MANTIS™ INNOVATION

Building for every generation

Strategic facilities and energy insights for K-12 school districts

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About Mantis

Mantis Innovation is a facilities and energy performance company serving clients across North America. We bring together facilities management, energy efficiency, building controls, and energy advisory services in one relationship, helping K-12 districts move from reactive maintenance to proactive, data-driven portfolio management.

We serve more than 10,000 clients across North America, managing over 2 billion square feet, with 8.8 million metric tons of greenhouse gas reductions achieved across our client portfolio. We hold a Federal GSA Multiple Award Schedule contract, providing K-12 districts with a pre-negotiated procurement pathway for facilities and energy services.

We work with districts of every size, from individual schools doing their first condition assessment to metro systems managing hundreds of buildings. Our approach is vendor-agnostic and data-driven, oriented toward the long-term performance of your buildings and the communities they serve.

mantisinnovation.com

Executive Summary

The United States has approximately 130,000 public K-12 school buildings. About half were built before 1980, designed for student populations, energy costs, and technology demands that bear little resemblance to the school districts that operate today. The national deferred maintenance backlog for K-12 facilities now exceeds $380 billion, and every year that number grows, the gap between what districts have and what their students need widens.

Yet facilities directors are asked to manage this challenge with constrained operating budgets, infrequent bond referendum cycles, and teams that are often smaller than the job demands. Energy costs, typically the second-largest line item after personnel, receive minimal strategic attention. Capital decisions are made reactively, triggered by failures rather than driven by data. And the pressure to demonstrate fiscal responsibility to taxpayers and elected school boards continues to grow.

The districts making progress on this challenge are not necessarily the ones with the largest budgets. They are the ones with a clear strategy, useful data, and the right partners. They have shifted from reactive maintenance to proactive asset management. They treat energy as a managed portfolio rather than an uncontrollable expense. They invest in building systems that directly affect student health, comfort, and academic performance. And they communicate their stewardship in ways that build public trust and support future investment.

This white paper is a guide for K-12 facilities and operations leaders navigating that challenge. It examines the six forces reshaping K-12 facilities today, outlines a performance-driven strategic framework, identifies the key objectives that matter most, and provides a practical road map for improving outcomes across a district portfolio, regardless of size.

Mantis Innovation brings together facilities management, energy efficiency, building controls, and energy advisory services into a single relationship, helping K-12 districts move from reactive maintenance to proactive, data-driven portfolio management. Mantis serves clients across North America, managing over 2 billion square feet of facility space.

CHAPTER 1

Six forces reshaping K-12 facilities

Facilities directors rarely need to be told that their job is hard. They know it. What they need is a framework for understanding the forces driving that difficulty and a strategy for responding to them. Six dynamics are reshaping K-12 facilities management today, each compounding the others.

01

Aging infrastructure: The weight of decades

Approximately half of all U.S. public school buildings were constructed before 1980. Many were designed when energy was cheap, technology infrastructure did not exist, and indoor air quality was not a measurable educational outcome. The HVAC systems, roofing assemblies, and electrical infrastructure in those buildings were engineered with useful lives of 20 to 25 years. Today, many of those same systems are operating at 35, 40, or more.

The result is a portfolio-wide performance deficit. Systems never designed to meet current ventilation standards, energy codes, or occupant comfort expectations are being asked to do exactly that. The cost of keeping them running, including maintenance labor, emergency repairs, and energy inefficiency, is substantial. And when they fail, they fail in occupied buildings, during the school day.

Broward County Public Schools in Florida comprises more than 32.3 million square feet across hundreds of buildings. The scale of that challenge requires systematic, data-driven asset management rather than reactive maintenance, and a technology infrastructure that can track condition and maintenance activity across the full portfolio.

02

The deferred maintenance crisis: A debt that compounds

Deferred maintenance is not a static number. It grows. For example, a $50,000 roof repair delayed for two years could become a $200,000 partial replacement. A partial replacement deferred for three more years could cost $750,000 for a full system replacement, plus remediation for the water damage that accumulated in the meantime.

The $380 billion national K-12 deferred maintenance backlog represents decades of underfunding and reactive decision-making. Reversing it requires a shift from firefighting to planning: understanding the condition of every asset in the portfolio, modeling lifecycle trajectories, and making repair-versus-replacement decisions based on data rather than urgency.

A large school district north of Dallas offers a useful example. When the district scheduled four schools for full roof replacements totaling $3 million, detailed condition assessments and lifecycle analysis identified repair and restoration options that reduced the total expenditure to $741,940, a savings of $2.28 million the district was able to redirect to other priorities.

Budget pressure and funding complexity

03

School districts operate within some of the most constrained public finance structures in the country. Operating budgets, capital budgets, bond funds, state allocations, and federal programs are governed by different rules, timelines, and accountability requirements. Facilities directors do not simply request capital funding when something breaks; they must plan years in advance, align

Energy costs, meanwhile, are typically the second-largest operating expense after personnel, yet they receive relatively little strategic attention. Utility bills are paid, complaints are responded to, and failed equipment is replaced. But few districts have a proactive energy strategy that treats procurement, consumption reduction, and incentive capture as an integrated program.

Cooperative purchasing vehicles, including state co-ops, national purchasing cooperatives, and federal GSA schedule contracts, offer districts a practical way to move faster and reduce administrative burden. Mantis Innovation holds a Federal GSA Multiple Award Schedule contract, providing K-12 districts with a pre-negotiated procurement pathway for facilities and energy services.

Community accountability and public trust

04

School boards are elected. Every dollar spent on facilities is a taxpayer dollar, and communities watch closely, especially when bond referendums are on the horizon. Districts that cannot demonstrate data-backed decision-making and measurable outcomes struggle to maintain the public confidence they need to pass future bond measures.

This accountability pressure is distinctive to K-12. Facilities decisions are scrutinized by parents who walk through school buildings every day, by community members who remember what those buildings looked like twenty years ago, and by board members who are directly accountable to constituents in ways that most department heads are not.

Districts that invest in systematic condition documentation, transparent capital planning, and clear outcome reporting build public trust, which sustains long-term investment in facilities. Those who do not find themselves perpetually defending reactive decisions made under pressure, are never quite able to get ahead of the problem.

Mantis & the GSA Schedule: A Procurement Shortcut for K-12 Districts

Mantis Innovation holds a Federal GSA Multiple Award Schedule (MAS) contract (GS-07F-158BA), valid through March 2029. K-12 districts can access Mantis services through this pre-negotiated contract, reducing the administrative burden of competitive bidding for eligible services and accelerating project timelines. Many state cooperative purchasing agreements also provide similar access pathways. Ask your Mantis representative about the procurement vehicle that works best for your district.

05 Indoor environment quality and student learning outcomes

This is the force that distinguishes K-12 facilities from virtually every other public-sector asset class. School buildings are not office buildings, courthouses, or maintenance yards. They are environments where children spend 180 days a year, and the physical condition of those environments directly affects what happens inside them.

Research consistently shows that poor indoor air quality reduces student attendance and concentration, that inadequate ventilation correlates with higher rates of respiratory illness, and that temperature extremes, including classrooms that are sweltering in September and freezing in January, directly suppress academic performance. HVAC failures are not just comfort issues. They affect educational outcomes.

Districts that understand this tend to frame facilities decisions differently. An HVAC upgrade is not only a maintenance cost; it is an investment in learning conditions. Combined roof and mechanical replacements improve building envelope performance and indoor air quality simultaneously, extending the value of every capital dollar.

06 Sustainability mandates and the energy code landscape

State energy codes are tightening nationwide, and emissions reporting requirements are expanding. Some states have introduced explicit sustainability mandates for public buildings tied to funding eligibility. And the frequency and severity of climate-related weather events, including hailstorms, flooding, and extreme heat, are increasing the physical and financial stress on K-12 building portfolios.

Districts that get ahead of these requirements benefit in two ways: they reduce long-term operating costs, and they protect access to grant and incentive funding that often requires demonstrated sustainability commitments. Those who wait for mandates to arrive often find themselves in reactive compliance mode on requirements that could have been addressed years earlier at lower cost.

The DC Department of General Services and DC Public Schools' partnership with Mantis Innovation illustrates what proactive sustainability commitment can look like at scale. The program installed 15 megawatts of rooftop solar across 65+ sites, achieving 20,000 metric tons of CO_2 reduction. It also created the 'Roofs That Teach' program, integrating solar monitoring data into DCPS science curriculum so the infrastructure investment had direct classroom value.

MANTIS PARTNER SPOTLIGHT

A West Texas School District — When a Storm Becomes a Test of Partnership

After a significant hail event damaged facilities across a 35-school district in West Texas, the district needed more than a roofing contractor. It needed a partner who could conduct forensic assessments, prepare documentation that would withstand insurance carrier scrutiny, and develop replacement and repair scopes across the full portfolio. Mantis has supported that work since 2017, managing everything from initial damage assessment through insurance claim negotiation, design, and construction quality assurance.

> *Mantis Innovation's entire team has performed all work up to our standards and exceeded our expectations. Additionally, all of our required campus roofing plans, draft front-end specifications, and drawings completed by Mantis have been exceptional and in line with our district's vision. We absolutely recommend Mantis and their team for any and all services they provide.*
>
> *— Executive Director of District Operations, West Texas School District*

CHAPTER 2

Performance-Driven Strategy for School Districts

Understanding the forces reshaping K-12 facilities is the first step. The second is developing a strategy for responding to them. A performance-driven strategy for K-12 facilities rests on five principles.

Doing more with less: The new mandate for facilities teams

Facilities directors are operating with lean teams and aging tools and buildings. The answer is not simply more staff; it is smarter systems and better data. Asset management platforms give facilities teams visibility across an entire portfolio, enabling prioritization rather than perpetual firefighting.

Mantis' Perform platform provides that infrastructure: asset tracking, condition scoring, life-safety issues, capital planning projections, and integration with existing CMMS systems. For Broward County Public Schools, which manages 32.3 million square feet across hundreds of buildings, Perform integrates with the district's existing system. To date, the program has tracked 767 preventive maintenance and repair events, with 272 warranty inspections completed and 86 ongoing.

The value is not just operational efficiency. Consistent documentation creates institutional memory and makes capital decisions easier to defend. When a school board member asks why a particular building is being prioritized for investment, the answer is in the data.

Schools as community resilience hubs

School buildings are not simply educational facilities. They serve as emergency shelters during disasters, community gathering spaces after hours, and polling places on election day. The dual-use reality of school buildings means that their physical condition affects the entire community, not just the students and staff who occupy them during school hours.

Resilient infrastructure, including backup power, robust HVAC systems, and weatherproof building envelopes, serves both the educational mission and the community's emergency preparedness. Districts that invest in physical resilience are strengthening the community anchors that neighborhoods depend on when things go wrong.

A school district in the Texas Panhandle has maintained an ongoing relationship with Mantis since 2017, reflecting this orientation. Across 45 district facilities totaling 3.7 million square feet, the work has included storm damage assessments, insurance claim support, roof replacement designs, and construction management, covering the range of services a district needs to recover from weather events and maintain building performance year over year.

Sustainability as a cost-reduction strategy, not a compliance burden

Many facilities directors hear the word 'sustainability' and think compliance paperwork. A more useful frame is cost reduction. Every dollar of energy waste in a school building is a dollar not in a classroom, not funding teachers, programs, or materials.

LED lighting retrofits, HVAC optimization, and building controls improvements deliver measurable utility cost reductions in year one. Utility incentive programs, available through most investor-owned utilities and many municipal utilities, can cover significant portions of project cost, improving the economics of efficiency investment considerably.

A small private college in New England completed a campus-wide energy efficiency project that included LED retrofits, rooftop unit controls, new boilers, and hot water heaters, with utility incentives covering 60 percent of the total project cost. A mid-sized university in Connecticut achieved 5.3 million kilowatt-hours in annual energy savings, equivalent to $955,000 per year in reduced utility costs. The mechanisms that produce these outcomes in higher education settings also apply to K-12 districts.

$955,000/year

estimated annual energy cost savings achieved through a Mantis energy efficiency program at a mid-sized university in Connecticut

Navigating procurement complexity

K-12 procurement is governed by state and local rules that vary significantly by jurisdiction. Competitive bidding requirements, board approval thresholds, and prevailing wage rules all shape what a district can do and how quickly. But flexibility exists, and knowing where to find it can meaningfully reduce administrative burden and project timelines.

Cooperative purchasing vehicles, including national cooperatives, state purchasing contracts, and federal GSA schedule contracts, allow districts to access pre-negotiated pricing for eligible services. For districts with limited procurement staff, this can be a practical way to move projects forward faster than would otherwise require a full competitive bid cycle.

Minimizing disruption to the learning environment

This constraint has limited parallels in most other public sector contexts. Construction and major repairs cannot happen during the school day or school year without extraordinary planning. Summer windows are short, typically eight to ten weeks, and must be shared across every capital project in the district. Occupied-building work requires specialized protocols, precise sequencing, and clear communication with principals and custodial staff.

A facilities partner who understands the school calendar builds it into project planning from the start rather than treating it as a constraint discovered mid-project. A middle school in the Texas Panhandle illustrates this: a 68,000-square-foot roof replacement combined with the repair and replacement of 39 HVAC units, completed on time with no cost overruns or operational disruptions, earning a 20-year manufacturer's warranty.

Disruption to the learning environment is not an acceptable trade-off. It should be treated as a primary project constraint from the beginning.

MANTIS PARTNER SPOTLIGHT

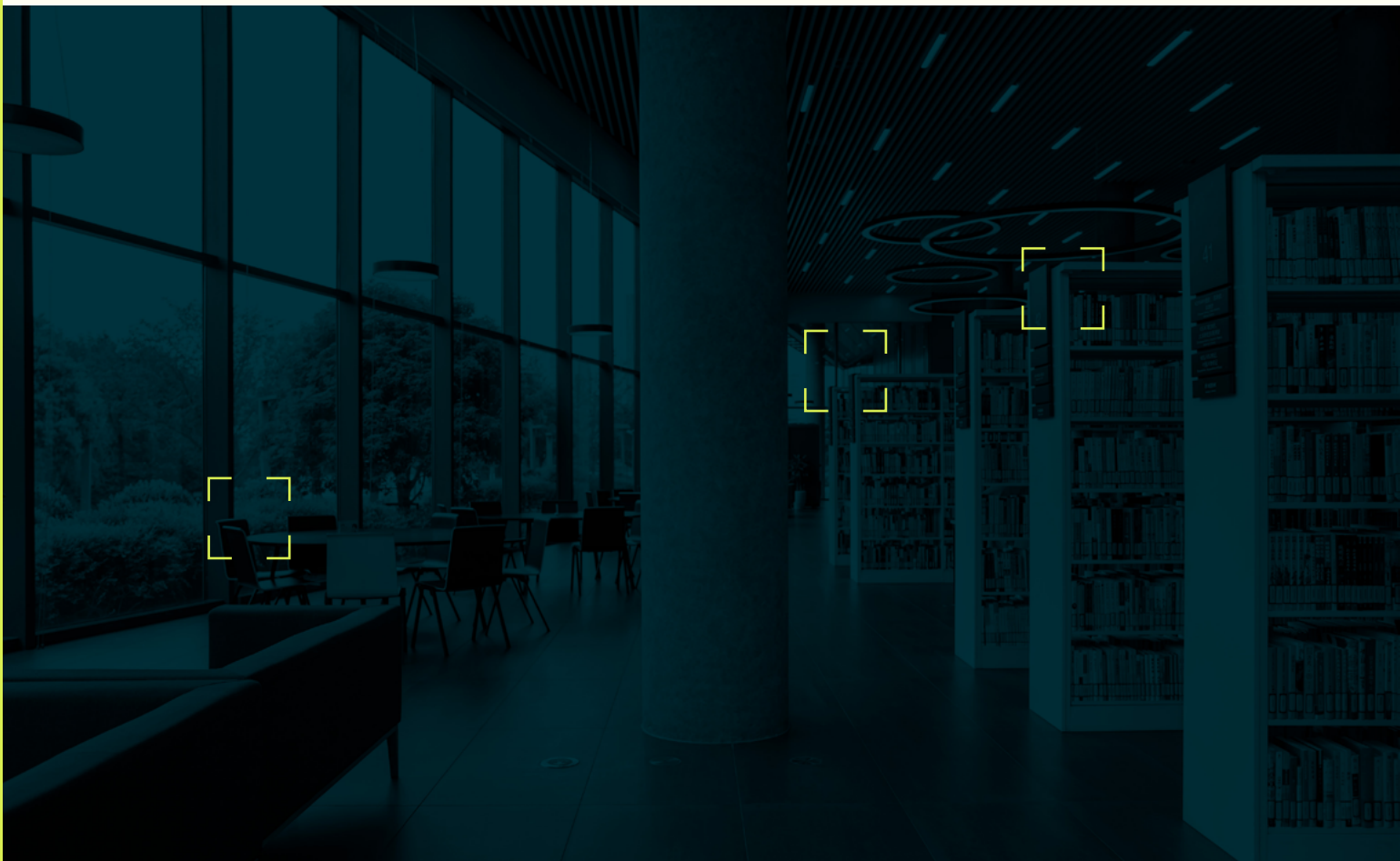
Broward County Public Schools — Data-Driven Management at Scale

Broward County Public Schools manages one of the largest K-12 facility portfolios in the United States: more than 32.3 million square feet assessed to date across a district-wide footprint.

Since January 2024, Mantis has provided end-to-end roof asset management through the Perform platform, integrated directly with the district's existing CMMS system. Results through 2025 include: 767 preventive maintenance and repair events completed, 272 warranty inspections completed, with assessments ongoing.

The program helps the district flatten capital expenditures over time by converting reactive emergency spending into planned, budgeted maintenance, which is the foundation of fiscally responsible facilities management.

2024–Present	32 Million	767	272
PROJECT DURATION	SQUARE FEET OF PROJECT SIZE	PREVENTIVE MAINTENANCE + REPAIRS TO DATE	COMPLETED WARRANTY INSPECTIONS



CHAPTER 3

Key objectives for K-12 facilities leaders

Strategy is only useful if it connects to the specific outcomes a facilities director is actually measured against. The following objectives represent the priorities that matter most in K-12 facilities management today, and the lens through which investment decisions should be evaluated.

Controlling costs while protecting the learning environment

The primary tension in K-12 facilities is real: cost pressure versus the obligation to maintain safe, functional, educationally effective spaces. Facilities directors who treat these as competing priorities often lose on both fronts. Those who treat them as aligned, through smart capital planning, proactive maintenance, and strategic energy management, tend to find that protecting the learning environment and controlling costs point toward the same initiatives.

The path to cost control runs through better data, not deeper cuts. A district that defers maintenance to save money this year is typically spending two to five times that amount in emergency repairs within a few years. A district that invests in condition-based capital planning protects both its buildings and its budget.

Reducing energy costs

Energy is typically the second-largest operating expense for a school district, after personnel. It is also one of the more controllable expenses, yet most districts manage it reactively, paying bills as they arrive, without a strategy to reduce consumption or optimize procurement.

Effective energy cost management operates on three levels simultaneously:

- Procurement strategy: securing competitive electricity and natural gas rates through reverse auction, fixed-rate contracts, or hybrid structures that balance price certainty with market opportunity
- Consumption reduction: LED lighting, HVAC optimization, building envelope improvements, and smart controls that reduce the kilowatt-hours a building actually uses
- Incentive capture: identifying and securing utility rebates and state incentive programs that reduce the capital cost of efficiency improvements, often covering 30 to 60 percent of project cost

Addressing only one dimension leaves significant savings on the table. A district that optimizes procurement but ignores consumption is reducing the price per unit while continuing to purchase too many units. A district that upgrades equipment without securing available incentives pays full price for improvements that a better-structured program would at least partially fund.

Improving the human experience: students, staff, and community

Facilities decisions affect three distinct groups with different but related needs: students, staff, and the broader community.

For students, the primary considerations are indoor air quality, thermal comfort, lighting quality, and acoustic performance, the physical conditions that determine whether a classroom is a place where learning happens effectively. Poor conditions in any of these dimensions suppress academic performance and increase absenteeism.

For staff, facilities quality is increasingly a recruitment and retention factor. Teacher shortages are acute across the country, and the physical environment of a school, whether it is hot in September, freezing in January, or plagued by air quality complaints, affects both the district's ability to attract talent and its ability to retain the people it has.

For community members, the condition of school buildings is a visible signal of public stewardship. Well-maintained facilities build community confidence and support for district initiatives. Neglected facilities raise questions about leadership and prioritization that follow a district into every bond referendum.

Meeting sustainability goals and regulatory requirements

Sustainability objectives and educational objectives are not in conflict. Many districts have found that they can pursue both through the same initiatives: reducing energy costs while improving building performance, cutting emissions while creating STEM curriculum opportunities, and meeting regulatory requirements in ways that also benefit students.

DC Public Schools' 'Roofs That Teach' program is one example of that alignment in practice: rooftop solar installations that generate renewable energy, reduce utility costs, and provide real-time monitoring data integrated into science curriculum. The sustainability investment also produced direct educational value.

Extending asset lifecycle and protecting capital investments

A school building is a multi-decade asset. Decisions made today about maintenance, repair, and replacement determine whether that asset performs well in 2035 or requires emergency attention by 2028. Lifecycle cost analysis, not just first cost, should drive capital planning decisions.

One example: a large school district north of Dallas scheduled four schools for full roof replacements totaling $3 million. Condition assessment and lifecycle analysis identified repair and restoration options that delivered equivalent performance outcomes at a total cost of $741,940, preserving $2.28 million for other district priorities. That kind of analysis depends on having an advisor who understands lifecycle economics well enough to question whether replacement is actually the right answer.

Facilities by space type: objectives, challenges, and solutions

K-12 facilities encompass a wide range of space types, each with distinct performance requirements and common failure points. The table below maps space types to primary objectives, typical challenges, and the Mantis services most relevant to each.

SPACE TYPE	PRIMARY OBJECTIVES	COMMON CHALLENGE	RELEVANT MANTIS SERVICES
CLASSROOMS	IAQ, thermal comfort, lighting quality	Aging HVAC units, inadequate ventilation, poor lighting	HVAC optimization, LED lighting, BMS controls
CAFETERIAS	Energy efficiency, equipment lifecycle	High energy use, grease exhaust systems, aging kitchen equipment	Energy audit, equipment lifecycle planning, LED lighting
GYMNASIUMS	Building envelope integrity, lighting	Roof leaks, high-bay lighting energy cost, HVAC sizing	Roofing assessment and replacement, LED high-bay retrofit
ADMINISTRATIVE OFFICES	Energy monitoring, occupant comfort	Inconsistent controls, after-hours energy waste	Building controls, power monitoring, BMS scheduling
PORTABLES / MODULAR BUILDINGS	IAQ, weatherproofing	Poor building envelope, minimal HVAC capacity, condensation	Condition assessment, HVAC evaluation, envelope repair
MECHANICAL / UTILITY ROOMS	Asset tracking, system efficiency	End-of-life equipment, lack of documentation, redundancy gaps	Asset management, Perform platform, HVAC/ mechanical optimization
ROOFTOPS / BUILDING ENVELOPE	Weatherproofing, solar potential, capital planning	Age, storm damage, deferred replacement, water intrusion	Roofing assessment and management, solar feasibility, capital planning
ATHLETIC FACILITIES / FIELDHOUSES	Envelope integrity, occupant comfort	Large uninsulated spaces, high HVAC load, aging roofing	Roofing, HVAC optimization, LED retrofit

CHAPTER 4

Infrastructure investments that deliver

Strategy and objectives are only as valuable as the investments that bring them to life. The following investment categories represent the primary opportunities available to K-12 districts, sequenced not by cost or complexity but by the order in which they tend to deliver returns.

Energy planning: start with the bill before you touch the building

Most districts address energy costs by replacing failed equipment. Understandable but potentially ill-fated without getting the full picture first. Districts that achieve meaningful reductions in energy expenditure typically begin upstream, with an advisory engagement that examines procurement strategy, utility rate structures, consumption patterns, and available incentive programs before a single piece of equipment is specified.

Energy advisory services include customized electricity and natural gas procurement through competitive reverse auctions, utility bill auditing to identify billing errors and rate optimization opportunities, and incentive identification that maps available rebate programs to a district's specific project pipeline.

For districts considering capital efficiency projects, this sequence matters. Utility incentive programs can cover 30 to 60 percent of eligible project costs, but only if those programs are identified and incorporated into project design before construction begins. In one higher education project, utility incentives covered 60 percent of the total project cost through this approach. That outcome depends on treating incentive capture as a project objective from the start, not as a box to check at the end.

Roofing and building envelope: the foundation of everything else

The building envelope, including roofs, walls, windows, and penetrations, is the first line of defense against energy loss, water intrusion, and indoor air quality degradation. A roof failure is not simply a maintenance event. Water intrusion damages HVAC equipment, destroys insulation, degrades structural components, creates mold conditions, and disrupts the learning environment for weeks or months while remediation occurs.

Proactive roof asset management, through condition assessment, planned replacement cycles, and storm damage documentation, reduces the total cost of ownership compared to reactive management. Districts with documented condition data also tend to recover faster from weather events: insurance claims are better supported, replacement scopes are more accurately defined, and settlement timelines are shorter.

K-12 roofing projects in Mantis' portfolio range from a $10.5 million comprehensive roof replacement across 330,000 square feet at a large high school in West Texas, to a $3.4 million full-depth replacement with parapet reconstruction at a DC Public Schools elementary, to targeted repair scopes at individual schools that extend asset life and protect manufacturer warranties. In each case, the starting point is a vendor-agnostic condition assessment that informs what actually needs to be done.

HVAC optimization and indoor air quality

HVAC is among the highest-priority mechanical systems in a K-12 building because it affects every occupant, every day. Aging HVAC systems are often both inefficient and unreliable, consuming more energy than necessary while delivering less comfort and lower air quality than current standards require.

Replacement is not always the right answer. In many cases, a combination of controls optimization, preventive maintenance, and strategic component replacement can extend system life by five to ten years while improving both performance and efficiency.

Advanced controls, including occupancy-based scheduling, variable frequency drives, and demand-controlled ventilation, can deliver substantial energy reductions without full equipment replacement.

When replacement is warranted, combined roof and HVAC projects make good use of summer project windows. Mobilization costs are shared, disruption is consolidated, and the resulting building performs as an integrated system. One example: an 80,000-square-foot elementary school in the Texas Panhandle combined roof and HVAC replacements into a single project, completed on time and on budget with a 20-year manufacturer's warranty.

Building controls and smart systems

Building Management Systems (BMS) and smart controls allow facilities teams to monitor and control HVAC, lighting, access control, and other building systems from a single platform, across all buildings in the portfolio.

For K-12 districts, the scheduling opportunity is significant. School buildings are unoccupied on evenings, weekends, holidays, and summers, periods that collectively account for more than half of every year. Buildings that continue to condition unoccupied space at occupied-hours levels waste substantial energy. Intelligent scheduling, occupancy sensors, and demand-based controls systematically address that waste.

Beyond energy savings, BMS and power monitoring systems enable predictive maintenance: detecting equipment anomalies early, before they become failures. For a district managing dozens of buildings with a small facilities team, this capability is the difference between preventing a crisis and responding to one.

Solar and renewable energy

For districts with favorable roof conditions, available incentive programs, and the appetite for a longer-horizon investment, rooftop solar can deliver compelling long-term economics while advancing sustainability commitments and creating educational value.

The DC Department of General Services and DC Public Schools program with Mantis Innovation offers a reference point for what K-12 solar investment can look like at scale. Across more than 65 sites, the program installed 15 megawatts of rooftop solar, achieving 20,000 metric tons of CO_2 reduction. The 'Roofs That Teach' component integrated real-time solar production monitoring into DCPS science curriculum, giving the infrastructure investment direct classroom value.

Mantis supports the full solar project lifecycle: feasibility analysis, procurement management, installation oversight, and ongoing performance monitoring. For districts navigating the economics of solar investment, Mantis' energy advisory team can also identify renewable energy credits, green energy purchasing options, and state and federal incentive programs that improve project returns.

Asset management and the perform platform

Every investment category described in this chapter delivers better outcomes when it is grounded in comprehensive asset data. Decisions about which roofs to replace, which HVAC systems to upgrade, which buildings to prioritize for controls investment: all of these decisions are only as good as the underlying condition and lifecycle data.

The Perform platform connects individual investments into a coherent portfolio strategy: asset inventories, condition assessments, lifecycle projections, work order tracking, and capital planning models, all in one system, with integration into a district's existing CMMS where applicable.

Broward County Public Schools illustrates the value at scale. The district's Perform implementation, integrated with its existing Maximo system, gives facilities leadership visibility into asset condition and maintenance history across a 32.3 million square-foot portfolio. That visibility supports defensible capital planning, board presentations, and the shift from emergency spending to planned, budgeted investment.

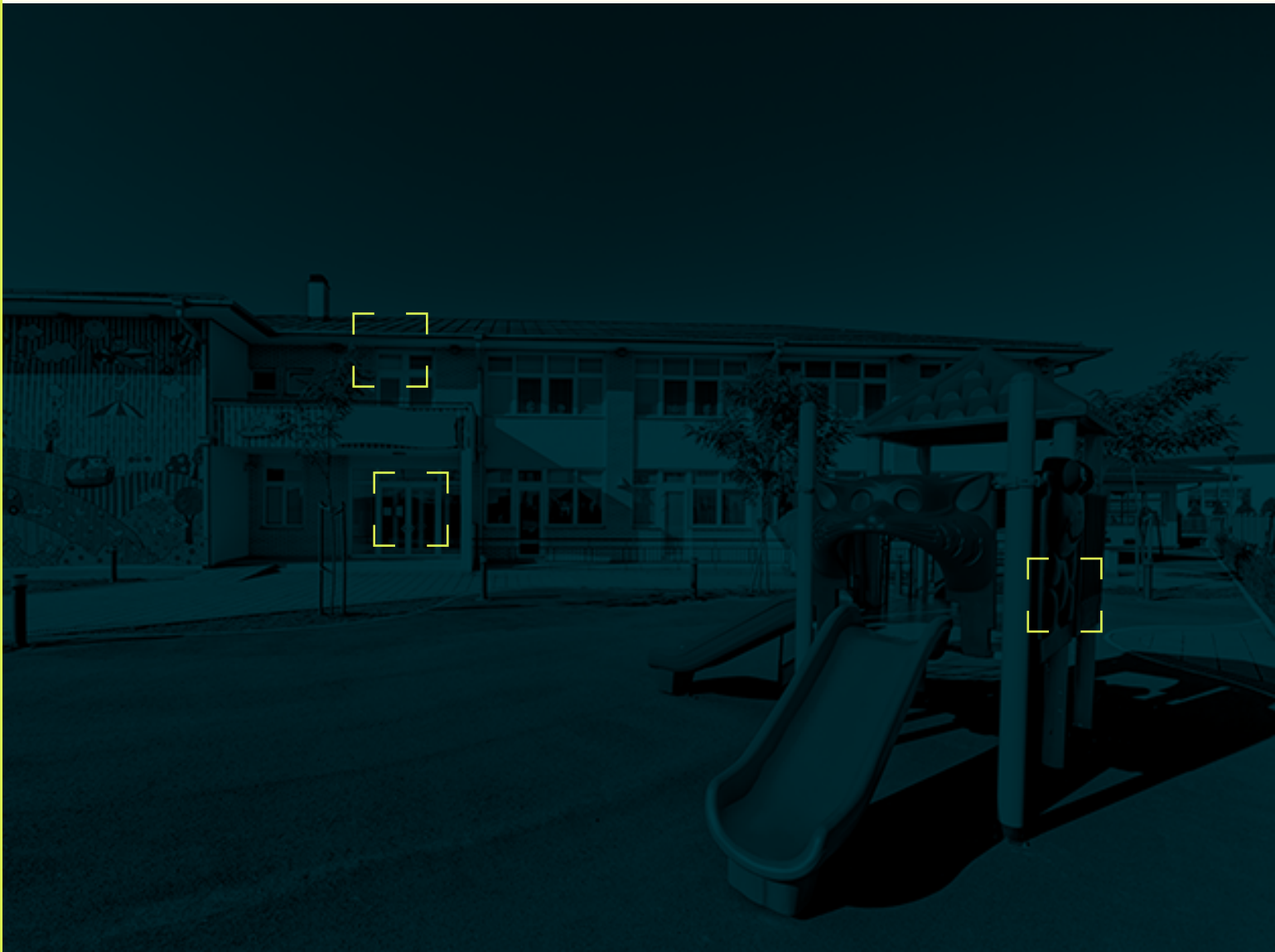
MANTIS PARTNER SPOTLIGHT

A DC Department of General Services / DC Public Schools — ‘Roofs That Teach’

When Washington, D.C. committed to a 20% carbon reduction target for city buildings, the DC Department of General Services and DC Public Schools worked with Mantis Innovation to develop a comprehensive sustainability program.

Across 65+ DCPS sites, the program installed 15 megawatts of rooftop solar, achieving 20,000 metric tons of CO_2 reduction. The ‘Roofs That Teach’ initiative connected live solar production monitoring data directly into DCPS science curriculum, giving students access to real-time data from their own school buildings. The program continues to expand.

65+	15 MW	20k
DCPS SITES	OF ROOFTOP SOLAR INSTALLED	REDUCTION IN METRIC TONS OF CO_2



CHAPTER 5

The road to high-ROI optimization

01 START WITH THE DATA

02 PLAN IMPROVEMENTS — BUILD A BUSINESS CASE THAT BOARDS WILL FUND

03 TIME IT RIGHT — WORK WITH THE SCHOOL CALENDAR

04 EXECUTE AND TRACK — DOCUMENTATION IS HALF THE JOB

05 TELL THE STORY — FACILITIES MANAGEMENT IS A PUBLIC TRUST FUNCTION

Every district starts from a different place. Some have sophisticated asset management systems and recent condition data. Most do not. Some have energy programs in place. Many pay their utility bills and hope for the best. The following five-step framework is designed to meet districts where they are, providing a practical path toward better facilities and energy performance regardless of starting point.

01. Start With Data — Know What You Have

You cannot prioritize what you have not measured. The first step in any facilities improvement effort is a comprehensive condition assessment of your portfolio: building envelopes, mechanical systems, electrical infrastructure, and existing building controls. For most districts, this process surfaces surprises: equipment operating well past useful life, deferred maintenance that has compounded silently, and risk concentrations that are invisible in the capital budget.

The output of a thorough assessment is more than a list of problems. It is a prioritized inventory of assets with condition scores, lifecycle projections, and recommended action timelines, the foundation that makes investment decisions defensible to boards, auditors, and community members. For K-12 districts, this data also supports bond referendum presentations and insurance documentation.

A Texas Panhandle school district's ongoing relationship with Mantis, active since 2017, reflects this data-first orientation. Condition assessments conducted across all 45 district facilities have informed capital planning decisions, supported storm damage insurance claims, and provided the documentation foundation for multi-year improvement programs that deliver consistent, predictable outcomes.

02. Plan Improvements — Build a Business Case That Boards Will Fund

With condition data in hand, the next step is building a multi-year capital improvement plan that prioritizes investments by ROI, risk level, and urgency. For K-12 districts, this plan must be more than an engineering document. It should function as a business case that school boards can act on: framed in terms of cost avoidance, energy savings, risk reduction, student experience improvement, and community impact.

Repair-versus-replacement analysis is a critical tool in this phase. The intuitive answer is often to replace rather than repair, but the data-supported answer is frequently different. One North Texas district documented $2.28 million in savings: four buildings scheduled for $3 million in full replacements, redirected to repair and restoration scopes that delivered equivalent outcomes for $741,940.

A well-constructed capital plan also incorporates energy advisory intelligence, identifying the utility incentive programs and procurement opportunities that can reduce net project costs, and timing investments to align with incentive availability and bond referendum cycles.

03. Time It Right — Work With the School Calendar

For K-12 districts, timing is not a scheduling preference; it is a fundamental project constraint. Summer windows are typically eight to ten weeks long, shared across every capital project in the district. Work that spills into the school year requires extraordinary coordination with building occupants, careful phasing, and explicit safety protocols for occupied environments.

A facilities partner who understands the school calendar builds it into project planning from the start, not as a constraint to manage around but as the structure within which every project is designed. That means phasing complex projects to make full use of summer windows, sequencing multi-building programs to avoid overlap conflicts, and communicating clearly with principals and custodial staff throughout execution.

One project in the Texas Panhandle illustrates what disciplined scheduling produces: a 68,000 square-foot middle school roof replacement combined with the repair and replacement of 39 HVAC units, completed on time, within budget, with a 20-year manufacturer warranty.

04. Execute and Track — Documentation Is Half the Job

Execution without documentation is half the job. Every project should generate records that feed back into the asset management system: updated condition scores, warranty documentation, photographic records, and post-installation performance data. This institutional memory protects the district's capital investments and provides the evidence base for future planning.

For energy efficiency projects, post-installation measurement and verification is essential. It validates savings claims, supports utility incentive reconciliation, and provides the performance narrative that boards and community members need to see. Telling a school board that a project will save $200,000 per year is a projection. Showing them 12 months of metered data that confirms it is proof.

Broward County Public Schools' ongoing Perform program illustrates what this looks like in practice: 767 preventive maintenance and repair events tracked, warranties monitored, and capital planning projections updated continuously as condition data accumulates. The portfolio does not just get maintained; condition data accumulates and planning improves with every cycle.

> *"Facilities management is not a back-office function. It is a public trust function. Tell the story of what you are doing, and why it matters, every chance you get."*

05. Tell the Story — Facilities Management Is a Public Trust Function

The five-step framework closes with the step most facilities directors have never been taught: communication. School boards, taxpayers, and community members need to understand the value of facilities investments, not because they require educating but because their support is what sustains the investment programs that benefit students.

The data generated through Steps 1 through 4, including condition scores, energy savings, cost avoidance calculations, and project completions, is the raw material for public communication. Districts that tell this story consistently build the community trust needed to pass bond measures, maintain public confidence, and attract the teachers and administrators who want to work for a district that takes care of its buildings. DC Public Schools' 'Roofs That Teach' program is one example of how that story can take shape. A solar installation became a curriculum asset, a demonstration of responsible stewardship, and a reference point that other districts have since studied. It began with the same steps described in this framework: data, planning, timing, and execution.

Where to Start

Every district's starting point is different. The following entry points are designed to meet you where you are:

- **Facilities Portfolio Review:** a structured conversation about your portfolio's condition, capital planning priorities, and where the most useful opportunities are.
- **Condition Assessment:** a comprehensive physical assessment of your building envelopes, mechanical systems, and existing controls infrastructure, delivered as a prioritized asset management report.
- **Energy Advisory Engagement:** a review of your utility procurement strategy, current rate structures, consumption patterns, and available incentive programs, identifying the energy cost reductions available to your district before any capital project begins.

Learn how to advance your mission with facility + energy optimization by contacting a Mantis Innovation expert today.

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