

# You **Can** Control Construction Cost

*in difficult economic times.*

*Buildings are expensive. They are custom designed to serve specific needs and to last for decades. Controlling the cost of construction is always important, but more so in difficult economic times. There are ways to save money without compromising quality.*

## The Decision to Build

The decision to build starts a complex and expensive process. The very beginning is the best time to save money. As you move further into the process, saving construction or operation dollars increases in difficulty.

A decision to build is based on real needs for more space, better accommodations or changes in operations. However, **the solution to every need is not a new building or more space.** Can you find another way to satisfy this need? Can you consolidate areas or functions to avoid or postpone the project? Are you considering a facility for intermittent functions? Could you rent space for less? Question the need and look for unusual but effective solutions.

*Concerned owners deliberate carefully before deciding to build.*

**Quality** You can save money by reducing the quality of construction, but this causes problems. Lower cost finishes that need replacement, lower quality mechanical systems that use more energy, and designs that do not allow for future modification and expansion are not cost-effective.

## The Program

**Ask probing questions about the building's program.** Can rescheduling underused existing spaces reduce the need to build new spaces? Can a new space be designed for shared or multiple use?

**Budgeting** Set a budget as soon as possible. How much are you interested in spending and how much can you raise? Setting a budget early may not be easy but you will answer important questions about your organization and the project. You can reconsider the budget later in the process.

Don't scrimp on the size of spaces, but be sure that every square foot of space is used for something important now or in the future. **All spaces don't cost the same, so look hard at the most expensive.** Open office and general classrooms cost much less than kitchens, restrooms, science labs, computer rooms and lobbies.

**Sustainability** **The most sustainable approach is to construct less** and therefore have less to heat, cool, maintain and repair.

**Scope Control** The scope of a project is more than the program and the budget. It includes the rationale for the project, the level of quality needed, the requirements for mechanical and electrical systems and even the image of the project.

A clearly written **Scope Document** will give you a benchmark for judging future changes. As changes are considered, many will be found unworthy, thereby avoiding cost increases.

**Architecture** Know your goals for the project. Choose an architect and an architectural firm whose interests are aligned with yours.

Will the architect see the programming phase as a chance to save construction dollars? Is the architect interested in balancing cost and quality for you? Is the architect clever at using design skills to make the most of your budget? In hard times, many will be interested. If times change, some will lose interest.

*Astute owners see programming as an opportunity to save construction and operation dollars.*

# The Design Phases

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To some extent, money can be saved during design.

## Schematic Design (SD)

Schematic Design is the most effective part of the design process for saving money. Do it now for two reasons. It will be more difficult later as more time is invested in the design documents; and cost cutting later will lead to a stripped down building that is expensive to operate. **Over three or four decades, operating costs will exceed construction costs.**

Now is the time to reconsider the program and budget balance. If you can't make them balance, cut the program. Don't assume that you will be able to make it work out later. It won't.

Organize the building simply so that it can absorb the inevitable complications as the design is developed. Lay out the building to be efficient by minimizing single-loaded corridors and exterior skin area. Be sure the Schematic Design conforms to zoning and building codes to avoid costly and inefficient changes.

Decide how you want to spend money for visual appeal. Don't ignore this important function but rely on design skills rather than expensive materials.

**Reality** Carry a reasonable **Contingency**. Many unforeseen things can happen. Cost estimating failures, changes in scope, additional professional fees, revisions to documents and unexpected project conditions occur on many projects. Start planning a project with a 25% contingency. Reduce it to 20% during Schematic Design, then to 15% at the start of construction and zero at completion. Do these contingencies sound too high? They're really not.

## Design Development & Construction Documents (DD & CD)

Design Development is the right time for real **Value Engineering**. Look at alternatives for the structure and shell of a building. Should it be steel frame with bar joists or would tilt-up construction cost less and work as well?

### Cost Cutting vs. Value Engineering

Cost Cutting is sometimes incorrectly called Value Engineering. In its worst form, Cost Cutting takes place after a project's construction documents are completed. Cost Cutting is intended to reduce cost but ends up reducing quality. Real Value Engineering takes long term costs and program satisfaction into consideration.

The Construction Document phase has few opportunities for saving money. Building systems have been selected and coordinated. Changing one affects others negatively. This phase is primarily technical and does not allow much participation by the owner.

**How bidding affects cost.** Match your project with the delivery method that solves the project's problems and maximizes its benefits.

**Traditional Hard Bid** is suited to complex projects with detailed, accurate Construction Documents, good cost estimates and a client willing to risk the bidding process. This gives you the lowest bid but provides it late in the process when changes are difficult.

**Construction Manager as Constructor (CMc)** is good for projects of average complexity that benefit by the Contractor's early involvement to help control costs and avoid changes. The owner must accept a price that may not be the very lowest, but this method controls cost, works with your budget and avoids unpleasant surprises.

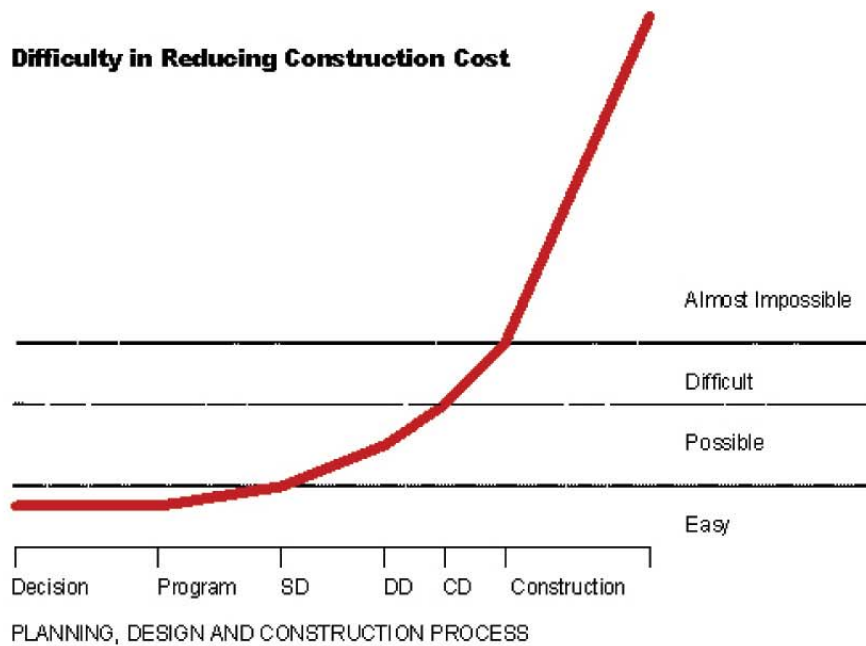
**Design-Build** is best for straightforward projects. It is helpful to Owners who must be sure that they will end up with a building fulfilling basic needs and who can allow quality to vary if needed. The project's cost will be predictable early in the process, but value and operating efficiency may suffer for more complex buildings.

## Construction

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**Saving money during Construction is almost impossible.** The outcome has been decided by this point. You will need to resort to severe cost cutting, not value engineering. Dollars saved are outweighed by opportunities lost. Short of stopping the project, the most that can be done is to reduce quality and pay the price later in less sustainability and less program satisfaction.

## Difficulty in Reducing Construction Cost



## In Conclusion

As you move further in the process of realizing a project, saving money becomes much more difficult.

*Experienced owners and architects know that the time to influence the process is at the beginning.*

- *Start early.*
- *Think hard about basic needs.*
- *Consider alternatives to building more space.*
- *Program the project carefully.*
- *Use a reasonable contingency.*
- *Design straightforward, sustainable buildings.*
- *Select the right architect and construction delivery method.*
- *Control the project scope.*
- *Rebalance scope with the budget whenever you have to.*

**You Can Control Construction Cost.**

**TeamFour|Saur**