

# 10 Ideas for Lowering Construction Costs, Maximizing Efficiency & Maintaining Sustainability

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## 10 Ideas for Lowering Construction Costs, Maximizing Efficiency & Maintaining Sustainability

1. **Automation:** While automation can help offset escalating energy costs, security concerns and a number of other issues, a worthwhile return on investment (ROI) can be difficult to achieve or even quantify in view of overwhelming and often unpredictable upfront costs.

But these technologies are ideal for handling such tasks as controlling systems for light fixtures, HVAC, security, fire alarms and life safety. Trends for improvement are strong, and the potential for tax savings is an attractive possibility as well.

2. **Redevelopment:** Due to the shortage of developable land in the region, and to the increasing difficulties associated with obtaining entitlements and permits for new construction, redevelopment is a cost effective alternative.

While environmental and economic considerations were also identified as factors, and while some of these variables (such as interest rate levels) have changed in recent months, the trend towards renovation and redevelopment has continued and the cost/logistic advantages are solid. However, work crews must adapt to working in or around occupied space, which requires more substantial safety protocols along with enhanced noise and dust abatement.

3. **Porous Pavement:** Porous pavement is a special type of pavement that allows rain and snowmelt to pass through, thereby reducing the runoff from a site and surrounding areas. In addition, it filters certain pollutants from the runoff, adding to its ecological advantage and overall sustainability.

While more costly at the start, long-term it is a cost effective option that might also qualify for certain government programs.

4. **Tilt-ups:** The steadily rising cost of steel has made this approach increasingly popular and effective. It is similar to traditional construction methods because the foundation is placed and the floor slab formed before the walls are built. The difference is that walls are cast out of concrete panels lying flat on the ground and then lifted all at once to accept the building's roof.

There are several benefits associated with this method, including:

- Reduced costs for all-concrete walls
- Less manpower needed to build the structure
- Reduced construction waste
- Use of all-natural materials
- Energy efficiency

In addition, when compared to a metal building, a tilt-up building requires less maintenance because it can withstand storm damage, will not dent and won't rust. Features can be added to the concrete such as color and texture to provide visual appeal as well. Tilt-up walls also hold heat better because of the massing of materials in concrete. Concrete is a recycled and reusable material.

But the most important benefit is cost. The average cost of a tilt-up wall is \$8 per square foot compared to \$12 for a masonry wall. The time it takes to construct the wall is 25 percent less as well, and only half as much labor is needed.

5. **Adopting Curbs Against Inflation:** Contractors must find methods to protect themselves from price escalation during the period from when they quote a project until the time that they receive a commitment from the project owner.

One way is to make the statement on all proposals that the quoted price can only be held for a specified number of days – perhaps as few as 10 days. Another option, which has become standard in many contracts over the past twelve-to-eighteen months, is an escalation clause. This clause allows the contractor to be paid for material increases providing that the contractor presents the appropriate documentation verifying the cost increases.

The effects of inflation are felt in all industries. Fortunately, the methods described above enable construction firms to continue doing business with reduced risk.

6. **Green:** The dramatic increase in fuel and energy costs plus the needed discussion surrounding climate change have pushed the environment into the fore front of public consciousness.

The combination of increased investment and ongoing regulatory actions geared towards reducing greenhouse-gas emissions and promoting a heightened consciousness of the importance of energy conservation might be good indicators for the construction field to heed – building green may, in fact, attract more “green” in the long run.

In other words, the possibility of saving money by building “green” is strong.

In 1998, the U.S. Green Building Council (USGBC), a non-profit coalition of building industry leaders launched the Leadership in Energy and Environmental Design (LEED) voluntary rating system. LEED establishes criteria for green or sustainable buildings by evaluating the location, design, construction and operational aspects of buildings.

The LEED rating system allows for four potential categories of certification. These categories are LEED Certified; LEED Silver; LEED Gold; and LEED Platinum.

The LEED standards recognize five key areas of human and environmental health to be considered in building and construction:

1. sustainable site development
2. water savings
3. energy efficiency
4. material selection
5. indoor environmental quality

While LEED standards are not currently mandatory, some government agencies have implemented incentive programs and tax benefits for following LEED standards and adopting a green approach to building.

It is expected that LEED standards will eventually be written into building codes and are expected to become the industry standard for residential and commercial construction projects.

For more information on LEED visit [www.usgbc.org](http://www.usgbc.org).

7. **Prepare for Economic Swings:** Here are a few thoughts on how to build a stronger business during challenging economic times:
- Build your customer base. A diverse customer base is best so that if one aspect of industry is slow hopefully the other areas of your customer base will continue to provide your business sustainable revenue.
  - Conserve cash; for we never truly know when we are going to experience those “rainy days”. Develop an annual budget, and stick to it.
  - Attitude, keep it positive, negativity is destructive. As a leader it is very important to remain positive. Your staff will be motivated by your example. It is essential that staff members know that they are appreciated and necessary for the success of the business.
  - Procrastination can be deadly. Decisiveness is critical. Timely and prudent decisions need to be made regarding cost cuts, and this often includes staffing. As harsh as it sounds, an economic downturn is an opportune time to weed-out staff members that are weak or who, perhaps, have a negative effect on the performance of others.
8. **Government Incentives:** Researching all opportunities for preferred status or tax relief is a sound strategy – and there are a number to consider, such as minority-owned status or construction standards.

According to current research, many local governments have adopted LEED incentive programs. These include tax credits, density bonuses, reduced fees, priority or expedited permitting, free or lower cost technical assistance, grants and low-interest loans. As noted above, LEED standards are not currently mandatory, but are an easy way to potentially reduce costs.

9. **Maximize IT Systems & Cost Control:** This might sound like a “no-brainer,” but technology enhancements are made every day. Further, the more a construction firm is able to rely on automated systems, checks and balances, the more reliable their cost management effort will be. Investing time for research and study – possibly through associations or peer groups – is time well spent!

**10. Design for Disaster...** an ounce of prevention: One thing we know for certain is that, sooner or later, there will be another natural disaster! The importance of mitigating disasters is probably best demonstrated by comparing the 2010 Chile earthquake which was the seventh strongest ever recorded. The death toll from that event was 342 compared with the death toll of over 200,000 people in Haiti. Building codes played a major role in reducing the loss of life in Chile.

Further, over 250,000 people were killed by disasters worldwide in 2010. Per a statement made by UN Secretary General *Ban Ki-Moon* during a United Nations meeting, this statistic made 2010 one of the deadliest years in more than a generation. With earthquakes, heat waves, floods and snowstorms affecting 208 million people, killing more than 250,000 and costing more than \$110 billion in losses last year alone, we can no longer wait for the next generation to take on the challenge of multi-hazard mitigation planning.

It is therefore important that globally we increase awareness about the physical and financial risks of natural hazards and educate people about how those risks can be addressed to counteract natural disasters. Based on research and [information compiled](#) by the *Industry Council for the Built Environment (ICBE)*, there are four primary groups of stakeholders whose leadership can increase the resiliency of the built environment:

- U.S. Congress
- State & Local Governments
- Federal Agencies
- Private Sector Corporations & Associations

A couple of recommendations for all levels of government are:

- Use life- cycle costs and savings rather than short term expenditure to determine infrastructure spending
- Encourage expansion of planning grants for communities so they can plan for future disasters, rather than focus on emergency responses
- Encouragement to implement more rigorous building site selection/approvals, design, maintenance of real estate

Recommendations for the private sector include:

- Education on how disaster mitigation works financially
- Educate property owners on the benefits of proper selection of where to build, quality of structure and how well building are maintained
- Organize and discuss strategies to prepare for natural disasters and for the recovery from natural disasters