



# 6 CASE STUDIES ON CUTTING COST, STREAMLINING SCHEDULE AND BUILDING SMART

# 6 CASE STUDIES ON CUTTING COST, STREAMLINING SCHEDULE AND BUILDING SMART

For us, it's simple: The job is the boss. This means we find smart design solutions to meet each client's goals, while fighting to cut costs and stay ahead of schedule.

We get the job done. Whether it's a small high school or a multi-million-dollar distribution center, we think of each job's challenges as an opportunity to build smart. It's one reason why 84 percent of our business comes from return clients. And in an industry as competitive as construction, clients only return when you can take the tough jobs and get them done right, on-budget and on-time. Every time.

When we say things like, 'Build smart,' or 'The job is the boss,' we aren't just turning phrases. It's how we run things at The Korte Company.

The following case studies show you how we approach tough problems, working hard to find the best-value solutions for cost, schedule and constructability.



# TABLE OF CONTENTS

EDWARDSVILLE HIGH SCHOOL .....	4
U.S. POSTAL SERVICE – DALY CITY INTERNATIONAL SORTING CENTER .....	9
FORT LEE .....	15
U.S. POSTAL SERVICE – SPOKANE DISTRIBUTION CENTER .....	19
GRANITE CITY HIGH SCHOOL .....	23
THE HERSHEY MIDWEST DISTRIBUTION CENTER .....	27



# EDWARDSVILLE HIGH SCHOOL



# PRIMING EDWARDVILLE HIGH FOR GRADE A LEARNING WITH AWARD-WINNING CONSTRUCTION

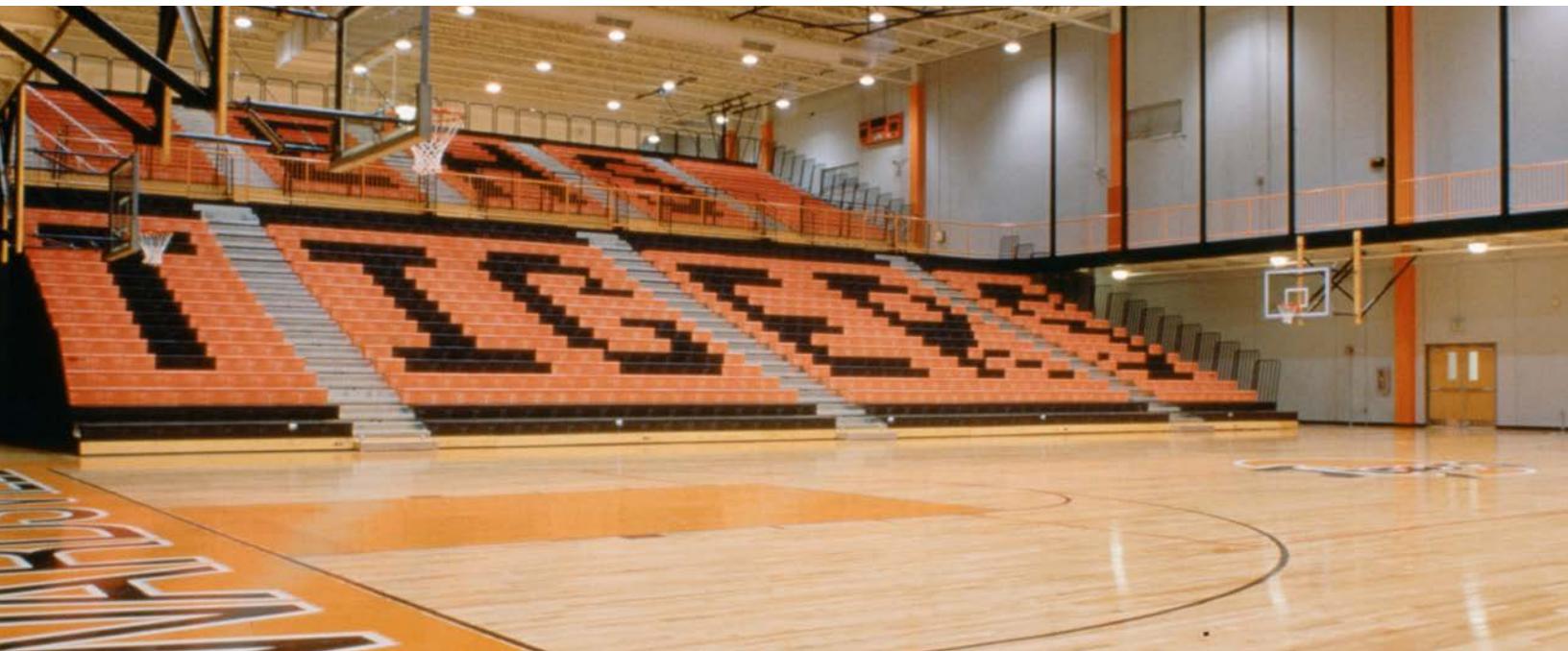
It's been said many times before — our children are our future. After all, they're the ones who'll have the tall task of building a better world someday. And while many smart people have big disagreements on how to best teach arithmetic — Common Core, anyone — we can all agree on one thing: building world-class schools certainly won't hurt students' chances.

But just what does that look like, and how do you do it?

Well, school construction has many demands. Parents expect great learning environments. Administrators watch costs, security, quality and schedules. The community wants something that attracts residents. And the kids, well, there's the important matter of the playing fields. To get everyone on the same page takes experience, commitment, passion and something we learned when we were in school ourselves — teamwork.

When Edwardsville High School in Edwardsville, Illinois sought to build a new high school, the job took all that and more, demanding strong solutions for some of the toughest project problems — an over-budget start, bad press and accommodations for advanced learning technologies.





## MAKING HEADLINES FOR ALL THE WRONG REASONS

It's a rare occasion that we don't come into a project from the start, but in this case, we enter the story a little later than usual. By the time the Edwardsville School District chose The Korte Company as the second construction manager for its new high school, the project was already behind schedule, over budget and a source of criticism from the local papers. Needless to say, the stakeholders were none too happy with the start of the project, and we were called upon to steer it into the clear. Yep, we like the tough jobs.

## RIGHTING THE SHIP WITH BEST-VALUE SOLUTIONS

As with many of our projects, we started with our most powerful tool: a good set of ears. The Korte Company immediately hosted a collaborative brainstorming session that included the school district representatives. This conference developed more than 400 value engineering ideas that saved \$5 million right off the bat. Just as important, it set the stage for a team effort that saw a shared vision forge the project forward. Within one month, these ideas found their way into the project, and a short time later, the project was completed. But let's not get ahead of ourselves.



## GETTING THE JOB DONE AND DELIVERING EXCEPTIONAL RESULTS

The School District had specific phasing requirements that required us to complete the educational wings first, the gyms second and finally the auditorium. This was done in an effort to allow the students to access these areas and not disrupt normal school activities. As a result of the cost savings the project team delivered, the auditorium was added as the third phase.

The result was an award-winning school with:

- A commons area
- A science center
- Art rooms
- Band rooms
- A 300-seat performance theater
- A 3,500-seat indoor athletic facility with a running track, weight training room and aerobics room
- Modern classrooms all wired to handle the latest educational technology

We're proud to say the students were just as impressed as the faculty and administrators.



## SOME NEW HARDWARE ON OUR SHELF

The Edwardsville High School project caught the attention of our peers and was recognized with a Construction Industry Cost Effectiveness Award for implementing cost-effective principles that incorporated owner involvement, innovation, modern management systems, new technology, team building and personnel training.

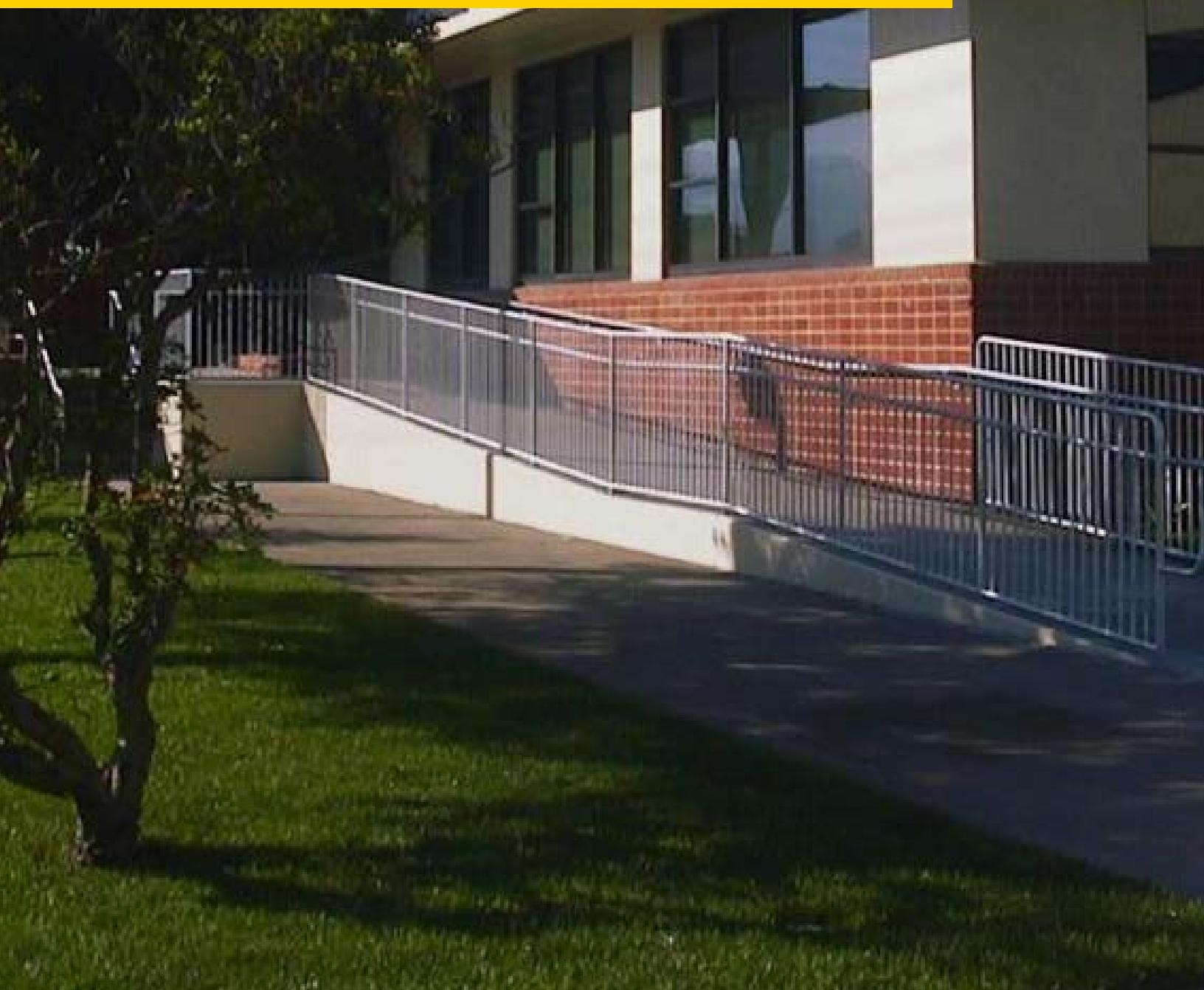
The project also received a Reader's Choice Award for the finest example of craftsmanship and teamwork and, more specifically, the school was built to take advantage of modern electronic teaching and communications technology.

**“The architects and Korte worked well together. That's not to say they always agreed; they didn't. And that's part of the value that you're getting from a Construction Manager — looking for areas where a building can be improved without sacrificing quality, can be improved from a cost perspective. And certainly we saw example after example of that.”**

*— Jim Speciale - President, Edwardsville School Board*



# **U.S. POSTAL SERVICE – DALY CITY INTERNATIONAL SORTING CENTER**



## USPS DALY CITY, CA — BREAKING PARADIGMS

The United States Postal Service had six months to get their International Sorting Center (ISC) up and running to support their San Francisco operations. After the original land negotiations fell through, the USPS was in need of a facility, which they found with the help of a developer. While the 250,000-square-foot building met their size requirements, it had definitely seen better days.

Or as we like to say, it came with a host of opportunities.



## NEW LIFE FOR AN OLD BUILDING

Originally a cork and seal manufacturing plant, the building was located on the south side of San Francisco, just 1.25 miles from the San Andreas Fault. The 40-plus-year-old structure required a host of repairs and modifications to meet current code requirements. Holes in the roof, broken windows and years of neglect had taken its toll. Water damage had ruined the insulation, which needed to be replaced. Lead and asbestos, which was found throughout the entire facility — even in the window caulking and structural steel — required extensive abatement.

The roof, ceiling and walls had to be systematically cleaned to restore the integrity of the heavily weathered building. Large portions of the roof were missing in areas, or so damaged, they needed to be replaced. A seismic rehabilitation, including structural seismic modifications, required rehabilitating both the horizontal steel trusses and vertical steel columns. Additionally, permits were needed from the city in order for the project to move forward. Historically, these could take months to acquire, time the USPS simply didn't have.

## SIX MONTHS TO GO

We had six months to make this work. It was our first project in California, and our first with a developer. We had no idea what other challenges might surface with this type of a high-risk project. In other words, it sounded like our kind of job.

We've always been up for a test. Breaking paradigms and facing obstacles head-on has defined us and helped us deliver the impossible.

We had the right design, we had the right plan, and most importantly, we had the right team, fresh off another USPS project in Boise, Idaho.



## THE DEMANDS OF THE JOB

During those six months, the Daly City USPS project became the Korte team's obsession. Every waking moment was spent on the site or thinking about the trials just around the next corner. The asbestos and lead were abated, the roof was completed, and insulation was replaced. Structural deficiencies were corrected with a seismic retrofit solution that brought the existing columns and joists up to current code requirements.

As if the project itself wasn't challenging enough, during an excavation of the existing foundation, human bones were unearthed. After contacting the local experts, it was discovered that an ancient Native American village once stood close to where the bones were located. A Shaman was contacted to advise next steps, which included the spreading of tobacco leaves over the burial site.

The remains were studied, and it was determined that they belonged to a woman and her child. An investigator representing the local tribes was immediately called to the scene and began the sensitive process of relocating the remains to their final resting place. The relocation of Native American remains can sometimes take weeks, if not months. But because of the respective actions of the team, the woman and her child were carefully moved to their final resting place, just a few days after being discovered.



## THE JOB IS STILL THE BOSS — JUST BIGGER

Right around the same time as the seismic retrofits, a slight labor disturbance, new roof and the relocation of the remains, the United States Postal Service offered up another challenge. Along with the original International Sorting Center (ISC), their plans changed, and they needed us to design and construct an Air Mail Center (AMC) within the same facility — almost \$3 million of additional scope. And it had to be completed without adding any extra days to the already expedited construction schedule.

The additional scope included a particularly complex piece of equipment, large ball-bearing mats, which allow large freight containers weighing thousands of pounds to be moved with a push of a hand. It was our first project to include this type of equipment.





## 5 MONTHS: 11 DAYS

The Daly City International Sorting Center and Air Mail Center was delivered to the USPS exactly 19 days ahead of schedule. This was an incredibly aggressive construction schedule, even for us. And it proved we could deliver quality, with minimal callback. Read: only \$8,000 in total on a \$22 million project. Additionally, we kept a tight safety protocol and performed regular testing. In fact, the project saw zero accidents or safety incidents.

As a direct result of the work we completed, the Daly City ISC/AMC has survived earthquakes of 5.1, 5.6 and 6.0 magnitudes. In August 2014, the strongest earthquake in 25 years struck Northern California's Bay Area. The facility remains unscathed.



# **FORT LEE – ARMY LOGISTICS UNIVERSITY ACCOMMODATIONS**

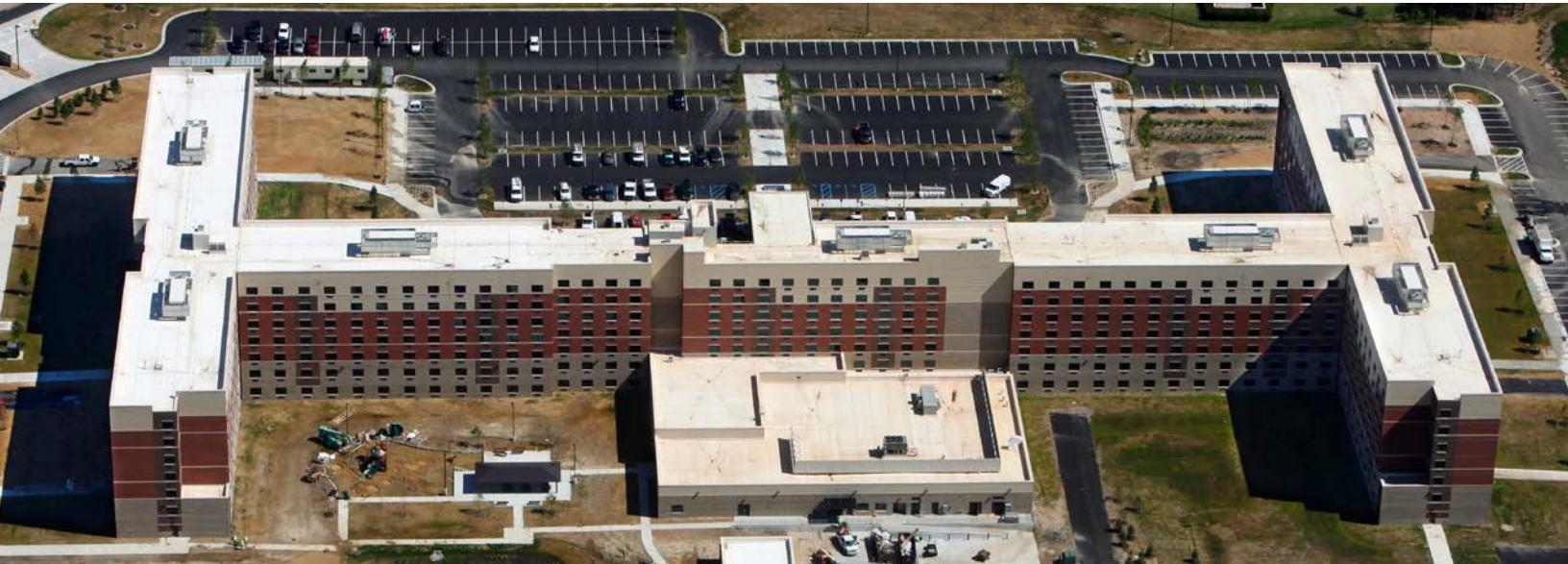


# BUILDING LUXURY ACCOMMODATIONS ON A TIGHT BUDGET FOR OUR NATION'S FINEST

Fort Lee in Virginia is home to the Army Logistics University. For the men and women of our armed forces studying there, it's a home away from home. The U.S. Army's Morale, Welfare and Recreation (MWR) Command, tasked with ensuring a high quality of life for the armed forces, saw the need to build improved on-base accommodations for those attending the Army Logistics University.

## THE DEMANDS OF THE JOB

The military operates on tight, transparent construction budgets, with the highest building performance standards and energy efficiency requirements built into every project. Each facility must meet US Green Building Council (USGBC) LEED Certification criteria and stand up to a lengthy lifecycle (typically 50 years), while providing the flexibility to accommodate a range of future uses. But this \$86 million project placed even more demands on our project team. Our largest DOD project to date, the original request for proposal (RFP) suggested a highly aesthetic, 15-story building that promoted a relaxing experience. A tall order on a short budget.

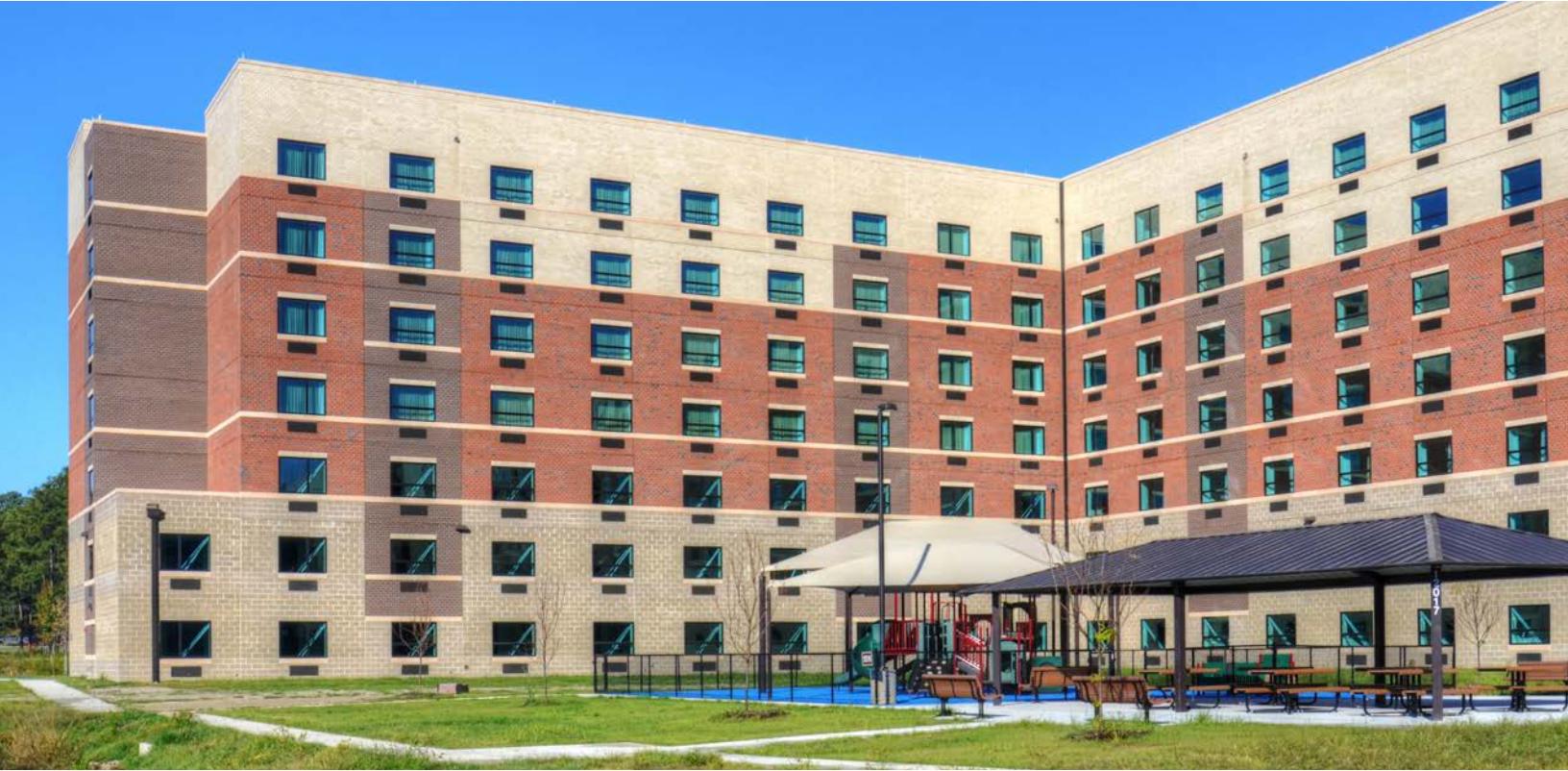


## THINKING OUTSIDE THE BID SOLICITATION

No building at Fort Lee rose much higher than three stories, and the base's fire department couldn't service a 15-story high rise. So we evaluated the option of a shorter building and found major savings as well as aesthetic enhancements. We proposed and built a 7-story lodge that minimized ground improvement costs and allowed for more cost-effective building systems. With the new footprint, the project team could use prefabricated, light gauge metal framing that streamlined the construction schedule and eliminated the need for separate metal studs on the building's exterior and interior load bearing walls.

The result was increased flexibility to invest in visually pleasing aesthetics. And the final design complements the base architecture to form a coherent campus with the adjacent Army Logistics University. The site development even affords more space for storm water and convenient parking, with a pleasant walking path to the Army Logistics University.





## GETTING THE JOB DONE

When awarded the project in 2010, we got to work, assembling a strong, multi-disciplined team to get the job done. Using an innovative Design-Build approach, we identified best-value solutions that allowed us to meet and exceed all of the military's requirements, including a tight budget. The end result is a 1,000-room lodge that provides our military with comfortable accommodations and compares to luxurious, private hotels in the area. We completed the project on-time, on-budget and to LEED Silver standards.





# **U.S. POSTAL SERVICE – SPOKANE DISTRIBUTION CENTER**

# BUILDING EFFICIENT LOGISTICS FOR THE U.S. POSTAL SERVICE

The past 20 years have seen an explosion of new businesses and products, increasing the need for streamlined logistics. Never in our history has it been so important that packages arrive on time. To keep up with demand, improve delivery and achieve better efficiency, the U.S. Postal Service (USPS) rapidly built and expanded dozens of state-of-the-art distribution centers nationwide. We've designed and built more than 40 of them. As part of their broader construction efforts, the USPS needed a processing and distribution center to assist in package delivery to the Pacific Northwest. And they selected us to design and build a new one at the International Airport Business Park in Spokane, Washington.

## THE DEMANDS OF THE JOB

The USPS absolutely requires total efficiency and streamlined logistics to meet mail distribution demands. Packages and mail must rapidly move in and out of facilities, with the systems and technology in place to ensure they reach the right destination. Due to the urgent nature of mail delivery, the high performance demands on their facilities and a tight, transparent budget, the USPS required a fast-track project with hard schedule constraints and a minimal cost.



## GETTING THE JOB DONE

To take on a project of this magnitude, we used an interactive and cooperative Design-Build approach. We hand selected a multi-disciplined project team that included design, engineering and construction professionals who partnered from concept to completion to identify and overcome project challenges.

As we started the job in early fall, and it called for a rapid, 1-year project schedule, we had to carefully coordinate the project so crews could work throughout the winter without weather delays. Given the climate of Spokane, Washington, the job called for us to pour the foundation, build the walls and install the roof before winter so the team could finish the facility indoors. Early in the project, we encountered several unique challenges. First, the deep soil had a surprise in store — boulders the size of cars that our team had to clear with specialty equipment. Next, we presented the USPS with a roofing option they hadn't considered, as the previously specified selection wouldn't properly adhere when the weather grew colder.

We had much of the building elements pre-fabricated off site so we could overlap elements of construction for a fast-track project delivery. Perhaps the most important element of the project, the facility ties directly into the airport so the USPS could move mail straightaway from the airport and into their operation. Throughout the process, we worked closely with the airport and FAA, building with the right paperwork and coordinating our high crane with the airport's timing needs.





## RESULTS

Through a collaborative team approach, we provided best-value solutions and a successful job, as measured by a range of key performance indicators, from cost and schedule control to safety and quality assurance.

The completed processing and distribution center covers 352,000 square feet and houses bulk mail and airmail operations. It also contains a workroom, offices, administrative areas and mechanical mezzanines. The building was the second to use a new USPS design prototype for its processing and distribution centers — a steel structure with a split-faced block exterior and a prefabricated metal panel border along the top of the building.

Our project team delivered the project 68 days ahead of schedule, so the USPS then requested we build its Bulk Mail and Tray Mail Conveyor System. Through an aggressive procurement plan and round-the-clock installation, we completed the Bulk Mail System and Tray Mail System 18 days ahead of schedule. In total, the project came in at \$27.8 million — right on budget.



# GRANITE CITY HIGH SCHOOL



## SMART SOLUTIONS AND SHEER DETERMINATION: PUSHING THROUGH THE LIMITS OF PROJECT SCHEDULE

Granite City High School, home to the Warriors of Granite City, Illinois, had run on coal power and old building technologies since its original construction in 1921. The facility badly needed modernization. When the district's leaders kicked off their project, they first hired an architect before bringing in The Korte Company as construction manager to work with the architect to assist in developing the scope of work, project schedule and constructability. But major design failings put the project behind schedule and nearly doomed it from the start.



## A SLOW START TO DESIGN PUT THE JOB IN JEOPARDY

From the onset of the project, the architect struggled to design the school and required tight oversight. The design process lagged behind, throwing the project timeline in jeopardy. In fact, the start of construction was delayed by a full year, turning what was originally planned as a 30-month construction timeline into an 18-month timeline. Another issue was the lack of accurate and complete site analysis, which left many ambiguities in the original design. When it came time to bid out work to trade contractors, the bids came close to the budget, but it was clear that change orders and unanticipated costs would add up and become a major project hurdle. Ultimately, the school district decided to bring in a different architect to improve the design. The new architect, a former member of Korte Design who started an independent firm, worked closely with us to produce a superior design that met the budget. But the construction timeline was already truncated, and the job had other challenges in store for us too.

Due to the age of the school building, it required significant demolition and abatement. And the project team had to accommodate an active school environment that taught close to 1,000 students. Simply put, this was no picnic. But at The Korte Company, we like the tough jobs.





## SOLUTIONS AND RESULTS

To complete the project in time, we adapted the construction sequence to fit a more aggressive schedule, working with the school to build swing spaces. These areas would house temporary classrooms during the school year, allowing us to work on more areas simultaneously to meet the new, 18-month timeline. During the summer, we delivered the necessary demolition and abatement, replacing an old smokestack and retro coal boiler with a modern HVAC system. We had the project team abate the pipes and old mastic tile floors, eventually implementing new mechanical and electrical systems. We were able to downsize the mechanical area as well as reduce the space of an old shop room, transforming much of it into a new media center that served as swing-space classrooms during the next school year. Our project team then renovated about 50 classrooms in the two-story building during the school year, installed a new roof and delivered tuckpointing, an upgraded exterior and new windows.

In short, we solved the project and facility problems to get the job done — on-budget and on-time. The school district was pleased. And years later, they turned to The Korte Company again, this time to overhaul the nearly century-old foundation.



# HERSHEY



# BUILDING CORPORATE VISION INTO THE HERSHEY MIDWEST DISTRIBUTION CENTER

The Hershey Midwest Distribution Center receives, inventories and ships \$1 billion of perishable chocolate every single day — all while embodying The Hershey Company's corporate vision.

## THE JOB DEMANDED SMART SOLUTIONS

An ambitious undertaking to say the least, constructing this facility called for 1.1 million square feet of warehouse and office space. The warehouse environmental criteria required a constant 60-degree temperature and a 50 percent relative humidity level. Logistical operations required warehouse structures capable of supporting massive loads while still keeping areas open for high-speed forklift traffic to move products. The Hershey Company needed emergency operational capabilities and safety systems to protect the \$1 billion of chocolate in the facility in a given day.

Completing a job of this magnitude required a Design-Builder that could coordinate teams of engineers, subcontractors, architects and consultants — one with expertise to deliver an integrated system of Tilt-Up concrete and insulated metal panel construction.



## COMPLETING THE JOB

Through the process of Interactive Collaboration, The Hershey Company's leadership worked in coordination with The Korte Company to define the requirements of the job. With the critical information in mind and open communication between all parties, our Mechanical Design-Build teams reviewed the preliminary layout provided by the owner and their consultants and went to work.

The result was a more efficient cooling system that eliminated nearly 20 percent of the rooftop units that were originally prescribed. The reduction of rooftop units also translated to long-term energy savings and a lower operating cost for the facility.



## REDUCING RISK

By working closely with a comprehensive commercial risk company, we were able to create efficiencies in risk management. A partnership with Factory Mutual facilitated Design-Build solutions that ultimately decreased long-term insurance costs. In other words, Hershey achieved notable insurance savings through better Design-Build solutions.

One of those solutions included Maximum Foreseeable Loss (MFL) firewalls. To minimize Hershey's risk, the overall building was subdivided into three separate sections by using double 3-hour fire rated MFL walls. The MFL walls were designed to allow the collapse of the entire structure adjacent to the wall without affecting the structural integrity of the remaining wall. The team also provided an independent fire protection system, including two separate 250,000-gallon water tanks as well as an emergency system to provide backup power.



## MAXIMIZING WORK-FLOW

To maximize work-flow throughout the facility, we teamed with owner-contracted consultants to design a dynamic floor plan. And we constructed it to minimize product travel and handling. Additionally, we coordinated rack and dock equipment through owner-contracted vendors and installers, interfacing third-party timetables with the master construction schedule.

Specially formulated Type K shrinkage compensating cement was used in the bay areas to support designated high traffic and load specifications, while trap-rock-hardened concrete was used to handle the immense rack loads throughout the other areas of the facility.





## BUILDING FOR THE LONG-TERM

Hershey had a corporate vision to create an efficient, state-of-the-art distribution center. The project is a lasting example demonstrating how a corporate vision can drive design and construction solutions. The bottom line on this Design-Build project was improved by project efficiencies. And long-term efficiencies are delivering cost savings throughout the life of the building and the operational functions it serves.

Hershey is not alone in their pursuit of long-lasting efficiencies as a key component of their corporate vision. Other clients of The Korte Company, including the United States Postal Service, The Walgreen Co. and many others, share similarities in their corporate visions. We've partnered with them to implement Design-Build solutions that serve their best interests — time and time again.



# MORE ABOUT THE KORTE COMPANY

At The Korte Company, finding the “better way” drives us. Bring us your budget constraints, tight schedules and difficult design needs. Because we like the tough jobs, and have the [project portfolio](#) to prove it.

[Request a consultation](#) today to learn more about what we can do for your project. Or, give us a call at 618-654-8611. We look forward to seeing what challenges — or as we see them, opportunities — you bring our way.