STRATEGIC ARCHITECTURAL DESIGN: HOW TO MEET BUSINESS GOALS AND MAXIMIZE ROI

KORTE
build smart.™

TABLE OF CONTENTS

OVERVIEW

Architectural design has long been associated with great monuments, iconic structures and artistic endeavors. But modern commercial design is much more than simply an exercise in the latest aesthetics and artistic trends. It's a unique blend of strategy, innovation, problem solving, corporate vision and the nuances of a company's aesthetic. Today's construction projects have greater complexity than at any time in human history. They demand better designs — smarter designs.

Like many other endeavors, each decision made early in a construction project determines how a project will be executed in its middle and latter stages. As such, the project planning and architectural design process represent the greatest opportunities to capture value and savings in a construction project. Simply put, a project that's planned and designed smarter is built better.

Our advice to you: no one solution is necessarily the best for every job, so be open to innovation and the opportunity to find those that are best for your project. It takes a strategic and methodical approach to properly plan your project. And design decisions rooted in complete information and thorough research yield the greatest value.

In this guide, we show you how to methodically and strategically plan your project and introduce you to cutting-edge solutions that help you capture maximum value. Ultimately, we show you how to plan your project so it meets your budget, schedule and other key constraints to get a facility that enhances your day-to-day operations and supports your long-term strategic goals.

PART I:
STRATEGIC PROJECT PLANNING AND SMARTER DESIGN

STRATEGIC PROJECT PLANNING AND SMARTER DESIGN

Whether you're building new, renovating an old facility or expanding an existing operation, the goal of any project is to maximize resources and get a facility that meets business needs. Your designer and project team are here to help you gather and make sense of all the pertinent information to make the best and most informed decisions. As you plan your project, you can take several steps to get the most from your project and put it on a smarter path to capture maximum value and ROI.

DEFINE YOUR VISION AND STRATEGIC PLAN: SUPPORT THEM WITH OPEN COMMUNICATION AND RESEARCH

A corporate vision is as much a part of a company as people, processes and technology. Rooted in a company's core values and purpose, it guides an organization toward goals and through challenges. Your strategic plans, whether 3-year, 5-year, 10-year or longer, provide more detailed direction and goals for your company. Together, these tools can serve as a powerful guide for making project decisions. You'll want to come into your project with a clear vision of how your project will help you achieve your vision and strategic goals. Your facility can and should represent, support and project your corporate vision while helping you achieve strategic goals.

In our experience, the best way to align your project with your vision is through the structured process of Interactive Collaboration, wherein all project parties — from corporate finance, executive leadership and floor-level personnel to architect, engineer and constructor — operate in open partnership. As a cohesive team, the core stakeholders share all key information to identify and prioritize concerns, goals and strategies. The result is tangible design elements and project decisions that represent your corporate vision.

IDENTIFY YOUR BIGGEST FACILITY CHALLENGES

With your vision and strategic goals driving your long-term direction, your first step in a specific project is to identify the challenges you need to solve through construction — whether you must add space, streamline operations, create a better facility environment or meet another need.

To start this process, your key leadership will meet with your design team to ascertain, identify and accurately label your pain points. These are the places where your business and team is hampered due to poor operational structure or inefficiencies in your current facility's design. Your leadership will sit down face to face with your architects, who interview them to understand the current functions of facilities and the positives and negatives of your facility layouts. Some key points to cover include:

- The number of employees using the proposed space
- Key functions and services taking place in the facility
- Future plans for adding new employees
- The flow of people and materials through your building
- Storage requirement for individuals
- The kind of personnel that will occupy and use the space
- How outside parties will interact with the space
- Whether you can overhaul an existing structure or must build new

A good design team will gather information from all key stakeholders, conducting interviews with the executive team, other salient leadership, such as facility managers, and frontline facility staff who will use the space daily. A full analysis includes taking stock of the building systems and operational technologies that you use, such as classroom technologies in schools or medical technologies in hospitals. Many designers will even directly observe facility use and workflows to understand the existing facility and optimize layout planning.

The best things you can do are share all pertinent information, come prepared with key points and keep an open mind. The ultimate goal is to get a sense for the true requirements of your project and begin to define key project parameters.

DEFINE PROJECT CONSTRAINTS

With core values, strategic goals and key challenges defined, you have nearly all the key information. The last piece is to define the real-world constraints of your project, such as:

- Project schedule
- Budget
- Financing availability
- Building codes and requirements
- Land and site availability
- Natural resources near your site
- And other key parameters specific to your project

While many view these as challenges, we view them as opportunities. These real-world constraints guide your project, giving your project team clear parameters for prioritizing your goals and designing solutions.

BE DECISIVE IN PRIORITIZING, IDENTIFYING AND PURSUING YOUR GOALS IN THE DESIGN

A business' facility desires often outweigh its available resources, so conducting extensive research is crucial. Whether you focus on promoting staff efficiency, creating a productive and enjoyable environment or capturing energy cost savings, you'll need to identify and prioritize the true needs and facility problems over the wants. Having all the key information in hand allows you to confidently prioritize needs and make design decisions.

With goals prioritized, your design team will model your space and define key elements, such as square footage, materials and layouts. A good team will work in open collaboration with you, giving you input on the design as it progresses through various stages. You'll be included in decisions so you can be confident that you'll get the project and facility you need.

When you make design decisions, make them early and definitively with as much information as possible. Design decisions determine many aspects of your project, and changes late in a project add significant costs and cause major delays. By clearly defining what you need to achieve and aligning your entire project with specific priorities, you can quickly and confidently make specific decisions and align your project for success.

PART II:
STRATEGIES TO CAPTURE VALUE AND SAVINGS THROUGH DESIGN

STRATEGIES TO CAPTURE VALUE AND SAVINGS THROUGH DESIGN

Architectural design and construction are continually evolving, with new technologies and innovative methods constantly changing the way we design and build. In this section, we identify some of the most valuable emerging technologies and methods. In partnership with your project team, you can take advantage of these developments to capture project value, save time and money on construction and promote maximum operational efficiency in your facility.

START WITH DESIGN-BUILD

Today's businesses demand better buildings with more functionalities than ever before. To meet demand, facilities are growing increasingly complex, necessitating tremendously intricate projects. At the same time, new technologies and practices are disrupting the construction industry and altering the facilities we operate in. It takes an increasing array of specialty trades and professionals to design and build modern facilities, and coordination between all trades is at a premium.

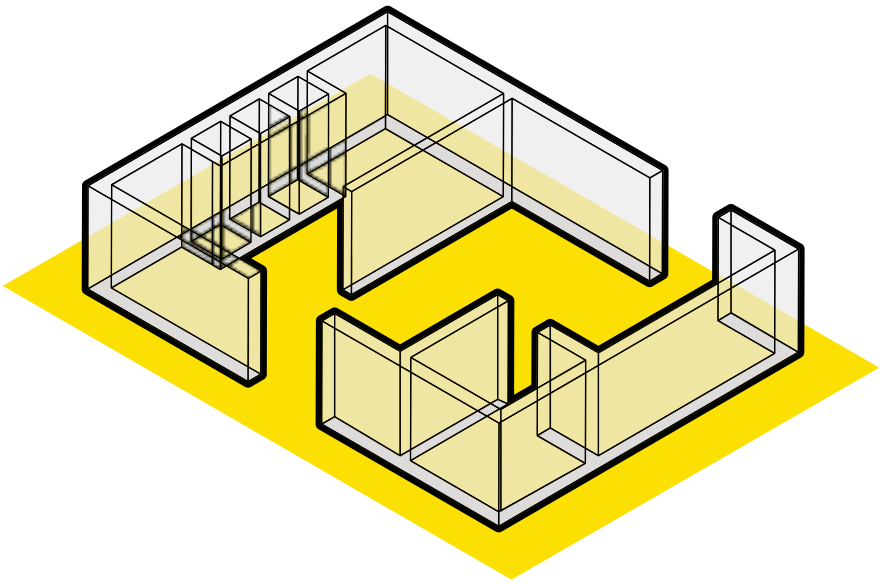
In our experience, the best way to deliver today's complex built environments, coordinate the many specialty trades and implement innovative, best-value solutions is with the Design-Build method. In Design-Build, a single entity is responsible for all elements of design and construction. The method brings together your key leadership with your architect, contractor, engineers, energy-efficiency experts and specialty trades at the onset of your project. It enhances collaboration, allowing each project team member to add valuable expertise and solutions. In addition, the process fosters total collaboration between your leadership team and your selected design and construction professionals. You are kept more informed of project developments, with weekly collaboration on the best solutions. And you'll be able to easily relay key information to your project team.

With all parties working together on the same page, your project team does the research to identify the right solutions for your project. You'll emerge with a design that looks great and accounts for cost, schedule, constructability, energy efficiency and all key parameters. Your project will take advantage of the greatest technologies and most innovative methods available today to deliver the facility you need. Even better, the method is proven to reduce costs while paving the way for faster project completions.

We highly recommend using the Design-Build method. In fact, more than 90 percent of our projects are Design-Build.

DEMAND REAL-WORLD OUTPUTS AND SMARTER MODELS

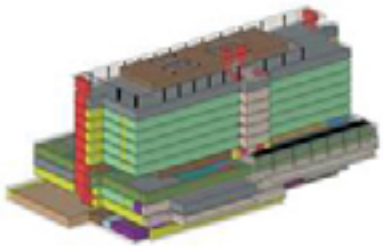
Early pre-construction phase designs have traditionally been little more than napkin sketches, making crucial design decisions difficult and largely uninformed. For many projects, even latter stage designs have left significant ambiguity, creating challenges during construction and making it difficult to incorporate owners' visions into facilities. But today, new technologies allow designers to create more complete real-world outputs in the design process, allowing you to realize your vision and capture value.



One such technology is 5D Macro Building Information Modeling (BIM), which allows design teams to create models that show you, at the earliest design stages, how different design concepts affect cost, schedule and constructability. Though only a small group of firms have adopted this technology, it is already revolutionizing projects, allowing owners to evaluate large-scale options and make informed decisions early in the process.

As your project progresses further into design, you'll want your team to use 3D BIM programs to show detailed models of your design. This is largely common practice, but what's changing is that computer modeling is no longer limited to basic architectural models. Today, models of specific building systems are available and should be part of your project. Subcontractors' design consultants can use BIM to model structural engineering, mechanical, electrical and plumbing systems, ductwork, steel work and more.

Even virtual reality (VR) technology, particularly using the Oculus platform, is increasingly used to demonstrate design concepts. You can get a walk-through of your facility before it's built, gaining a true feel for your facility environment, including its finishes and colors. The best design teams are integrating these modeling tools to create real-world outputs that make the design process easier and more valuable for owners.



USE CLASH DETECTION TO AVOID JOB-SITE CONFLICTS

One benefit of better models is the availability of clash detection. Every major facility has a range of building systems, with many incorporating specialty technologies. The design and construction of these systems typically requires specialty trades who each handle a specific element, such as mechanical, plumbing or electrical systems. But every building element must seamlessly work together to form a cohesive built environment. With more robust computer modeling, clash detection programs and early collaboration between all key project parties, your design team can ensure no systems clash in the use of space — a problem often encountered and painfully solved on the job site. Today, field coordination problems can and should be prevented before they arise in the field.

DESIGN AROUND PRE-FABRICATION

Owners are increasingly realizing value from prefabrication. Your design should maximize its use.

In prefabrication, specialty contractors build specialty and technical building elements in controlled environments, instead of having project teams build every aspect of a facility on the job site. Pre-fabricated building elements are then delivered to the job site and assembled like puzzle pieces by the project team.

This practice allows for the use of safer, more refined processes to create technical building elements. For example, it's much easier for specialty firms to produce sections of concrete walls with pre-made windows in a controlled environment than on the job site. Weather and other job-site hazards are removed from the equation, and contractors can procure building elements more quickly. As a project progresses, contractors can reduce man-hours and overlap elements of construction — while subcontractors pre-fabricate walls off-site, the contractor pours the foundation. The result is a safer project with a significantly faster construction delivery.

In a Design-Build project, your design team can collaborate with trade professionals to identify materials that can be pre-fabricated and incorporate those valuable insights into the design and specifications.

MAKE DECISIONS WITH AN LCCA

A life cycle cost analysis (LCCA) is the formal process of calculating the ROI you can expect from building investments. The LCCA provides long-term cost projections for a particular building investment over its useful life cycle, accounting for the time value of money and all other factors of cost and payoff.

In the LCCA, the costs of two or more alternative investments are calculated and compared to determine which has the lowest long-term cost and better long-term value — e.g. which is most economical over the life of your facility.

The LCCA puts solid numbers behind decision-making and allows you to evaluate where you can best spend project dollars. To reap maximum benefits from an LCCA, make it part of your project from the earliest stages of design and continuously update it throughout your project as you evaluate solutions for various project elements.

PLAN FOR FUTURE EXPANSION FROM THE START

If you know your operations are expanding and you'll likely outgrow even your new facility, planning for expansion can provide significant savings. One, it allows you to phase your project and minimize up-front expenses. Two, it allows your facility to grow with you.

But planning for expansion isn't just about adding more space. It means planning interior spaces so the site can handle future growth with the least cost impact. And it means designing from the onset to account for demands of the additional space, such as supporting future structural, seismic and electrical loads — all without disrupting the existing space.

Some strategies for smart future expansion include:

- Planning mechanical, electrical and plumbing (MEP) systems so they can be easily expanded without disturbing the under-slab work or resizing mechanical panels or electrical units
- Extending wiring, piping and utilities where the building expansion would be located
- Using temporary, lower-cost materials for the parts of the facility that will be torn down or replaced

At The Korte Company, we've completed many expansions for a wide range of facilities and can help you plan and execute an upcoming expansion or addition, even if it wasn't originally planned.

CREATE A BETTER ENVIRONMENT WITH CLEANER INDOOR MATERIALS, NATURAL LIGHTING AND EVIDENCE-BASED DESIGN

A growing body of research and continually evolving building codes are leading owners to strive for cleaner built environments. The emerging field of evidence-based design (EBD) has shown that cleaner environments have a powerful and valuable impact on a wide range of organizations. More green space, natural light and outdoor views lead to increased worker happiness and productivity while minimizing sick days. They also lead to better learning outcomes in schools and even improved patient outcomes in hospitals.

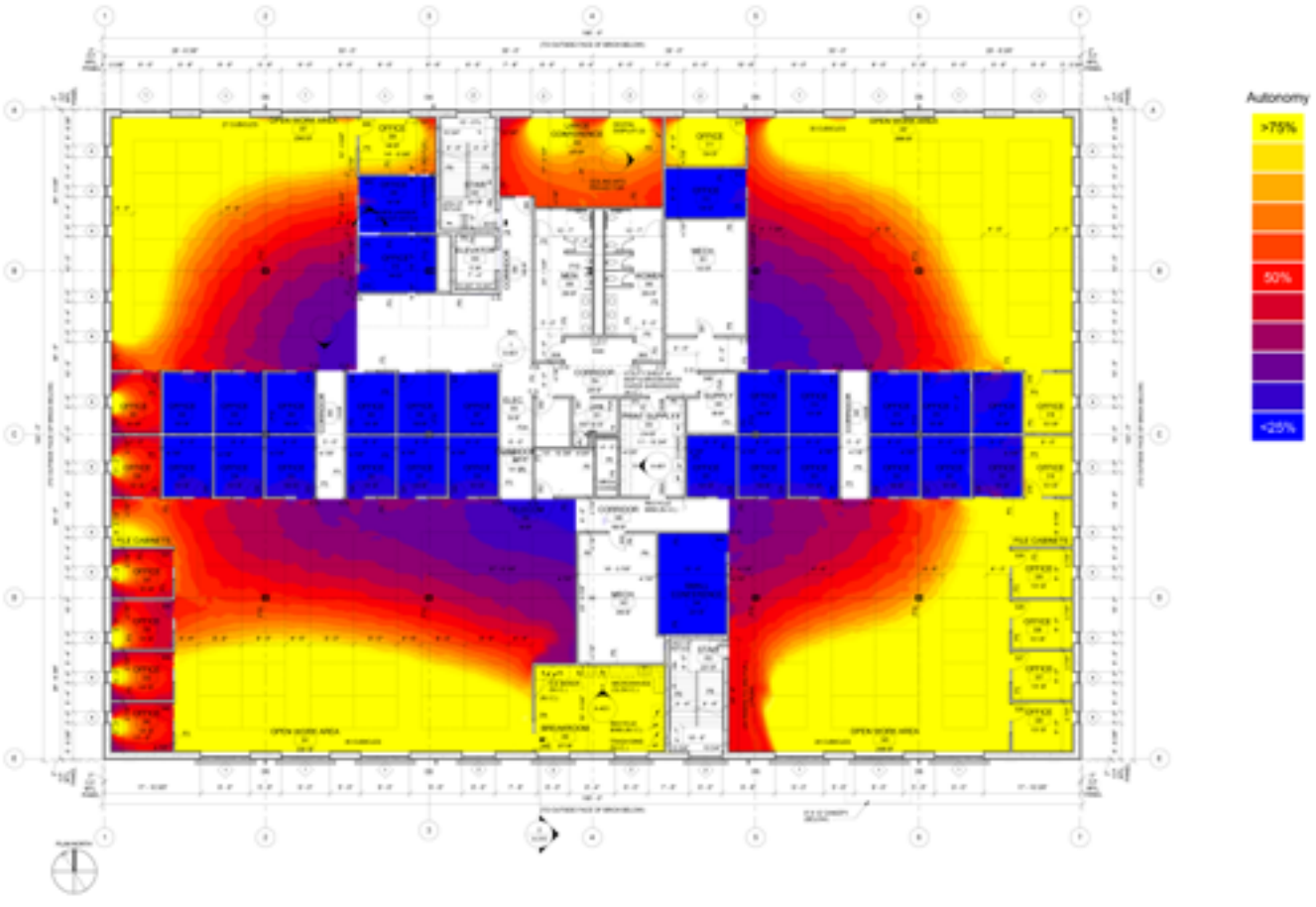
A best-value design will take advantage of insights from evidence-based design and use challenging building codes as a positive constraint to incorporate smart solutions. Some examples include site development and window placements that maximize natural views, low-VOC paint, flooring and building materials, and skylights that cost-effectively increase a building's natural light — not to mention reduce electricity bills. Whether or not you want to meet LEED certification or Green Globes standards, cleaner design can significantly improve your built environment.

MAXIMIZE ROI FROM ENERGY EFFICIENCY

Today's complex facilities and market trends are making energy efficiency an increasingly smart investment. Both energy and operating costs are increasing, and for some facilities, now exceed construction costs. For many projects, energy-efficiency savings can actually pay for building elements that enhance the branding of a building, provide added amenities and raise property value.

You don't need a LEED-Certified project to get bang for your buck. A good starting place is following IECC codes and ASHRAE 189.1 guidelines for energy-efficient projects. But perhaps the most important element is incorporating energy-efficiency solutions from the onset of your project. In our experience, the Design-Build method best allows green solutions to influence both the design and construction process to ensure you get the best value.

To learn how to achieve maximum ROI from energy efficiency, download our complete guide on the topic here.



MORE ABOUT THE KORTE COMPANY

At The Korte Company, we take pride in delivering architectural design that blends form with function to deliver exceptional built environments. We use smarter design to help you achieve your vision and strategic goals while creating facilities that support your core operations. On each project, we take the time to listen to you, do the research and carefully evaluate best-value solutions to maximize the value of your project. Through the years, we've consistently been early adopters of the latest technologies and methods, building our company on the notion that collaboration and innovation deliver the best results.

And our approach has paid off. We've completed Design-Build projects coast to coast for many of the nation's leading companies. Today, we're widely recognized as a national leader in Design-Build. But don't take our word for it. Explore our extensive project portfolio or read testimonials directly from our clients.

If you're looking for guidance on your next project, contact us here or call us at 618-654-8611.

KORTE
build smart.™