits empty) and Phoenix (17 million square feet)[2]. A certain amount of vacancy is to be expected, but at rates that exceed 15%, and in some regions 20%, languishing commercial properties represent a significant available and chronically underutilized resource – one that includes unrecoverable embodied energy and sunk public investment in transportation and utility infrastructure.

There is some correlation between vacancy rates and the overall economic health of a region, but in many of these locales, vacancy is driven by changing market dynamics and the availability of newer, more attractive options.[3] Paradoxically, education providers in these same areas face a contrasting set of problems: surging

school-aged populations, aging and obsolete facilities, mounting barriers to new land acquisition, and the need for responsive, nimble strategies to accommodate increasingly diverse educational programs and mandates. As the demand for up-to-date education facilities increases, their on-hand supply of real estate assets is waning.

Perhaps these two issues are complementary rather than compounding.

Can adaptive reuse and conversion of commercial properties for educational use provide a solution that educators need and ignite a broader remedy for the rapid obsolescence and creeping blight of the separated-use commercial landscape? The answer is complex, and it's important to understand both the dynamics of obsolescence – why buildings are empty – and the relative suitability of revitalizing and repurposing these buildings for school communities. Like most things in real estate, location is at least part of both considerations. Supply and demand play a part as well, as do the condition, features, and size of a property – the real costs and the perception of value.





## II. WHY NOW?

### The Conditions Supporting Adaptive Reuse

It's not uncommon to find non-commercial uses in office and retail properties. Start-up churches, public libraries, and child care centers are among the institutional tenants often found in commercial properties. More recently, public charter schools, independent schools, special needs programs, institutions of higher education, and even neighborhood schools have begun to find homes in commercial buildings, as well. [4,5] Although this may be unremarkable to some, particularly in urban environments where adaptive reuse is historically commonplace, it is a significant departure from the norm in lower density and suburban communities. That norm, however, is primed for change. Social and cultural trends are refocusing education, encouraging innovation, and challenging the preconceptions and accepted models of an ideal school environment.

Increasing public acceptance of adaptive reuse strategies for educational uses may reflect a growing demand for differentiated instruction, a recognition of the success of unconventional pedagogies, and a corresponding *comfort with educational innovation*. As scrutiny of educational outcomes has intensified over the last generation, educators have implemented alternatives to the traditional teacher-focused pedagogies and adopted a range of student-centered approaches. Self-directed inquiry, authentic interdisciplinary projects, peer-to-peer interaction, and effective asynchronous content delivery have proven successful at a broad scale and have challenged the traditional classroom model. Although parents' expectations are typically rising, so, too, is their tolerance for unconventional methods and settings. As a result, there is greater diversity in the scholastic environment and an expanding realm of possibilities.

In less than a generation, the Internet has fundamentally altered our relationship with information and our expectations of what classroom education provides. In fact, *the mobility of information* has challenged the fundamental premise of the school building itself – that it is the place where exclusive knowledge resources reside.[6]



### TERMINOLOGY AND DEFINITIONS

For the purposes of this paper the terms **“adaptive reuse”** and **“commercial conversion”** are used somewhat interchangeably. While “adaptive reuse” may refer to any change in use from a property’s original purpose, and is often related to historic preservation, this paper is focused primarily on buildings that were developed specifically for commercial use.

Most of the data referenced in this report is specific to office properties, but our use of the term **“commercial”** is meant to include any property that supports commercial activity: office, corporate, retail, mercantile, industrial, or warehouse – whether built speculatively or for a specific tenant. While each of these building types presents unique challenges, for our purposes the distinctions are less relevant than the similarities.

Throughout this paper the terms **urban** and **suburban** are used as they are conventionally understood. We have also used the term **sub-urban** to indicate any environment that is not a densely populated municipality, and to recognize the unique character of rural, semi-rural, and small-town communities as distinct from suburbia.

## LEVERAGING TECHNOLOGY

In the latter portion of the 20th century, pedagogy has increasingly recognized how technology can support a personalized approach to education. Student assessments provide a data-rich environment to gauge not only grade-level mastery but also strengths and weaknesses within a unit, lesson, or learning standard. Technology is increasingly being leveraged to identify learning needs and customize strategies to address those needs calibrated to specific students to a degree that previous generations haven't experienced in the classroom.

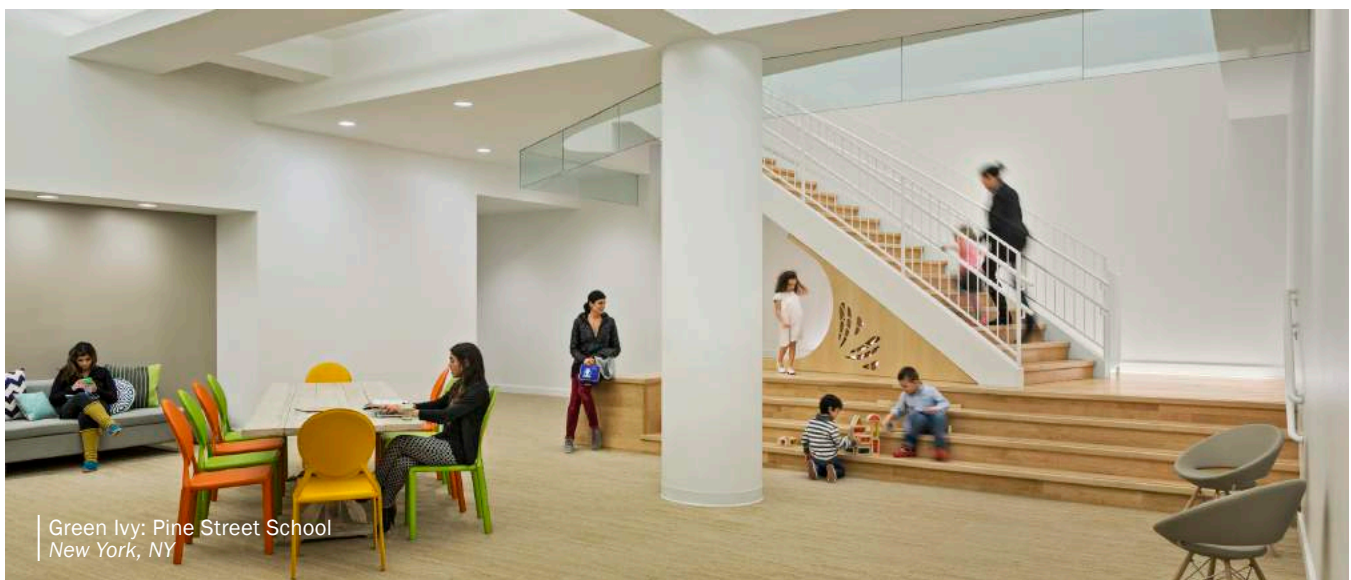
Recognizing that a 21st-century teacher often acts as a facilitator of how we use information, interest is increasing at the secondary school-level in the "flipped classroom," which takes the lecture-style delivery of information and converts that to a video that students access as homework. This frees up the scheduled classroom time to provide opportunities for a hands-on synthesis and application of that content. Teachers can also tap into remote resources to expand their options on how to deliver course content. Language classes can Skype with native speakers or schools in other countries; "experts" can conference in for a discussion about their work and the range of material covered isn't limited to what any one instructor can teach effectively. "Blended learning" refers to content delivery models that rely on a combination of face-to-face instruction as well as content accessed via technology.

Source: Foundation for Blended and Online Learning

Historically, schools at all levels have been viewed as indispensable centers of enlightenment and training – essential resources for our communities and critical elements of our social fabric. Now, we carry in our pockets more information than any community of teachers could know. The aggregation of sufficient knowledge resources under one roof is barely credible any longer. As a result, the role of the school building can be expected to shift from supporting knowledge transfer to supporting skill development. Whether those skills be social, cognitive, cultural, or economic, the aim is to prepare the whole person for a rich human experience.

“ The role of the school building can be expected to shift from **SUPPORTING KNOWLEDGE TRANSFER** to **SUPPORTING SKILL DEVELOPMENT.** ”

Social and demographic changes have occurred only slightly less quickly. Among the trends that have direct impact on school-aged populations, notable are the increasing incidence of two-earner households and single-parent households.[7] The conventional 20th-century family, with one spouse at home, reinforced a somewhat arbitrary planning distinction between the domestic landscape and the commercial landscape. Schools, which tended to be associated with home life, were viewed as part of the maternal domestic landscape. As the role of women in the workplace has grown, the distinctions between the *domestic landscape* and the *commercial*



Green Ivy: Pine Street School  
New York, NY



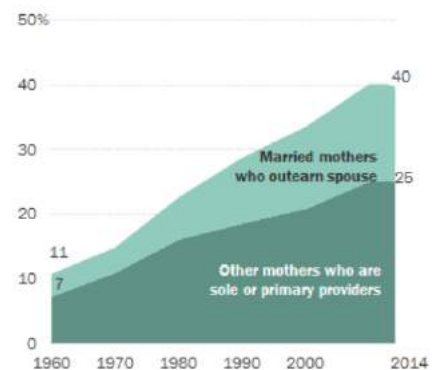


landscape have been blurred. The coincident increase in single-parent households further challenges the assumed practical convenience of the conventional school-home relationship.

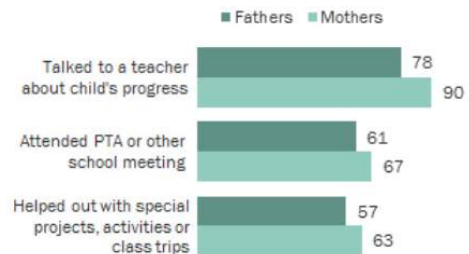
Regardless of family structure, the increasing number of school-aged children without a stay-at-home parent does not reflect a lack of parental interest or involvement in their education. A large majority of parents continue to attend school functions, support class activities, and engage with teachers. At the same time, more than a third of parents feel their daily work and commute leave them too little time to spend with their kids[8]. Arguably, the physical and geographical relationship between a school and its residential neighborhood is no longer obvious, necessary, or advantageous for parents. On the contrary, schools near workplaces may be increasingly more convenient and have greater perceived value.

Mid-20th century zoning codes were designed for a manufacturing economy that has largely disappeared from the urban and suburban landscape. The emphasis on strict separation of uses was intended to avoid the unsuitable (and unhealthy) adjacencies that plagued early industrialization. The resulting development model concentrated like uses together, with schools permitted in residential zones; but in segregated manufacturing zones, and even nearby commercial or retail zones, schools were often not permitted as by-right uses. As manufacturing activities in cities and suburbs evolved to be less of a nuisance, and heavy industries moved out altogether, the opportunity to rezone these areas and allow new types and mixes of uses quickly became a necessity to stimulate revitalization. Often, properties adapted for reuse as multi-family residential have been a key component of these new mixed-use zones, creating the need for schools to follow.

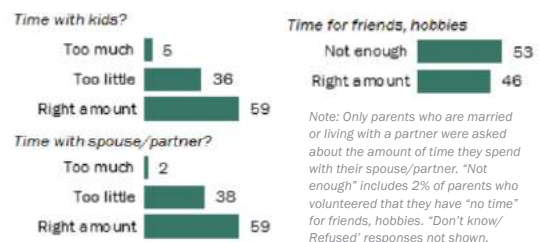
**In four of ten families, mom is the primary breadwinner**  
(% of families with children under 18 in the household)



**Most moms and dads say they have participated in school meetings and activities**  
(% saying they have done each of these things in the past 12 months)



**Many parents say they spend too little time with kids, partners, friends**  
(% saying...)



Source: Pew Research Center,  
"Parenting in America: The American Family Today"

The revitalization and repurposing of urban properties generally has been supported by a renewed popularity of urban living, particularly among a younger, well-educated workforce looking for greater integration of their careers and lifestyle. As they begin families, they are staying in the city, rather than returning to suburbia, increasing the demand for higher-quality educational options. This has not, however, reduced the burden on sub-urban school systems. Statistical evidence shows that suburbanization has continued at a strong pace[9]. It's the demographic mix of sub-urban growth that is changing, however. Gentrification of inner cities has displaced many lower-income families and immigrant communities to the periphery, often to transit-poor areas where rents have remained affordable and where there remains a demand for low-skilled labor. This demographic complexity challenges the expectations for sub-urban schools, and imposes new pressures on their resources.[10]

Broad social and cultural trends are not the only forces nudging educational facilities managers toward innovative facility procurement and program accommodation. Since 1994, U.S. investment in school facilities has averaged more than \$95 billion per year[11], as state and local governments try to keep pace, not only with growth in student population (projected to be around 3% annually), but with rapid

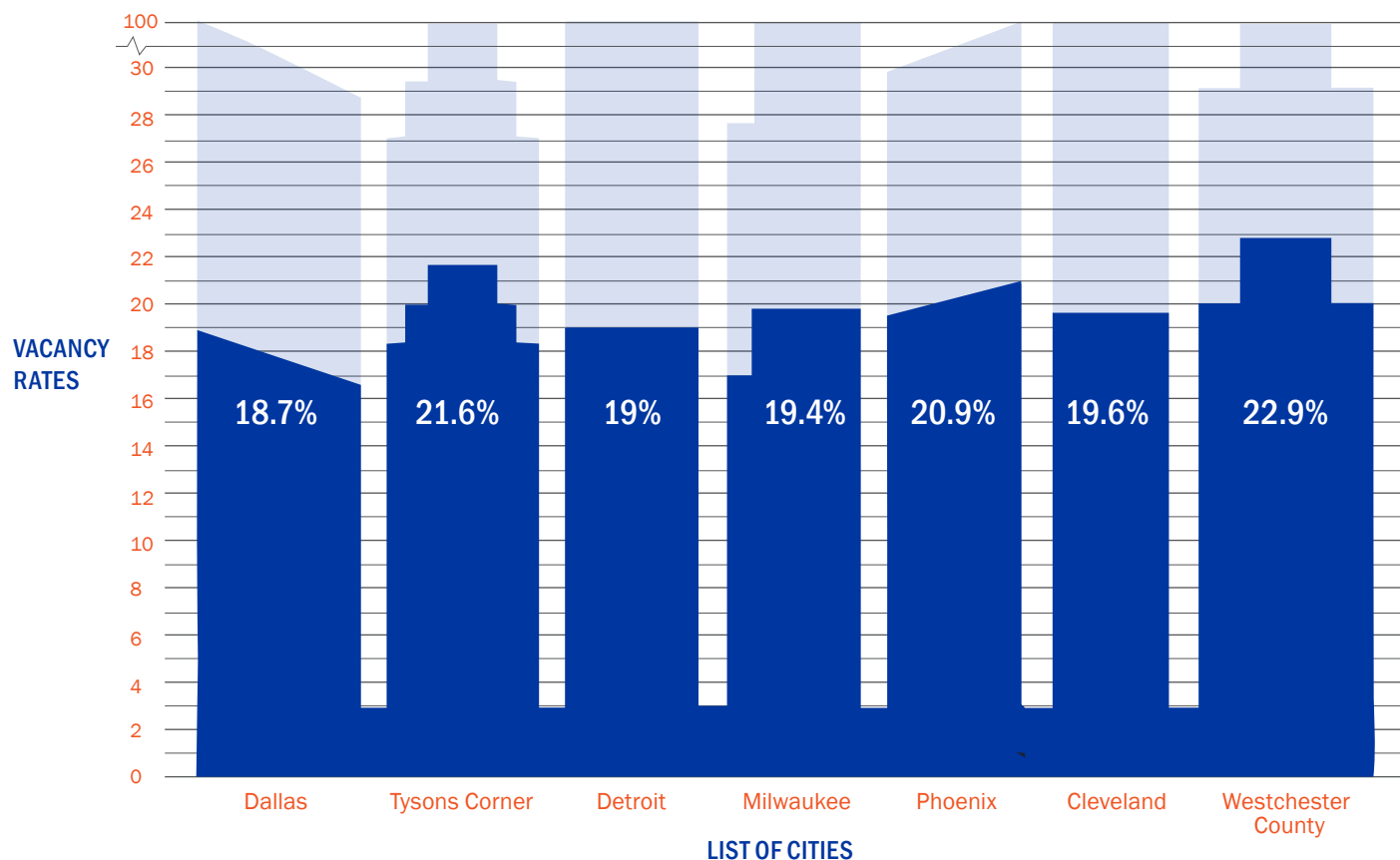
changes in educational technology, pedagogy, and achievement standards, while maintaining a safe, healthy environment. Nevertheless, more than half of public schools still require significant investment simply to be considered to be in "good" condition.[12]

To address capacity shortfalls, more than 31% of school sites include temporary buildings, which only exacerbates issues of programmatic obsolescence and environmental quality. Yet, at the local level, it is increasingly challenging for many school districts to acquire greenfield sites for new school construction. As sub-urban areas densify, parcels of a size adequate for a conventional school program, and convenient to residential neighborhoods, are either unavailable or unaffordable. The public investment required to develop greenfield sites is amplified by necessary improvements and extensions to utilities and transportation facilities.

Meanwhile, underperforming commercial properties, particularly in suburban office parks, transit-poor inner suburbs, and semi-rural areas, are increasing in number and threatening a wave of blight that evidence suggests is self-perpetuating.[13]

The question is: Can school systems and independent school operators take advantage of outdated real estate development models and neglected assets that are struggling to maintain their value?

#### LIST OF CITIES/REGIONS AND HIGHEST VACANCY RATES



Source: [www.us.jll.com/united-states/en-us/research/property/office](http://www.us.jll.com/united-states/en-us/research/property/office)  
10 US Cities w/ most Vacant Office Space, 11-20-2017





Green Ivy: Pine Street School  
New York, NY

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### III. WHY NOT?

#### The Barriers to Adaptive Reuse

In the abstract, adaptive reuse of commercial buildings is an obvious solution to multiple problems, both social and economic, and there should be little resistance to it. But in reality, there are significant obstacles, both practical and perceived, that need to be considered and overcome in order to employ this development strategy effectively for school communities. Practical concerns apply both

to the strategy in general and to individual properties specifically. These can be considered in several broad categories: facility conditions, program accommodation, personal safety and security, and amenities and conveniences. The correlation between the importance of these issues and the investment required to remediate them varies from case to case.



## ■ FACILITY CONDITIONS

Acquisition of an existing building, particularly one that has been vacant or for which construction documentation is sparse, carries the inherent risk that unforeseen or concealed conditions may require costly mitigation. Diligent inspection of the building's environmental systems (HVAC) and basic assemblies, including testing for hazardous materials and contaminants, is obviously imperative. Prevailing building codes, zoning and land-use regulations, and other legal restrictions that may be in force will also determine practical limitations on the use of a property.



## ■ PROGRAM ACCOMMODATION

Conventional schools have developed over time as purpose-built structures, with a very specific program and space typologies, and little flexibility. Adapting existing buildings to these specific requirements is not impossible, but compromise may be difficult, and in some cases intolerable. In addition to the need for large specialized program spaces (e.g. Gym, Cafeteria, Science Labs), clear interior sightlines, and high ceilings, the utility infrastructure to support these programs should also be verified. Sufficient outdoor space for age-appropriate play or athletic activities may also be necessary.



## ■ SAFETY & SECURITY

Fundamental to the mission of every school is to provide a secure and safe learning environment. Some properties may present security risks that cannot be easily managed, or undue safety concerns that are beyond the school's control. Supervision of approach, arrival, transitions, and internal circulation is critical. Management of visitors, on-site traffic, parking, and off-campus neighbors may be more complicated.



## ■ AMENITIES & CONVENIENCES

In addition to the basic functional program, essential qualities of the physical environment directly affect learning and wellness. Every learning space should have adequate access to daylight and views. Environmental systems (lighting, heating, ventilation, air conditioning) must support a healthy environment – stress-free acoustics, thermal comfort, and high air quality. Social wellness is no less important, and the property should accommodate student gathering and hang-out spaces of various scales, both indoor and outdoor, where essential socialization and peer-to-peer learning can flourish.



While practical concerns can be objectively quantified, evaluated, and addressed, *perceived resistance* is more subjective, conditional, and speculative, if no less real. While personal security and safety, for example, is a real concern in any setting, there is an unsubstantiated perception that the risk is greater in a commercial environment. The nearby presence of non-school uses and mixing of populations is not itself a risk, as evidenced by the abundance of schools, both public and private, currently operating in mixed-use urban neighborhoods.

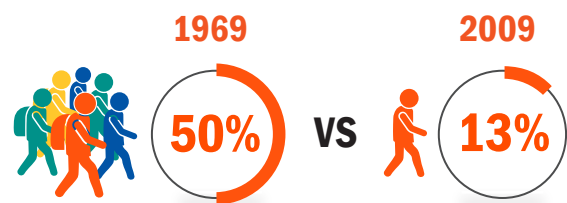
For more than a half century, we've become accustomed to a separation of uses imposed by zoning codes designed to avoid unsuitable adjacencies. Sub-urban communities have grown used to these norms and may have a hard time adapting to unexpected mixes of use. If there is a safety risk posed by drivers unaware of a school's presence in an office park, for example, it can quickly be overcome by appropriate safety personnel and traffic calming as people are gradually normed to the new condition.

Expectations have also developed around transportation services. Most school systems, and many independent schools, provide at least limited bus service for students. Transportation is among the larger operational expenses for school systems, so sites are selected and bus routes

are optimized to provide the most efficient network, and generous walkable radiuses are assumed around schools. These policies, however, are only effective if students walk to the schools in close proximity to where they live. Instead, about half of those who live between  $\frac{1}{4}$  and  $\frac{1}{2}$  mile from a school arrive by private vehicle, and only about 13% of students walk or ride a bike to school.[14]

There are some indications that this could be changing. Shifting priorities among recent generations of high school students account for growing trends toward reducing their driving time, postponing getting a driver's license, and increasingly favoring transportation alternatives, including public transit.[15] If schools in commercial areas are likely to be perceived as less walkable, then strategies for commercial conversion will need to account for efficient and safe transportation options that thoughtfully consider the quality of the pedestrian experience. Where public transit is a viable alternative, it's worth noting that the level of transit usage in a metro area is more closely related to where people work than where they live.[16] A school located convenient to public transit may be more likely to encourage students to leave the car at home.

Within **one generation**, the % of children walking or bicycling to school has dropped from approximately **50% in 1969** to just **13% in 2009**.

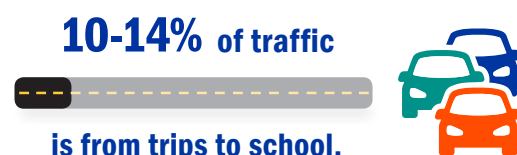


**Private vehicles** account for **half of school trips between  $\frac{1}{4}$  and  $\frac{1}{2}$  mile**—a distance easily covered by bike or on foot.



**EXAMPLE:  $\frac{1}{4}$  mile  $\approx$  500 steps  $\approx$  5 blocks**

In 2009, American families drove **30 billion miles** and made **6.5 billion vehicle trips** to take their children to and from schools, representing **10-14% of traffic** on the road during the morning commute.





Understandably, objections to innovation of any kind are often rooted in a comfort with the familiar and respect for informed standards. Models for public education, which barely existed prior to the 20th century, developed rapidly over the first half of the century, and were advanced as normative for subsequent generations, particularly in suburban communities. Standardization held the promise of a necessary equality, but in practice proves to be elusive – particularly at the level of basic facilities, which tend to be inflexibly fixed assets. With each successive generation of new facilities, the qualitative gap between new and existing is harder to overcome. Yet, the goal of facility parity guides many strategic decisions, encumbering

even programmatic innovation, which often reflects back to the existing facility model. As a result, parents might unwittingly advocate for district-wide equity rather than identity, distinction, and an incremental transformation toward excellence.

“ In the best cases, schools can assert a **POSITIVE IMPACT ON LOCAL DEVELOPMENT** and become **AGENTS OF REVITALIZATION.** ”



Avenues: The World School New York  
New York, NY



## IV. STRATEGIC RESPONSES

### Recognizing Value

The greatest benefit of adapting underperforming commercial property lies in finding value where others do not. If market obsolescence of a particular property can be attributed to certain identifiable factors, then it should be possible to reassess those factors against a school's requirements to uncover its value specific to those needs.

In fact, commercial properties that are not returning sufficient income relative to the market average tend to share certain characteristics – some of which are physical constraints and some of which are programmatic. The *physical constraints* range from things that are difficult to change to those that are impossible to change:

- Overall building size (total square footage and number of stories)
- Building floor plate (square footage per floor)
- Floor-to-floor height (measured from one floor level to the next; affects ceiling height)
- Building location (proximity to transit or premier highway access)

The preferred ranges of these features will vary depending on the local market, but once a property has fallen outside that range, there is little an owner can do to reposition the building.

Programmatic constraints refer to those features of a property that are more readily altered:

- Building age (since last major renovation)
- Available amenities (including neighborhood)
- Parking ratio on-site (depending on local sub-market)

Of these, the *available amenities* may be most determinative. At a minimum, most prospective tenants will expect access to a conference center, a fitness center, and food service – if not on-site, then within the walkable neighborhood. The availability of newer, more modern assets in the broader market puts additional pressure on building owners to replace outdated lobbies, elevators, and building environmental



Green Ivy: Montessori  
New York, NY

systems. Properties that can't offer these are at a distinct disadvantage for attracting commercial tenants, largely owing to the preferences of the contemporary labor force, which increasingly favors a modern, open, collaborative environment with access to urban amenities.[17]

Schools, however, may not be subject to the same market forces. The unique characteristics and requirements of many school programs make them surprisingly adaptable as prospective tenants. To be sure, they bring with them a separate set of imperatives, particularly related to security, programming, and environmental quality, but once established, they are destinations in their own right, independent of conventional market preferences for nearby amenities. In the best cases, schools can assert a positive impact on local development and become agents of revitalization.

## PROCUREMENT STRATEGIES

### Procurement Strategies

How a school system leverages their value analysis will depend on their specific strategic needs.

Although outright purchase and redevelopment of a property is most consistent with conventional practice and financing, several alternatives may be feasible. Education providers that have prioritized speed-to-market, short-term flexibility, or programmatic innovation and adaptability may consider leasing, either as a sole tenant or partial occupant of a multi-tenant property.

These strategies pose challenges of their own but offer undeniable opportunities as well:

- Conversion of existing shell buildings allows schools to *occupy the space more quickly* in response to demographic surges, or can provide semi-permanent *surge space* for ongoing fluctuations
- Operating within a fixed core-and-shell, space can be reconfigured quickly and cost-effectively as an *incubator for emerging non-traditional programs*
- Providing high-quality regional *swing space* for schools temporarily displaced by renovations can reduce construction duration and cost compared to phased-occupied renovations and serve multiple schools with minor reconfiguration
- Locating *specialized programs* that are a district-wide or regional resource, drawing students from across school boundaries (e.g. STEM, Arts Focus, Career Technology, Alternative Schools)
- Meeting demand from *Charter Schools* and privately funded *Independent Schools*, which may not be obligated to a district's Ed Spec program or bond financing

### Multiple-Tenant Lease

While single-tenant use of a commercial building is relatively uncomplicated, whether purchased or leased, small schools or incubator programs may need to explore other options, particularly in dense urban areas. Multi-tenant situations are more flexible but present a host of challenges, both obvious and subtle.

To accommodate both security and convenience, a clear separation of the school community from other tenants (for the mutual benefit of both) is common, particularly for daily arrival and class transitions. A separate entrance and lobby has proven to be the most effective arrangement, even where the school does not have a ground floor presence. Since emergency egress stairs from floors above may pass through the school's space, dedicated vertical circulation (usually stairs) is typically installed for school use in multi-floor arrangement. This allows change of classes and internal school circulation to occur without disrupting other tenants. Intermingling of tenants may be impossible to avoid during emergency evacuation, so strict emergency protocols must be implemented and understood.



BASIS Independent McLean  
McLean, VA



Where the school also provides transportation, bus traffic should be designed to avoid inconveniencing non-school tenants while ensuring the safety of the students. Similarly, parent drop-off, pick-up, and potential queuing should be designed and controlled so as to not interfere with other tenants' operations. Consequently, this strategy is most suited to smaller, specialized programs with less transportation demand and denser urban areas that can more easily absorb anomalous traffic patterns.

Base-building environmental systems (HVAC) may not meet all of a school's requirements. Typically, office buildings will only run mechanical units to provide conditioning during standard business hours, and base-building systems are sized for a relatively low number of business occupants (as determined by code). Tenants with non-standard operating parameters can usually negotiate exceptions. If that tenant is a school, additional mechanical units may be needed to address both increased occupant loads and off-hours run time for after-school community events.

### Full Building/Sole Tenant

Leasing and occupying an entire property removes many of the security and operational complexities. It also allows for a greater range of customization and identity so that the building can better act and feel like a conventional school. Leasing also provides longer-term financial flexibility by reducing the inventory of fixed assets and maintenance liabilities and replacing them with more readily adaptable facilities.

In the short term, the capital cost to bring a leased facility online (often referred to as *first costs*) is greatly reduced, as much of the financial burden (rent) is shifted from the capital improvements budget to the operations budget. On the other hand, bond financing of first costs does not typically impact the *operating budget* of a school system, where every dollar spent on rent or maintenance reduces the amount available for educational programs and curricular resources. As a result, this strategy may be better suited to independent, charter, or privately funded schools.





## Commercial Property Purchase

Outright purchase and redevelopment of a commercial property is most consistent with conventional practice and capital financing. That doesn't mean it will necessarily cost less than construction of a new school facility. As with any large investment of capital, due diligence in physical inspections, regulatory research, and financial analysis should inform the decision. Since it is also likely that the property will need to be modified to accommodate a conventional academic program – particularly athletics, performing arts, or dining – tenant improvements, additional construction, and site costs may be significant.

Still, this strategy is not without its benefits. Financial value certainly can be found in the commercial market, and appropriate properties will begin with the advantage of existing improvements, including utility infrastructure, transportation connections, parking, and other site amenities, in addition to the building itself – potentially in readily-occupied condition. Built to be inherently flexible, most commercial properties will also retain much of their market value even after adaptation, providing a potentially leverageable financial asset. Often, a quickly executed first phase can adapt the property for immediate occupancy while more time-intensive modifications or additions are constructed. Where the alternatives are an existing school in distressed condition or extended use of obsolete temporary buildings, a quickly converted commercial property can be the best educational environment available.

“Where the alternatives are an existing school in distressed condition, or extended use of obsolete temporary buildings, **QUICKLY CONVERTED COMMERCIAL PROPERTY CAN BE THE BEST EDUCATIONAL ENVIRONMENT AVAILABLE.**”

## PROGRAM ADAPTATION

Perhaps the greatest obstacle to successful conversion of commercial buildings is the specificity of educational space typologies. It is often hard to see how building structures and sites optimized for commercial activities can be reconfigured for many academic activities – particularly given the breadth of activities schools accommodate. But it might be productive to wonder if we are asking the right questions. Instead of asking if buildings can be adapted to support conventional educational programs, perhaps we should ask if the conventional programs are themselves positioned for transformation. By observing current and accelerating trends, can we plausibly predict future room typologies? Or reprioritize the attributes of the physical plant?

### Flexible Alternatives to Inflexible Program Elements

In many of our case studies, programmatic innovation has led to inventive spatial arrangements. At CityLab High School (Dallas Independent School District), urban exploration through walking and biking tours is core to the curriculum, so beneficial physical activity is unavoidable. To supplement that, a fitness room replaces a full-sized gymnasium. Design and art classes are also fundamental, rather than elective, so they are held in open studios, not behind closed doors and walls. The BASIS Independent Schools do not provide a traditional library collection, so a comfortable, quiet reading room for individual or group study in soft seating is sufficient.



BASIS Independent McLean  
McLean, VA

Even in more conventional settings, underutilized but highly specialized program elements like science labs are decoupled from seminar rooms as reservable shared labs or “tinkering” spaces; computer labs are reimagined as digital commons; the entire science and technology curriculum is redeveloped as an entrepreneurial, inter-disciplinary, project-based experience that looks more like a commercial collaboration studio than a conventional teaching space.

The requirements for non-core amenity functions can also be met through local partnerships. Nearby theaters, or even churches, can provide performing arts spaces; a partnership with Parks and Recreation departments or local universities can provide access to athletic fields and gyms. Contracted catering or regional cooking kitchens can provide food service, decoupling the dining spaces from a fixed (and expensive) prep kitchen and replacing large central cafeterias with smaller distributed cafes.

These incremental adaptations of the conventional (Ed Spec) program risk creating functional discrepancies across a large network of schools. While it may not be practical to achieve facility parity in a converted commercial property, that may be offset by the perception of distinction, innovation, and a unique identity – characteristics of many successful *school choice* programs.

## Civic Presence

In many communities, public schools have long been understood as *civic structures*, anchoring a community and providing its identity as well as the infrastructure necessary for civic life – meeting rooms, polling places, community arts, sports and recreation. Even in a separated, single-use zoning model, this role has more to do with a school's functional amenities than its core mission. But perhaps the foundational premise of the neighborhood school as the building block of education networks is itself vaguely anachronistic. Some communities, for example, have reimagined Kindergarten and Elementary schools as intergenerational facilities, pairing schools with senior living communities to share activity spaces, gardens, and wellness amenities that not only benefit both populations but knit together an essential social fabric.[18] Civic engagement is noticeably absent from the suburban commercial landscape – which tends to be unintentionally rootless. Perhaps adapted and joint-use facilities can ignite not only economic revitalization, but civic as well.

## OFFICE BUILDING OBSOLESCENCE

Obsolescence has been occurring since the advent of the modern office building and can be caused by rising land values (the commercial office building may not represent the highest and best use for a given property) or a decline in the appeal of the space due to dated physical characteristics. The rate of obsolescence tends to accelerate during periods of economic downturn and in periods in which there is rapid change in tenant workspace preferences. This plays out in the real estate market as a “flight to quality” as tenants move from older space to newer space within the same commercial district.

Some traits of obsolescence can be readily remedied through renovation, such as access to amenities, the building's age since renovation, and parking ratio. Other factors are less easily altered, such as location (relative to transit and highways), floor plate size, building size, and ceiling height.

As buildings age, they are faced with the choice of upgrading to try to become competitive or accepting rents below market value. When renovation is not likely to provide return on investment, building owners can consider a third option – looking at adaptive reuse. Larger projects are more likely to reinvest in improving the property to try to regain rental appeal while older small- to mid-size projects may be more likely to look to creative solutions and repurpose.

Source: NGKF, “Suburban Office Obsolescence”



## VI. CASE STUDIES



**A. AVENUES - THE WORLD SCHOOL NEW YORK**  
New York, NY



**B. GREEN IVY SCHOOLS**  
New York, NY



**C. NEWMARK**  
Scotch Plains, NJ



**D. BASIS - McLEAN**  
McLean, VA



**E. BASIS - FREMONT**  
Fremont, CA



**F. CITYLAB**  
Dallas, TX

### Relevant Challenges Key

*\*Icons are fully defined after case studies.*



Safety



Security



Convenience



Adaptability



Flexibility



Wellness



Social Wellness,  
Community









# AVENUES: THE WORLD SCHOOL NEW YORK

New York, NY



**AVENUES: THE WORLD SCHOOL NEW YORK** introduces an educational model for students in an increasingly global society with a curriculum that will be common across the school's 20 worldwide locations. For its inaugural campus in New York City, the client wanted to create a physical environment that supports the curriculum and provides a high-performance setting for 21st-century learning.

After years of pursuing vacant sites for a new building, Avenues determined that adaptation and renovation of an existing building would better fit their model. They explored several multi-use buildings in Manhattan and ultimately found an old warehouse building in which they would be the sole tenant. A historic landmark building designed by Cass Gilbert in 1928, the warehouse featured 20,000 sf floor plates and large concrete columns, and presented a number of design challenges. The 20'x20' column spacing, and the 11-foot floor-to-floor height are both smaller than ideal, and the vertical circulation core was not adequate for a school occupancy. The first floor of the building was also a challenge. As a warehouse building, the entire ground floor was a loading dock positioned 3 feet above the exterior sidewalk level. Only the one bay of the floor met the grade at sidewalk level.

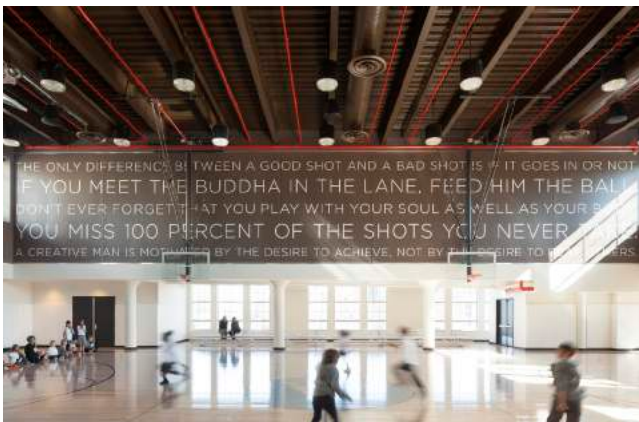
Nonetheless, the benefits of the building outweighed the challenges. The building has abundant windows on all four sides, the 1st and 3rd floors have higher clearances, and a balcony off the 3rd floor (actually the old train platform that accepted deliveries from the elevated rail) looks out onto the High Line Park. The 3rd floor loading platform and higher clearance made it perfect for the dining floor of the school, and replacing the old loading doors with glass overhead doors allowed the cafeteria to open out onto the park.

Two spaces that presented greater challenges were the Black Box Theater and the Gymnasium. The school chose to accept columns within the theater space so it could be located near the entry in an easily accessed and prominent location. The gymnasium was placed on the top floor so that several columns could be removed and a higher, clear-span roof built to provide a regulation height over the basketball court.

A revolutionary **EDUCATIONAL MODEL** for students of the **21ST CENTURY** is promoted throughout a high-performance **LANDMARK SITE**.

At ten stories, the building's verticality suggested establishing four distinct schools within the building for the 1,600 students ranging from grades Pre-K through 12 – an adaptation that proved fortuitous. Divided into two-story units, each school within the larger campus maintains its own identity while connecting at discrete locations, maintaining an overall focus on connectivity and the fluid exchange of ideas. With an abundance of natural light, the school emphasizes its urban location through constant visual connection to the outdoors. In order to work with the 20' column spacing, the classrooms are smaller than typical, so all classrooms have access to large common areas and small-group resource spaces to facilitate peer-to-peer collaboration.

New egress stairs were added at three corners of the building, and new large-capacity elevators were added in the shafts of the old freight elevators. A vertical connection from the first floor through to the 3rd floor and The High Line enables visitors to glimpse the park's trees as they enter.



## PROJECT PROFILE



### LOCATION

Chelsea, New York City



### CLASSIFICATION

Urban, dense mixed-use, proximity to urban amenities



### PROGRAM

Pre-K through 12, private



### SITE

Full city block



### ORIGINAL USE

Warehouse, distribution center



### SIZE

215,000 sf



### DATE BUILT

1928



### RELEVANT CHALLENGES

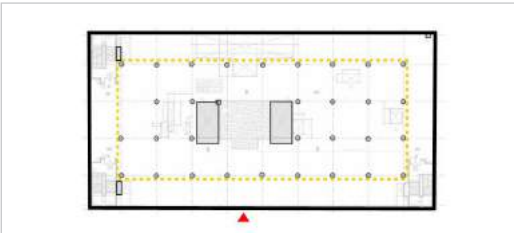
10-story vertical campus; deep floor plate with tight column spacing; no site amenities/play fields; arrival, curb-side vehicle queuing; historic landmark status



### ADAPTED PROGRAMS

Chelsea Piers for additional physical activity space

### ORIGINAL FLOORPLATE





# GREEN IVY SCHOOLS: PINE STREET SCHOOL

New York, NY



**GREEN IVY SCHOOLS** provides community-based private schools that emphasize skills-based experiential learning. The school in New York's financial district includes both Montessori and International Baccalaureate programs. Located on Pine Street within a historic landmarked office building, the school occupies spaces on three floors for grades preK-8. Through its design, the Pine Street School reflects the unique philosophy of Green Ivy Schools — emphasizing community, connection to nature, and collaborative creativity.

Occupying only the lower floors of a multi-tenant office tower in the financial district presented the challenge of providing high-quality, functional space on small, irregularly shaped floor plates in a dense urban locale. The project addresses these constraints by creating a playful, evocative, and inspirational place to teach, play, learn, and grow in spaces that are open, flexible, and adaptable. Design motifs that recall nature and the outdoors characterize the interiors.

For security and convenience, a new entry off Pine Street was created for the school's exclusive use, allowing the students to enter without crossing paths with the office tenants. This new entry has a very small footprint on the 1st floor, but allows the school to have a street presence

and access to the upper floors through a new stair and elevators dedicated to the school. The main building elevators are not used by the school.

The 2nd floor includes a welcome center for parents and the Pre-K program. The oddly shaped floor with tall ceilings was ideal for these programs, as well as additional administrative spaces.

The 3rd and 4th floors are occupied by the elementary school. A new internal stair was added to connect the welcome center to the 3rd floor, providing elementary students direct access to their space. The long lines of windows along Pine Street and Wall Street are ideal for the required classrooms, but the deep floorplate and awkward ceiling conditions posed unusual challenges.

A narrow space with low clearances provided the only connection from one side of the 3rd floor to the other. The design team turned this challenging space into a beautiful 'River' Commons which gave the students unprogrammed activity space and a great area for the lockers. Some quirks in the base building structure provided an opportunity for additional small group learning spaces. The entire space is designed to encourage interaction between peers and teachers; both formal and casual.

In response to its dense urban context, the interior design of the school provides several strategically placed “oases” that feature abstracted natural forms and images of natural elements. The lobby and welcome center are designed as flexible space and common meeting place for parents, teachers, and students. The pre-K floor design incorporates a garden theme with green accent colors and a playful leaf design. As one progresses from the pre-K floor to the K-5 and 6-8 floors, the circulation and communal spaces transform into poetic abstractions of outdoor environments.

The design of the classrooms emphasize flexibility. Operable partitions allow the space to be combined and reconfigured in multiple ways. Even the corridors are reimagined as essential channels for community interaction that encourage cross-pollination of different learning experiences. An existing auditorium space was retained and reinvented with minimal demolition.



## PROJECT PROFILE



### LOCATION

Financial District, New York City



### CLASSIFICATION

Urban, dense commercial use, proximity to urban amenities



### PROGRAM

Pre-K through 8, private



### SITE

Office tower, lower levels



### ORIGINAL USE

Business (Office)



### SIZE

3 floor plates vary in size and shape:  
2<sup>nd</sup> floor = 9,600sf,  
3<sup>rd</sup> floor = 20,300sf  
4<sup>th</sup> floor = 17,800sf



### DATE BUILT

1930



### RELEVANT CHALLENGES

Multi-tenant building; vertical circulation over multiple floors; egress capacity; security; food service/prep; historic landmark status



### ADAPTED PROGRAMS

Partners with local gym for physical activity space; contracted lunch catering

### ORIGINAL FLOORPLATE



# NEWMARK SCHOOLS

Scotch Plains, NJ



**THE NEWMARK SCHOOLS** are state-approved, private schools for students, ages five to 21 years with learning disabilities and behavioral disorders. The schools specialize in ADD/ADHD, anxiety, Asperger's syndrome, bipolar disorder, highly functioning autism, PPD-NOS, obsessive-compulsive disorder, oppositional defiant disorder, and sensory integration disorder. Students come from approximately 45 school districts within seven New Jersey counties and represent a varied demographic and socio-economic base. The program offers a family-like learning environment with small, quiet classrooms. Each student receives an individually tailored academic plan delivered by highly trained staff members.

An existing 30,000 sf building, originally a Verizon Call Center, was adapted and converted for the school's use, with additions for a gymnasium and a two-story high school. The project brings together two separate existing campuses; one for the lower and middle school and one for the high school. The adaptive reuse of this abandoned commercial property made the project economically viable for the school, and addressed administrative inefficiencies.

Newmark Schools specialize in creating a  
**COLLABORATIVE ENVIRONMENT.**

The existing one-story building featured a very deep floor plate, and significant portions of the interior could not be reached by daylight through perimeter windows.

To overcome that inherent disadvantage, the existing building was divided into a zone for the younger students at the front of the building, and one with support spaces behind it. Shared programs such as the library, cafeteria, game room, music room, and service spaces occupied the back zone and a wide "Main Street" corridor was created between them to connect the new additions and provide access to the shared programs.

On the northeast side of the existing building a new addition provided a full gymnasium and fitness center. On the southwest side of the existing building, a new entry connects the bus drop-off and the back parking area and bridges the connection of the existing building and two-story addition, where the main administrative suite occupies the 1st floor and the high school program is on the 2nd Floor.

The classroom layout was developed to foster collaboration. Instead of rows of traditional desks, students are seated in node chairs, which are mobile and flexible. This facilitates quick, easy transitions, going from one teaching mode to the next without interruption.



Classrooms are equipped with interactive whiteboards, media stations, laptops, and wireless access in all learning areas. The program also includes two art studios, a soundproof music room, therapy rooms, science lab, and a health and wellness center. The school



## PROJECT PROFILE



### LOCATION

Scotch Plains, New Jersey



### CLASSIFICATION

Suburban, commercial use



### PROGRAM

K through 12,  
special needs; regional



### SITE

5-acre site  
with play  
space, drop-off,  
and parking



### ORIGINAL USE

Call Center



### SIZE

Existing  
one-story,  
30,000 sf  
building; additions  
of ~ 30,000 sf  
over two floors



### DATE BUILT

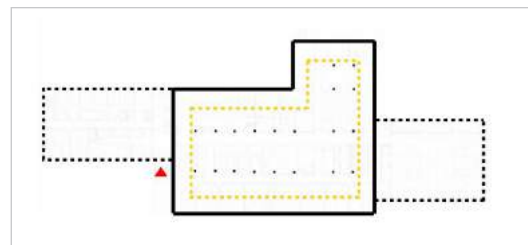
1980



### RELEVANT CHALLENGES

Special needs campus with  
elementary school and high  
school; classrooms designed to  
meet the needs of the special  
needs population; gymnasium  
addition required

### ORIGINAL FLOORPLATE



# BASIS INDEPENDENT McLEAN

McLean, VA



**BASIS INDEPENDENT SCHOOLS** is a growing national network of independent schools serving Pre-K through 12th grade. For their third campus in the US, they purchased a vacant former corporate headquarters campus in the Tysons Corner area of McLean, Virginia. Several unique characteristics of the existing structure facilitated its adaptation and reuse as an environment well-suited to a STEM-focused, liberal arts program. The unusually deep floorplates were arranged around a series of sky-lit atrium spaces that became the central organizing feature of the school. Classrooms, labs, arts, athletic, and administrative spaces are all organized around the atrium to become the heart and crossroads of the school. The floor of the atrium itself serves as the school's cafeteria.

The most challenging constraints were ingress/egress capacity and other issues related to the building code that determined occupant load of a school, which is greater than the original design occupancy. An additional egress stair was added to provide increased exit capacity, but also to provide more convenient transitions between classes. The base-building HVAC systems proved to be at the end of their service life and were replaced with more energy-efficient equipment better able to meet the demands of the school schedule.

While the building's single prominent entry and lobby were appropriately located for a school, a security vestibule was inserted to allow control of visitors to the property. A second entry was required to separate the Pre-K arrival and pick-up from the general school population, but the site configuration did not present an obvious location for it. Since the existing loading dock was no longer necessary, it was redesigned and landscaped to obscure its previous function and present a welcoming and secure arrival. Similarly, the upper deck of an existing parking garage was not needed for parking, so it was repurposed as a playground, complete with play structures for a range of age groups.

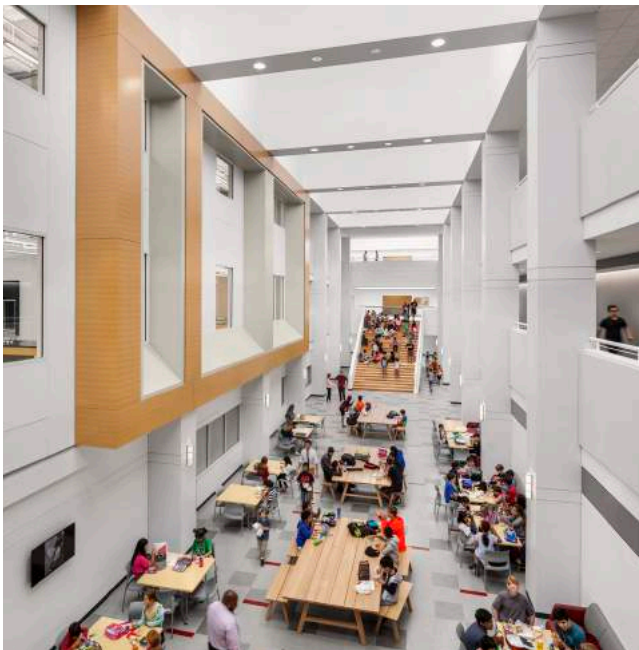
As a matter of brand identity, the BASIS schools feature exposed structure in lieu of ceilings wherever practical. In this case, the existing concrete waffle slabs throughout provided an elegant finished ceiling. The 25-foot column spacing allowed for an efficient and effective classroom layout. The building featured an existing lecture auditorium that required minimal renovation to

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A vacant **CORPORATE CAMPUS**  
**TRANSFORMED** into an innovative  
 21<sup>st</sup>-century school community.

function as a performing arts venue, and a multipurpose activity space was inserted without extensive structural changes. The BASIS program does not include a traditional library, but requires a quiet Reading Room for individual and small-group research.

Only 120,000 sf of the more than 220,000 sf available was required for the first phase of occupancy, so the remaining space has been slated for future use, and in the interim, could be available for sublet. A full-sized high school gymnasium is planned to be inserted into the existing building footprint. The site provides adequate space for the potential addition of athletic fields and outdoor recreation space in the future. In the meantime, a partnership with the local parks department allows the school daytime use of athletic fields directly across the street from the school.



## PROJECT PROFILE



### LOCATION

McLean, Virginia



### CLASSIFICATION

Suburban office environment, trending to mixed use with multi-family residential and retail, and higher density. Proximity to transit.



### PROGRAM

Pre-K through 12, private



### SITE

11 acres



### ORIGINAL USE

Corporate Headquarters



### SIZE

3 stories  
120,000 sf  
per floor



### DATE BUILT

1984



### RELEVANT CHALLENGES

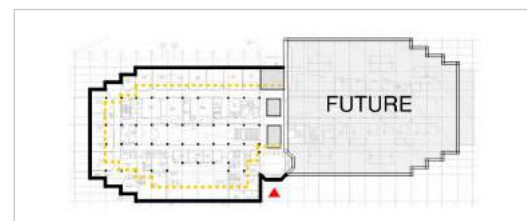
Limited site area, no athletic or play fields; aging HVAC; egress capacity; single entry; potential for multi-tenant sub-lease; obsolete commercial kitchen; identity



### ADAPTED PROGRAMS

Contracted lunch catering; partnership with local Parks Department for use of public athletic fields

### ORIGINAL FLOORPLATE





# BASIS INDEPENDENT FREMONT

Fremont, CA



**BASIS INDEPENDENT SCHOOLS**, a national network of STEM-oriented schools, was looking for an incubator site in the Bay Area for a K-8 school. They located a vacant commercial space in the heart of Fremont, CA, originally built as a call center but minimally reconfigured for a charter school that had since closed. Through surgical reconfiguration, modernization, and completely refreshed finishes, BASIS Independent Fremont was transformed into an environment uniquely suited to its rigorous, comprehensive program.

The nearly square, 32,000 sf building featured a continuous ribbon of glazing at the perimeter, but with its deep floor plate, daylight was not reaching the interior spaces. Long-spanning glulam wood beams provided an opportunity to carve out a spacious, column-free multipurpose room at the center of the plan as the primary activity space for the school, thereby allowing all of the classrooms, labs, primary learning spaces, and cafeteria to enjoy abundant daylight at the perimeter.

Located in a commercial campus and surrounded by shared surface parking, several site challenges became evident: the school needed to establish its presence; vehicular arrival and queuing needed to be accommodated; and a new, safe playground landscape

had to be carved out of the parking lots. Recladding an existing entry canopy and thoughtful restriping of the drive aisles organized the entry sequence, and an enhanced, soft-surfaced play area, safely enclosed by trees and fences, provided both an enjoyable multi-age playground and a welcome relief from the surrounding asphalt.

On a limited budget and compressed timeframe, through selective and minimal reconfiguration of the plan layout, an entirely refreshed environment was achieved that met all of the program requirements and code upgrades. Dining is provided by contracted catering, so there was no need to build a commercial prep kitchen, just a serving line. The design also explored the evolution of the BASIS branded environment through the use of color, materials, signage, furniture, and lighting.

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**BASIS EMBRACES THE DISRUPTION** of traditional educational models, which may make them **MORE RECEPTIVE** to seeing how a former call center can be transformed into a high-performing school.

Site Context



# PROJECT PROFILE



**LOCATION**  
Fremont, California



**CLASSIFICATION**  
Low-density urban,  
mixed-use area



**PROGRAM**  
K through 8, private



**SITE**  
Stand-alone  
pad site  
within larger  
commercial  
campus



**ORIGINAL  
USE**  
Call Center



**DATE BUILT**  
1980s  
(presumed)



**SIZE**  
1 story, 32,000 sf

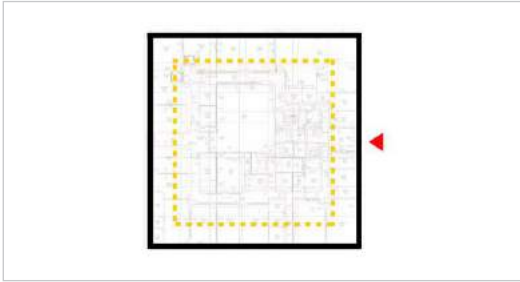


**RELEVANT CHALLENGES**  
Speed-to-market; low budget;  
long-term temporary; deep  
floor plate/access to daylight



**ADAPTED PROGRAMS**  
Contracted lunch catering

## ORIGINAL FLOORPLATE



# CITYLAB HIGH SCHOOL

Dallas, TX



**CITYLAB HIGH SCHOOL** is an open enrollment inner-city program where students use the city itself as a classroom to engage with the diverse social and physical fabric of the urban environment. Through work with community partners on authentic projects, students develop a multidisciplinary understanding of the built environment, the natural world, and the social and economic systems of the city while developing their academic and social/emotional skills as they prepare for college and post-secondary success. The program is organized around endorsements in Architecture, Urban Design, Sustainability, and Public Policy.

Supporting their urban vision and mission, CityLab High School is housed in an adapted five-story commercial building located at the edge of the central business district, just steps from Dallas City Hall. While the program grows, the building initially will be shared with its current tenants – various departments of the DISD central administration. At the completion of the conversion, the school will have a capacity of 1,000 students in a structured, open-plan configuration designed for a project-based pedagogy. The occupant load per floor does not require additional egress capacity.

The building and site are not without their challenges. Located at the southwest corner of an urban block,

windows are available only on the south and west facades. There is no access to daylight on the north and west. As a result, the plan was arranged to maximize daylight penetration through the floors with minimal floor-to-ceiling partitions, mobile room dividers, and interior glazing panels. The Studio class is at the core of the program, so the most visible space is allotted to the studio. Each floor also features a central Commons, an active gathering space for both formal and informal interaction. Although the plan is compact, the collateral benefit of increased transparency and interactivity is consistent with the school's ethos.

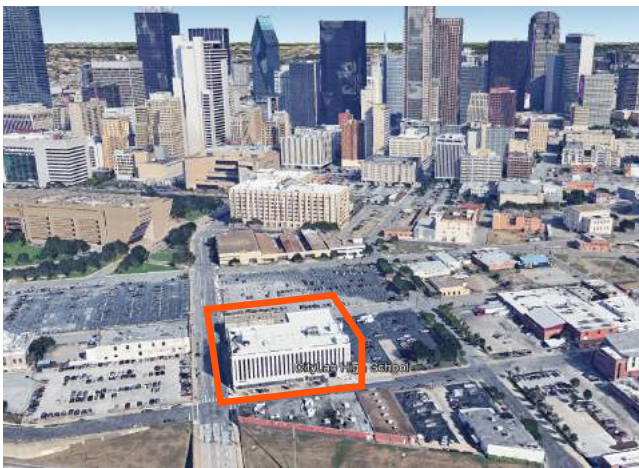
The cast concrete structure (assumed Type 1 construction) spans about 22 feet between columns, making it difficult to provide a room as large as 800 sf without a column obstruction. This was acceptable given the prevailing student-centered active learning model, which does not rely as heavily on lecture-style content delivery.

The building is also built out nearly to the lot line, eliminating the possibility of developing outdoor activity spaces. As a choice school, full inter-scholastic athletic programs are not required, and physical education is provided in a smaller fitness room and local parks. Common areas are located on the building's ground

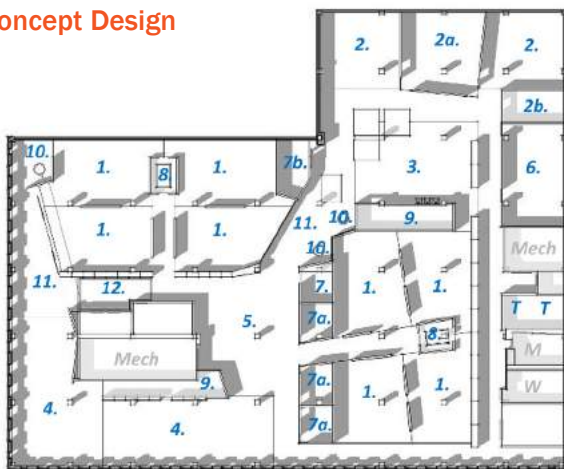


floor – including a full cafeteria and commercial kitchen, administrative offices, display gallery, fitness room, and workshop. To support the design-focused endorsements, the workshop is an essential common space, as well as a potential community asset. Its location on the ground floor, visible and accessible from the sidewalk, is an intentional invitation to the community to share in the resources of the school.

### Site Context



### Concept Design



#### Plan Legend | Typical Floor

- |                         |                                     |
|-------------------------|-------------------------------------|
| 1. Core Classrooms      | 5. Commons   Flex Space             |
| 2. Science Classrooms   | 6. "Flight Lounge" Faculty space    |
| a. Science Lab          | 7. Distributed Administration       |
| b. Science Prep         | a. Office                           |
| 3. Maker Space   Art    | b. Conference Room                  |
| 4. Design Studio        | 8. Resource area                    |
| 5. Commons   Flex Space | 9. Storage                          |
|                         | 10. Quiet Study   Small group Study |

## PROJECT PROFILE



### LOCATION

Dallas, Texas



### CLASSIFICATION

Urban, proximate to central business district



### PROGRAM

9 through 12, public innovation high school for Dallas ISD



### SITE

Lot line – phased occupancy from multi-tenant to sole tenant



### ORIGINAL USE

Business (Office)



### DATE BUILT

1960s (presumed)



### SIZE

5 stories 23,000 sf per floor



### RELEVANT CHALLENGES

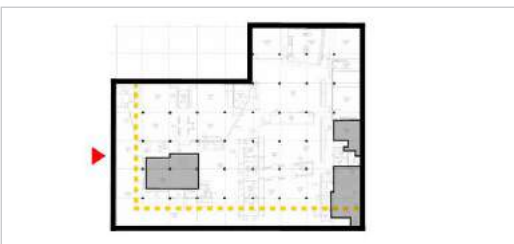
Speed-to-market; limited budget; scarce building documentation; deep floor plate – access to daylight; no site area, no athletic facilities; arrival, vehicle queuing



### ADAPTED PROGRAMS

Fitness room and bike brigade for physical activity; open plan studio environment

### ORIGINAL FLOORPLATE



## V. ACTIONABLE FINDINGS

### Practical Lessons Summarized

The **suitability of adaptive reuse** in a specific circumstance depends on a number of factors, including location, site configuration, building conditions, and intended use. While each of the case studies presents different challenges and unique solutions, several common factors emerge.



#### SAFETY

Fundamental to the mission of every school is to provide for the personal safety of students and teachers, both on the site and around it. Due to the presence of moving vehicles, arrival and departure from the site are moments of heightened risk and should be thoughtfully considered, regardless of transportation mode. Off campus, the neighboring context should be evaluated for unusual risks. Simple measures like adequate sidewalk width, crosswalks, school zone designations, crossing guards, vehicle sightlines, and traffic control can improve pedestrian safety and enhance walkability.



#### SECURITY

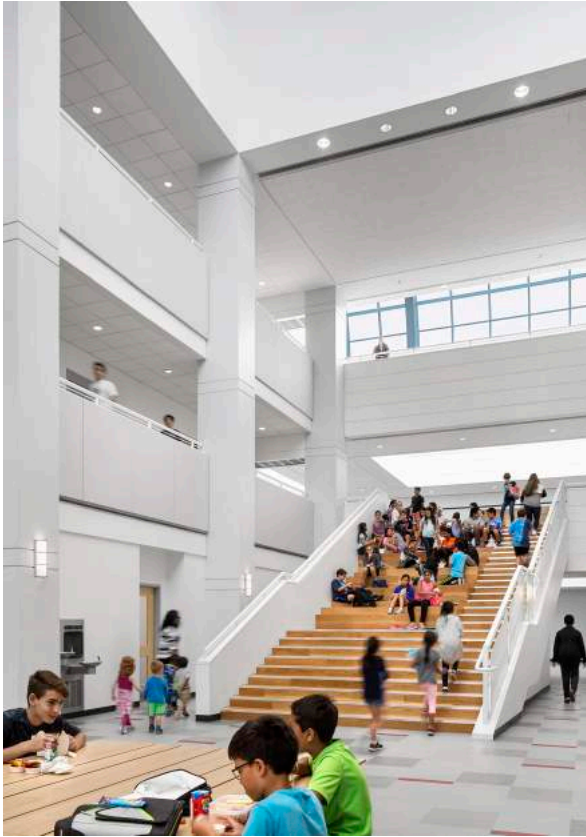
The physical security of both property and persons is a concern for any building tenant. For schools, a simple measure of security is how much control the staff has over visitors to the property and how easily they can be monitored. When multiple tenants occupy the property, control is necessarily compromised, but that may not present a security risk if access to the school's space is limited and monitored and non-school tenant space is strictly segregated. If the school occupies multiple floors, common use of vertical circulation should be limited to emergency egress and dedicated stairs and elevators provided for the school. Many urban buildings provide a doorman or security presence, which can be supplemented by the school.



#### CONVENIENCE

Schools typically house a larger population than most commercial tenants, so transportation is more critical. If the school will be providing bus transportation, stacking and loading for buses is likely to be necessary, along with queuing for private cars. Depending on the size of the school population and the configuration of the site, that may require curb-side pick-up and drop-off. Ideally it can be achieved on-site, and without disruption to other property tenant(s). Many commercial properties are not configured for the frequency of service loading that may be required for a school (particularly for food service), and internal adjacencies to the loading dock may not be optimized for the school's needs. The site should accommodate an appropriate amount of staff parking, and visitor parking with proximity to the school's entrance.





## ADAPTABILITY - Building Code Requirements

As determined by the International Building Code (IBC), Education (E) uses have different requirements than commercial (B-Business, or M-Mercantile) uses and the differences can have significant impact on the adaptability of a structure:

- Type IA (non-combustible) construction allows almost unlimited occupancy. However, any lesser construction type will limit the number of stories and floor area that can be occupied for educational uses. Four-story or lower buildings are more adaptable.
- The number of users on any floor is assumed to be higher in an E use than a B use. As a result, egress capacity of stairs and corridors needs to be higher, and the number of bathroom fixtures is typically greater.
- Mechanical systems may need to accommodate more air changes per hour (ACH) for an E use, which may exceed the capacity of existing (particularly longer serving) systems, and necessitate larger ductwork. In a multi-tenant space, additional dedicated units may be needed for increased load and after-hours use.
- Entitlements: For structures that were not built as schools, and where Education uses are not allowed by-right, an array of local zoning and other responsible agencies may have jurisdiction to review (and potentially deny) the change in use.



## FLEXIBILITY

Conventional school programs require larger spaces than a typical business user, and existing building structures may not have long uninterrupted spans. Even the basic classroom module will usually require an interior column spacing that allows unobstructed sightlines. 25' to 30' is usually sufficient, but smaller spans can work depending on the program. The structural grid also may have an impact on the efficiency of the plan layout. Structural modifications, expansions, or additions may be necessary to suit high-bay program spaces like gyms or multi-purpose rooms.

To maintain an appropriate ceiling height in classrooms and provide functional mechanical systems, many commercial buildings will have an insufficient floor-to-floor height. A height of 14 feet or more is preferred to fit mechanical units, ductwork, structure, sprinklers, and electrical devices while maintaining a comfortable ceiling height. Floor-to-floor heights as low as 11 feet are workable with close coordination or inventive design.





## WELLNESS

In addition to the physical safety and security of each occupant, increasing attention is being paid to the effects of the indoor environment on health, well-being, and cognitive performance. Due diligence inspections should identify any hazardous materials and contaminants to be removed, but wellness is supported by the ambient conditions as well. For optimal cognitive outcomes, every learning space should have adequate access to daylight and views. This can best be accomplished when the depth of the floor plate is around 36-42 feet (28-30 feet room, plus 8-12 feet corridor to each side of the core.) High-bay retail spaces with abundant skylights are a suitable alternative.

The HVAC systems affect the learning environment in a number of ways – acoustics, thermal comfort, air quality – and all of these criteria should inform the system design. Adequate lighting design, appropriate to the program tasks, is no less important. Opportunities for physical activity and recreation, indoor and outdoor, should be available in some form for all age groups.



## SOCIAL WELLNESS | COMMUNITY

Regardless of the location, healthy school communities inevitably develop a sense of common purpose, which can be supported and nurtured by the physical presence of the facility. This common purpose may be expressed at many different scales, but begins with the social development and wellness of each individual student. To that end, every property converted to a school should accommodate student gathering and hang-out spaces for various-sized groups, both indoor and outdoor, where essential socialization and peer-to-peer learning can flourish. Every site should offer the opportunity for outdoor social spaces, and – depending on the age group – recreation and play.

These moments of social interaction are ultimately supported by a school identity and sense of pride. By our nature, we attach our collective identity to a place and draw social cohesion from that identity. We know the impact of social isolation on young people, and should be careful to provide environments that foster positive interaction and a sense of belonging.

“Take stock of what is around you. **USE WHAT YOU HAVE OR WHAT IS AVAILABLE** at the time. If a thing is discarded because it no longer has value or use to its previous owner, accept and receive it. **MAKE IT WORK FOR YOU.** Compel yourself to have a deep engagement with discarded things. Make resources work for you in new and unintended ways. **REPURPOSING IS AN ACT OF REDEMPTION**, an act of imagination... In new hands, there is renewed possibility for the discarded and overlooked.”





# APPENDIX

## ADAPTIVE REUSE EVALUATION WORKSHEET

### ADAPTIVE REUSE EVALUATION WORKSHEET

#### ► Development Scenario

Specific program, procurement strategy, and size.

Building Address: \_\_\_\_\_

Intended Academic Levels & Programs: \_\_\_\_\_

Square Footage required (initial and ultimate): \_\_\_\_\_

Procurement Strategy: ☐ Partial Lease/Multi-tenant ☐ Full Building Lease ☐ Property Purchase

#### ► Site

Site features which are typically required, or desirable, on the site of an academic facility.

FEATURE (for each feature listed below, indicate this property's suitability by checking the appropriate box)	EXISTING (little or no modification req'd)	READILY ADAPTED (easily modified to provide)	REQUIRES INVESTMENT (significant or structural mods req'd)	NOT AVAILABLE (cannot be achieved)
Vehicle in-out loop circulation with queueing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Two separate vehicle loops (car, bus)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dedicated school parking (secure)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Outdoor playground (ES) or common area (HS)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Athletic Fields / Courts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Traffic and pedestrian safety – School Zone	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Access to public transit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Compatible neighbors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
School identity (pride of place)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Observations:				



## ADAPTIVE REUSE EVALUATION WORKSHEET

### ► Building

Characteristics of the existing building that may be necessary to accommodate the intended functions or can be adapted over time to meet evolving requirements.

FEATURE (for each feature listed below, indicate this property's suitability by checking the appropriate box)	EXISTING (little or no modification req'd)	READILY ADAPTED (easily modified to provide)	REQUIRES INVESTMENT (significant or structural mods req'd)	NOT AVAILABLE (cannot be achieved)
Appropriate fire resistance rating (per IBC) Construction type as documented: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Adequate egress capacity (per IBC) Number of Egress doors at ground floor: _____ Number of Exit Stairs from upper floors: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Building systems capacity (MPE/FP)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Arrival: Secure, dedicated lobby	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Arrival: Secure, dedicated vertical circulation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Multi-floor open stair (dedicated for day use)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Large program space (multi-purpose, gym, lecture hall, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Food service (cafeteria, server, kitchen, proximate loading)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Toilet Facilities (core v. distributed, capacity)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Special program adaptation:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Structural system (material) and bay spacing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Depth (distance from core to exterior wall)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Floor height (distance from floor to floor)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Access to daylight and landscape views; operable windows	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Number of occupants per floor (program)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Egress capacity at ground floor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Egress capacity from upper levels	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Observations:				

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