bqe

Pre-Design to Post-Construction

Strategies that Maximize Profits for Architects and Engineers

Table of Contents

Introduction

As an architect or engineer, you are more than a designer. You are also a business leader. Building a profitable, sustainable, and fulfilling practice requires more than technical expertise. It demands a clear understanding of the business strategies that drive long-term success.

Profitability does not begin when the contract is signed, and it does not end when construction wraps. The most successful firms know how to plan for profit at every stage, from pre-design through post-construction. That means developing systems that support smarter project selection, efficient workflows, and better decision-making throughout the entire lifecycle of a project.

In this ebook, we explore practical strategies you can use to strengthen your financial outcomes from start to finish. Whether you are trying to improve margins, reduce rework, or boost client satisfaction, this guide will help you align your design process with business performance. Because when your business runs as smoothly as your projects, everyone wins.

Understanding the Value Chain

Chances are the term “value chain” isn’t used in your firm. This is because most of architects and engineers have been trained as design professionals but not in the matters of running a business. However, this term should become part of your normal business practice.

The value chain is the full range of activities a business goes through to bring a product or service from its conception to its end use and beyond. This concept was first introduced by one of the world’s foremost business strategists, Michael Porter, in his 1985 book "Competitive Advantage: Creating & Sustaining Superior Performance.”

Throughout this rest of this ebook we’re going to discuss tools and strategies you can use for adding value at every single stage of the value chain. You must understand and optimize the entire value chain, not just focus on improving individual stages.

When you have a well-managed value chain you will immediately enjoy the benefits by receiving higher client satisfaction which leads to repeat business, referrals and a strong reputation in the industry.

By understanding and nurturing all aspects of the business, from marketing to customer service, finance to human resources, you can unlock greater potential. This holistic approach ensures resilience, agility, and ultimately, a competitive advantage. Don’t ignore your strengths and passion. Instead, paint with a broad brush so you can become stronger as a whole.

The First Link in the Value Chain: Pre-Design

Too many firms jump directly into Schematic Design (SD) and consider everything before SD as merely the uncomfortable work of getting the client to sign your contract. Big mistake.

If this is you, understand you are missing a wonderfully important opportunity to show value, establish expertise, and generate additional revenue. Early engagement sets the tone for the whole project.

The pre-design phase is a collaborative process where architects, engineers, clients, stakeholders and sometimes other end-users might come together to define the project's goals, requirements, constraints, desired outcomes and vision.

If you're not doing this until schematic design, or not doing it at all, this may be why you spend too much time developing schemes that end up in the trash bin. In fact, you're also unable to charge your client for a lot of that wasted work and it eats into your profits. When you define the objectives early on, and include all parties, you reduce the risk of costly changes or misunderstandings later on.

Pre-design allows the design team to gain valuable insights about the client's expectations, the intended function of the building and the desired aesthetic which can inspire and guide the design work in an efficient manner.

This early engagement builds a positive and collaborative relationship between the design team and the client. This will enhance client satisfaction and pave the way for successful collaboration.

For some of you, you might know this phase as Programming. And when you provide this service, it typically accounts for under 10% of your overall fees.

Don't think that means you shouldn't put your attention into improving how you perform during this phase, or forgo doing these services because you think it doesn't impact the project as much as the later phases. Always start with pre-design as it creates a solid foundation for your future. As you can all appreciate, due to compounding effects, a small imperfection early on can result in a huge deviation later.

Early engagement is also the time when you and your client can identify and analyze potential challenges or constraints which may arise due to site conditions, regulatory requirements, budget constraints or sustainability goals. This is the time for the team to develop strategies to be addressed in the design, reducing the risk of delays or cost overruns.

You may have previously learned about Strategic Planning for your firm. In this case, we're talking about strategic planning at the project level. Conceptually, the process is similar, but the object is different.

This involves the careful and thoughtful analysis of a project's objectives, constraints, and opportunities. This is what enables you to understand your client's visions, needs and budget and will ensure alignment between their expectations and the design solutions you propose which will minimize costly revisions later.

When you go through this step and include your client, you'll be amazed at what can happen. You'll have the ability to identify unique, value-adding opportunities that could enhance project profitability.

Your client may not be aware that these things exist or that you can provide them. Things like innovative design approaches, sustainable building practices or technologies that improve project delivery speed and quality.

Bringing these into the light of day in the pre-design stage is, in itself, a winning approach to becoming a trusted advisor to your client and earning their loyalty and trust.

Financial Planning & Project Budgeting for Pre-Design

Financial planning and project budgeting is a necessity for remaining profitable as a business, keeping individual projects on track, and ensuring clients are happy. This is the most essential step in having an understanding of project economics, what costs will you incur by engaging in this project, and what fees will you need to support the work and leave you with a healthy profit.

During this stage you'll want to optimize resource allocation. A well-crafted plan outlines the skills, timing and tools needed during each stage of the project, enabling firms to assign the right people, develop a work plan, and control costs.

Performance Tracking is essential. It's not enough to simply create the initial budget. This will serve as the baseline to track your performance throughout the life of the project. Monitoring this regularly will highlight where costs are higher than expected allowing corrective action to be taken.

Having software tools, like BQE CORE, that provide you with KPIs that deliver real-time performance information means you don't wait weeks to learn about problems. Get ahead of it by using technology to monitor the financial health of your projects and ensure you achieve your plan.

The Essential Toolkit

Before we move to other phases of the project cycle, let's dive into the toolkit that your firm should utilize during every step of the way and especially during pre-design. First up are the tools that you deploy during Client Engagement.

Active Listening is at the top of the list. Encourage your clients to share their ideas and ask open-ended questions that allow them to articulate their vision and expectations.

If you think they have come to you for your vision, you'll be surprised. Even a client that has never worked with an architect before and is afraid to express their vision - will eventually push back against your unfettered vision. You need to help them express their vision.

Schedule **regular meetings** with your clients throughout the project. This ensures that you stay aligned with their vision, update them on progress, and give them the opportunity to voice any concerns or changes they might want.

Simply setting up a meeting schedule during pre-design illustrates your firm's ability to manage the project and will impress upon your client how professional you are.

Surveys and Questionnaires can be used at the beginning of the project to gather information about the client's preferences, needs, and constraints. They can also be used throughout the project to get feedback on your performance, how they feel about the team that you have working with them and so on. It's a fantastic tool to identify areas for improvement.

Incorporate a process for gathering and acting on client feedback. We refer to this as the **feedback loop**. This not only helps improve the project at hand but also helps you better understand your client's needs for future projects.

Use sketches, mood boards, 3D models, or virtual reality to help clients **visualize**. Most clients don't have the imagination to visualize what all those lines on paper mean. This can help ensure that your understanding of their vision aligns with theirs. It makes them comfortable that they're making good decisions when they understand what you're presenting.

It might be a wonderful feeling to have your client stand before you at the end of a project and ask, “Wow! I had no idea. Did you always know it was going to look like this?” But it can also be horrifying to have that client say “Wow, I had no idea. Did you know it was going to look like this? How the heck could you have let this happen?”

Try to understand the project from the client's perspective. This can help you anticipate their needs, address their concerns, and ultimately deliver a product that exceeds their expectations.

Fine tuning your **empathy** skills enables you to act as a trusted advisor. When this happens - you win their loyalty and trust which is the one thing - besides money - you want to receive from your client.

Regularly update your client about the status of their project. Transparency about progress, challenges, and changes to the initial plan helps build trust and allows for timely feedback. Long silences from your firm while your team continues to work, is never a successful strategy.

Communicate frequently and clearly.

Always aim to deliver more than promised. This could be meeting deadlines ahead of time, coming up with innovative design elements, or being proactive in resolving potential issues.

Frankly, the first piece of advice and the last are the most important skills you could hope for. Listen attentively to the client and **exceed their expectations**.

At some point, whether it's during pre-design or schematic design - and depending on your profession, your firm might provide **feasibility studies and site analysis**. This exercise provides a strong foundation for the project and will help maximize value.

Here are some tools or skills that will help maximize profit:

Gather as much **information** as you can about the site. This includes environmental conditions, land contours, existing structures, local regulations, and surrounding infrastructure. Comprehensive data can help you make informed decisions and anticipate potential challenges.

Utilize **technologies** like Geographic Information Systems (GIS), Building Information Modeling (BIM), and drone surveys for detailed and accurate data collection. This can save time and provide more accurate information than traditional methods.

Involve specialists such as structural engineers, environmental consultants, and local planners in the feasibility study. Their expertise can help you understand the site's potential and constraints better.

Understanding the local market, such as demographics, demand, and competition can help assess the viability of the project and inform the design. This may not be what your client expects. But when you do **market research**, it will not only inform you with better design solutions -

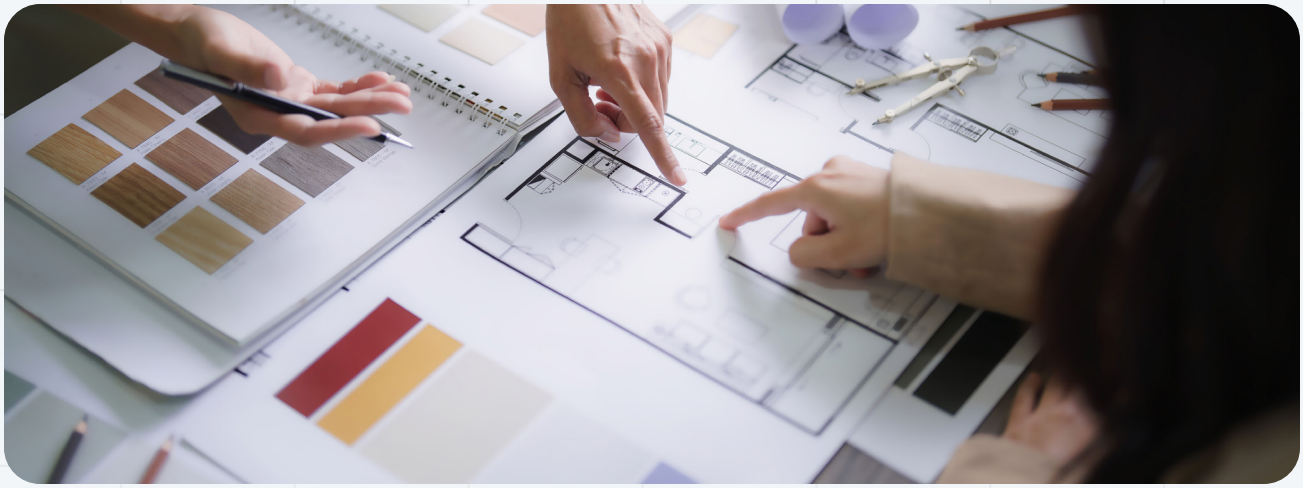
but be perceived by the client as an example of a firm that prioritizes the needs of their client.

Identify potential **risks** associated with the site and the project. This could include environmental risks, regulatory risks, or financial risks. Early identification of risks allows you to plan mitigation strategies and prevent costly issues later on.

Estimate the cost of the project based on the site conditions and project requirements. This helps determine the project's financial feasibility. The sooner you bring a realistic figure for the total project development costs to your client - the better off you'll be in the long run. Any design professional who puts a cost figure in the brain of a client that is off by more than 20% by the end of the project will probably not see new work from that client again. On the other hand - a firm that nails the costs - earns that clients loyalty and trust.

Evaluate the site's potential for sustainable design features such as solar panels, rainwater harvesting, natural ventilation, etc. These can reduce the building's environmental impact and operating costs, adding long-term value. Anything you do that adds value to the client, should by extension add value to you, your services and your bottom line.

Engage with the local community to understand their concerns and expectations. This can help avoid potential disputes and delays during the construction phase, and ensure the project is well received.



Effective project planning is crucial for maximizing value in any project. Here are some techniques that can be used:

Start with a **clear understanding** of what the project is meant to achieve. These objectives should be specific, measurable, achievable, relevant, and time-bound (SMART).

Document the **scope of work** in detail to prevent scope creep, which can lead to cost overruns and delays.

Use a **Work Breakdown Structure** to break down complex activities into manageable tasks. This helps in identifying all the work that needs to be done, assigning responsibilities, and estimating time and costs.

Use a **critical path method** to identify the most important tasks that need to be completed on time to prevent project delays.

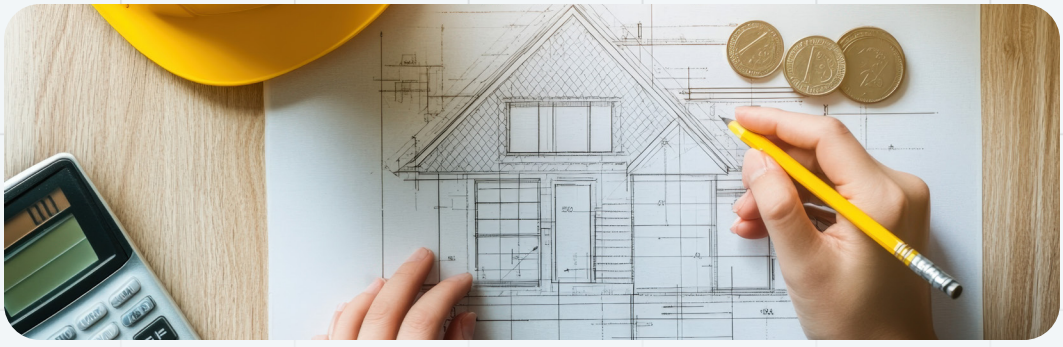
Plan how to use **resources** (people, equipment, materials, etc.) most effectively to complete the project on time and within budget.

Develop a plan for how information will be shared among the project team, stakeholders, and clients. **Effective communication** is key to preventing misunderstandings and keeping everyone on the same page.

Use **software tools** like BQE CORE, to plan and track progress. This will keep everyone accountable and ensure tasks are completed on time.

Plan regular project review meetings to check progress against the plan and make adjustments as needed. This allows you to address issues promptly and keep the project on track.

By using these techniques, you can create a project plan that manages resources effectively, prevent delays and cost overruns, and deliver a successful project that meets the client's needs and expectations.



The Second Link in the Value Chain: Design

It's now time to move on to the Design Phases. In most firms, this work will generate 65% to 90% of the revenue so it makes sense to find strategies that will maximize your profits. Many of these items benefit the client directly and you find it hard to see how that will improve your firm's profit margins. But they do, directly, as additional or higher fees, and indirectly through client loyalty, referrals and market differentiation.

Let's start with design strategies:

By creating designs that are **cost-effective and sustainable**, your firm can save your clients money in both construction and operational costs. These savings can become a key selling point for the firm's services, allowing you to attract more clients and command higher fees. Moreover, sustainable design is a growing priority for many clients, and firms that excel in this area can differentiate themselves in the market.

Innovative and unique design solutions can significantly increase a property's value, which directly benefits the client. Such distinctive designs can also enhance the reputation of the firm, helping to attract

new clients who are looking for exceptional design.

Today, it's clear that the world is rapidly changing. Design spaces that can easily be **adapted** for different uses should be considered. This **flexibility** can extend the building's life and make it more appealing to potential buyers or tenants.

Consider integrating **smart technology** into the design, such as automated systems for lighting, heating, cooling, security, etc. This can improve user comfort and efficiency, adding value to the building.

By finding ways to achieve the **same function at a lower cost** or to improve the function without increasing cost, your firm can provide significant value to clients. This approach can also help the firm to maximize profitability by keeping projects within budget, reducing the need for costly changes or fixes later in the process, and impressing clients with your efficiency and problem-solving skills.

Strive to balance innovative design with **cost efficiency**. A design that is innovative but also cost-effective to build and maintain will be more profitable.

Creating a **collaborative design process** that includes different stakeholders (clients, end-users, engineers, contractors, etc.) can lead to more innovative solutions.

A design that is **easier and quicker to construct** can reduce construction costs and time, thereby increasing profit. Demonstrate the differences to your client and include them in the decision making.

Material Selection

The right materials enhance the quality, sustainability, and cost-effectiveness of a project. Here are some strategies to consider:

Choose materials that are durable, energy-efficient, and **sustainably** sourced. These reduce environmental impact, lower energy costs, and appeal to environmentally conscious clients and end-users.

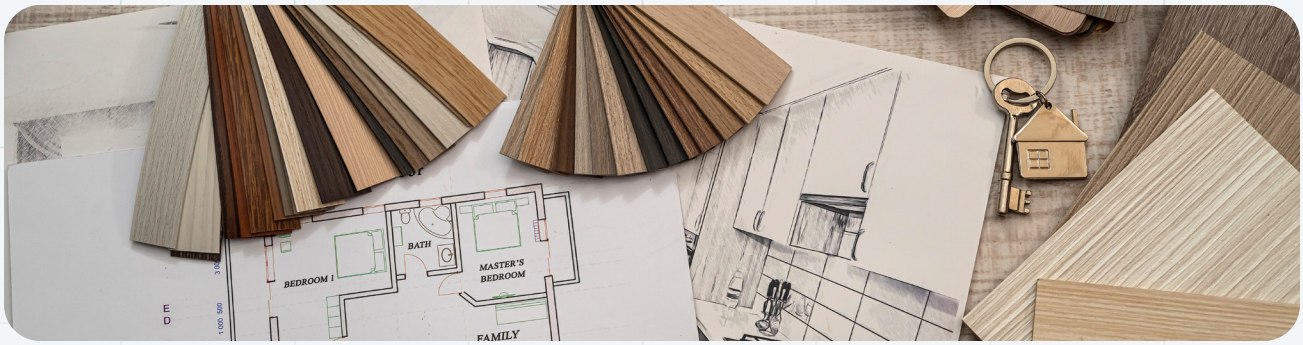
Balance quality with cost. High-quality materials can reduce maintenance and replacement costs over time, but they also need to fit within the project budget.

Whenever possible, **source materials locally**. This reduces transportation costs and carbon emissions, and supports the local economy

Use of **innovative materials and construction techniques** can reduce construction time and costs, improve building performance, and create unique aesthetic appeal. This can add value to the project and differentiate your firm from competitors.

Using **recycled or reused materials** can reduce costs and environmental impact. This could also be a selling point for clients and end-users who value sustainability.

Consider the full **life cycle** of the materials, including their production, transport, maintenance, and disposal. Materials with a lower life cycle cost and impact can add long-term value.



Technology

Modern design tools and software can significantly improve the efficiency and accuracy of your projects. Some examples:

Building Information Modeling allows for a more detailed and collaborative approach to design and construction, reducing errors, facilitating better communication among stakeholders, and improving overall project management.

3D Modeling and Visualization allow for better design communication and collaboration, enabling clients to visualize the final product more accurately and make informed decisions early in the design process.

Simulation Tools like energy modeling or structural analysis software help optimize for performance and efficiency, potentially saving costs in construction and operation.

Automation can speed up routine tasks and reduce the chance of human error.

Virtual and Augmented Reality technologies can offer immersive experiences of the design, improving communication with clients and stakeholders, and facilitating better design decisions.

Project Management Software, like BQE CORE, can help manage tasks, deadlines, budgets and billing, leading to better project organization, efficiency, and profitability.

Cloud platforms facilitate real-time collaboration among team members, even if they are working remotely. This can lead to more efficient workflows and faster project delivery.

The Third Link in the Value Chain: Construction

During the construction phase, most firms plan about 10-20% of their total fees. Much of your hard work is already behind you and some firms think this is the fun part. After all, if only 10% of your fees will be earned during construction why bother improving this? Shouldn't you just focus your attention on the 90% of the work?

This phase may be where your firm generates less revenue, but it's also the most expensive phase for your client. Money is moving out of their bank account into someone else's at a rapid rate. They are spending 4 to 8 times more money each month than they did when you were designing the project. This is a time when results really matter. Being an active participant during construction is imperative.

We know there are many options for how design professionals base their fees. Hourly, percentage of the cost of construction, unit cost, fixed fee, or a blend of these.

However, when looking at the total project development costs (including the cost of land, financing, carrying costs, taxes, consultants, reimbursable expenses, permits, and construction) most A/E firms

consume about 7% of the pie. Your firm's fees are negligible while your services bring outsized contributions to the ultimate value of the asset.

Think about what the project would be worth if your client didn't hire you or one of your competitors. If they spend $1,000,000 on construction, don't you think your contributions add more than $70,000 in value? I'll bet you think your design contributions would change the $1,000,000 intrinsic value into at least $1,250,000 at a minimum! That's about 4x more value than you're being paid.

Too many firms get squeezed out of the construction phase. The client sees it as an unnecessary expense now that a qualified builder is on stage and demanding 4 to 8 times more money each month from the owner than when you were in the spotlight. In the client's mind, you handed over the full value of your services when construction documents were issued.

Leaving the client alone with the General Contractor is a recipe for fingers to be pointed at you, and you won't be there to defend yourself. Make sure your client appreciates the value you bring during construction and stay involved if at all possible. Your work isn't complete once the shovel hits the dirt.

Even though it's only 10% of your fees, if this phase is highly inefficient, it will cost you more in time, resources and effort than it should.

There are countless examples of firms that lose money during this phase. Whatever profits they earned during design evaporate during construction, either because they are carrying the load for a sub-standard builder, they are inefficient with how their staff performs the construction administration services, their construction documents were insufficient or incomplete, or they simply marvel at the construction phase and spend too much time on site.

While your staff is working on unproductive work during construction, they are simultaneously reducing your profit on this project while impacting the performance of other projects they would otherwise be working on.

Efficient project management can reduce delays, prevent miscommunication, and ensure that resources are used efficiently.

Set up a **communication** plan that ensures all stakeholders are kept informed about the project's progress. Regular meetings and progress reports can facilitate this communication.

Have a process in place to handle **changes** to the project. This should include evaluating the impact of the change on cost, time, and quality before it is approved.

Traditionally, the **value** of your participation during this phase isn't proportional to the fees you'll earn. As industry insiders and active participants, we all understand our value is critically important to the quality of the final product. When your work is understood by the client to bring value - your fees will increase as will potential profits. But you need to do the work of selling your value. Most AE professionals are grateful to participate in the design and take the pie crumbs offered and forgo the heavier lift of selling the full value of their services.

As an A/E professional, you play a key role in quality control during construction. The right techniques ensure the project aligns with your design intent, meets the client's expectations, and complies with regulatory standards, all while maximizing value and profit.

Start with **clear, detailed, and accurate construction documents**. They should provide a comprehensive understanding of the design and quality expectations. This can reduce misinterpretations and mistakes during construction.

Conduct **regular site visits** to observe the construction progress. This allows you to catch any deviations from the design early and address them before they become costly to fix.

Implement **quality checks** at key milestones. For instance, when the foundation is laid, pre-drywall, post-drywall, and final walkthrough.

Maintain **open communication with the construction team**. Encourage them to ask questions if they are unsure about any aspect of the design. Regular meetings can foster this collaboration.

Specify the **standards for materials and workmanship** in your construction documents, and check these standards are being met during your site visits.

Document any issues that arise, along with the steps taken to address them. This provides a record in case of disputes and can also provide learnings for future projects.

Involve the client in key inspections and walkthroughs. This ensures their expectations are being met and provides an opportunity to address any concerns. If you're not present and the client walks through with the builder - there's no limit to the amount of damage that can be done to your design when you aren't represented.

By implementing these quality control techniques, you can help ensure your design is realized to a high standard, enhancing the value of the project, client satisfaction, and ultimately, profitability.

You play a vital role in incorporating and promoting sustainable practices during the construction phase of a project. These practices can maximize value and profit by reducing environmental impact, improving efficiency, and increasing the long-term value of the building.

Promote the use of **sustainable construction techniques** such as prefabrication or modular construction, which can reduce waste and energy use.

Regularly **monitor and report** on the project's environmental performance. This can provide a selling point for the project and help identify areas for improvement.

Consider aiming for **green building certifications** like LEED or BREEAM. These can increase the building's market value and appeal to environmentally-conscious tenants or buyers.

Consider the **long-term sustainability** of the building, including its energy efficiency, water use, and adaptability to future uses or climate conditions. These can reduce the building's operating costs and increase its lifespan, adding value for the client.

By integrating these sustainable practices into the construction phase, you can help create a building that not only reduces its environmental impact but also delivers long-term value and cost savings, enhancing client satisfaction and the profitability of your services.

The Final Link in the Value Chain: Post-Construction

Too many A/E professionals think their job is done after the project has completed construction and the owner has taken occupancy. If this is you, then you're missing out on an enormous opportunity.

Depending on the project type, you should consider providing **post-occupancy evaluation services**, to assess how well the building is meeting the needs of its users through surveys, interviews, site inspections and monitoring technology.

Regularly reviewing this information can help you provide recommendations for improvements to this project but also can inform you for future projects. Sell this service to one client - who will receive a valuable benefit, while you can also use the information and knowledge gained to build value for the next project.

Your firm can assist clients in understanding the **long-term maintenance** needs of the project. Create a maintenance plan, detailing when and what kind of maintenance activities should be done This not only helps prolong the building's life, but helps the client to budget for these activities in advance.

If you're looking for a new revenue stream - consider creating a division that actually enacts the plan on your client's behalf. Having them see the results increases your value and makes them more likely to continue to pay for this service.

If it makes sense, consider offering interior design services in your offerings. It will keep you in control of things that are important to you while also enhancing the value to the client.

If the building wasn't originally designed with **sustainability** in mind, your firm could offer to help make it more energy efficient, which could save the client money in the long run, be better for the environment and, once again, bring you a new revenue stream.

Ask to perform a **design audit** at no charge. You'll ensure the building is being used as originally intended and the aesthetic and functional qualities are maintained. You'll also be able to recommend new services based on your findings.

When you keep the **relationship** going after construction, and the client was pleased with your work, they may be interested in retaining your services for future projects. Maintaining a good relationship with the client and keeping lines of communication open can lead to more business opportunities down the line.

Even if you had a rocky ending to a project, it's far more cost-effective to win back that client than it is to win a new client.

Invest in your clients.

Building Relationships

Strong relationships with clients are fundamental to your business. Happy clients are more likely to become repeat clients and refer others to your services. By investing time in understanding client's needs, preferences and vision, you can create designs that not only meet but exceed their expectations, fostering client loyalty and boosting profits.

A **solid relationship with contractors** can reduce the risk of delays and cost overruns. When architects and contractors understand and respect each other's roles, they can collaborate more effectively, reduce conflict, misunderstandings, and costly mistakes.

Good relationships with suppliers can provide you with access to quality materials at competitive prices. Suppliers may also be willing to offer early access to new products or to prioritize orders during busy periods, ensuring that your projects stay on schedule and your services bring added value to your clients.

Having **strong bonds with those who hold the money** is always good for business.

Building **relationships within the local community** can create opportunities for new projects and partnerships. In addition, it improves your firms reputation and standing, attracting more clients.

Strong **relationships within your team** promotes a positive productive work environment. This will increase staff retention, reduce hiring and training costs and improve the quality of your work.

Lastly, don't ignore the importance of **leveraging professional associations**. When you join and actively participate in your profession's associations, you'll build relationships with your peers and industry experts.

These relationships can lead to collaboration, referrals and access to valuable resources and information, enhancing your firm's ability to deliver high-quality profitable projects.

Key Takeaways

- Always begin with pre-design as it creates the project foundation.
- Performance Tracking is essential. It's not enough to simply create the initial budget. This will serve as the baseline to track your performance throughout the life of the project.
- Schedule regular meetings with your clients throughout the project. This ensures that you stay aligned with their vision, update them on progress, and give them the opportunity to voice any concerns or request changes.
- Always aim to deliver more than promised. This could be meeting deadlines ahead of time, coming up with innovative design elements, or being proactive in resolving potential issues.
- Gather as much information as you can about the site. This includes environmental conditions, land contours, existing structures, local regulations, and surrounding infrastructure. Comprehensive data can help you make informed decisions and anticipate potential challenges.
- Project Management Software, like BQE CORE, can help manage tasks, deadlines, budgets and billing, leading to better project organization, efficiency, and profitability.
- By finding ways to achieve the same function at a lower cost or to improve the outcome without increasing cost, your firm can provide significant value to clients.
- During the construction phase, money is moving out of their bank account into someone else's at a rapid rate. This is a time when results really matter. Being an active participant during construction is imperative.
- Consider providing post-occupancy evaluation services, to assess how well the building is meeting the needs of its users through surveys, interviews, site inspections and monitoring technology. Regularly reviewing this information can help you provide recommendations for improvements to this project but also can inform you for future projects.

About BQE CORE

Designed for engineering, architecture, and professional services firms, BQE CORE is a leading provider of business management software.

Firm owners are busy. This is why we built BQE CORE to streamline operations by integrating time tracking, project management, invoicing, and accounting into a single platform, enabling firms to boost productivity and profitability.

With a track record of over 25 years serving the A&E industry, BQE empowers businesses to make informed decisions through real-time insights and powerful analytics, helping them achieve growth and operational excellence.