



COMMERCIAL CONSTRUCTION AN INDUSTRY STUDY

Things you will learn from this whitepaper:

1. What other industries have a meaningful affect on commercial construction?
2. What are some of the most common challenges facing commercial contractors?
3. Why are commercial construction projects especially difficult during times of an economic downturn?
4. How do current financial regulations affect the commercial construction industry?

This whitepaper will have special interest to:

1. Attorneys consulting with construction contractors considering mergers or acquisitions.
2. Judges presiding over commercial litigation & business disputes.
3. Business mediators & arbitrators.
4. Financial & income tax advisors.
5. Those concerned with the valuation of commercial construction businesses.

Notice & Disclaimer

In a forensic accounting setting, the purpose of an industry analysis is to allow a comparison of the subject company to its industry. This comparison is vital to assess the strengths and weaknesses of the subject company, as well as its industry and company specific risks.

The following study contains a brief, selected analysis of the specified industry. It is based upon a review of current economic statistics, articles in the financial press, reviews found in current business periodicals and information posted on numerous internet sites. It does not purport to be all-inclusive or to contain all of the information which a prospective investor or lender may require. Projections and opinions are based upon information provided by third parties. We make no representations or assurances that this information is complete or accurate. Neither Mark S. Gottlieb, CPA, PC nor any of its officers, employees, or representatives make any representation as to the accuracy of completeness of this report or its contents, nor shall any of the foregoing have any liability resulting from the use of the information contained herein or otherwise supplied.

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Industry Overview

Commercial construction, the largest component of the U.S. construction industry, was energized by a robust, late 1990s economy. General economic strength spurred strong demand for services in the sector. Unlike residential building, however, commercial construction was unable to rely on shrinking interest rates as ballast against the souring economy of the early 21st century. Businesses began spending less on new and ongoing construction endeavors, and the industry suffered.

Commercial construction is generally grouped into three categories: office, retail and institutional construction. Subsets of institutional construction include municipal and public buildings, roads, bridges, sewers, pipelines, power plants, etc. The industry creates annual revenues in excess of \$450 billion, and is comprised of at least 80,000 firms. Among these are industry bellwethers such as Clark Construction Group, Perini Corporation and Turner Construction—which claim respective annual revenues of over \$1 billion—as well as small, local contractors, a majority of which claim annual revenues of less than \$1 million. The industry is competitive, diverse and well-terraced.

Competitive Landscape

The state of the U.S. economy directly influences demand for commercial construction services. Other factors of note include: demographic trends; social trends; and legislative appropriation for public expenditures. These variables affect individual firms uniquely, since many function in niche services and operate within limited geographic zones. Because local expertise is so prevalent in this field, subcontracting is common. Projects are often endowed by larger firms involved in more expansive contracts, or may be gathered locally.

Products, Operations & Technology

Due to the steady rise in project complexity, design-build contracts have become standard in the construction industry. Such contracts delegate the construction of a given project to the same firm that produced its design. This trend has encouraged previously build-only companies to develop design and engineering capabilities. In this sense, contractors have gradually become more expansive in their roles.

With large projects, however, a division of services is still conventional. Large firms often negotiate a contract with clients, thereby functioning as general contractor. In addition to contract negotiation, the general contractor creates a construction schedule and acquires equipment and building materials. The actual construction work is often farmed out to a subcontractor; or, in some cases, multiple subcontractors. While subcontractors provide the bulk of the labor, it is left to the general contractor to liaise with architects, engineers, consultants, suppliers, insurance providers, unions, attorneys, and ultimately, the client.

Subcontractors typically fall into two groups: those that specialize in “ground up” work (foundation, floors, walls, roof), and those that specialize in “finish out” work (interior, electrical, painting, plumbing, HVAC). Of these, “finish out” subcontractors come at a greater cost to general contractors, as their contributions are considered to be more skilled. Invariably, construction companies manage equipment, labor, and construction materials. While larger companies may own much of their



equipment and retain full-time construction crews, smaller companies tend to lease project-specific equipment and retain much of their labor force on a per project basis. On a large project, a subcontractor may even lease equipment directly from the general contractor by which it is retained.

Supervising contractors typically leverage their way into an overseeing position from a beginning in some particular craft or specialty. Traditionally, academic study has played a minor role in preparing contractors for the industry, though the inherent complexity of project management—especially on a commercial scale—has made higher levels of education increasingly desirable.

Sales & Marketing

Networking accounts for much of the new business solicited by firms. Architects, engineers, developers and industry information sources provide project leads to construction firms on a regular basis. Public projects are typically open to all bidders, whereas private-sector projects require an invitation to bid. Because of the competitive nature of awarding contracts, profit margins are relatively thin.

Contracts are rendered in three basic types: guaranteed maximum cost; fixed price (lump cost); and cost-plus-fee. Each contract carries associated risks:

Guaranteed maximum cost contracts see the owner paying for costs, supplies and incidentals to an agreed upon amount, at which point the contractor must bear all additional expenses. Savings are split evenly when project costs come in short of estimates.

Fixed price contracts are less favorable to project owners, as these entitle contractors to claim any potential cost savings.

In cost-plus-fee contracts, all costs are borne by the project owner, inclusive of the contractor's fee. Contracts carry completion deadlines; penalties for late completion are standard.

As a losing contract may be highly detrimental to a firm's financial status, prudent cost estimation is essential. Cash flow must be managed judiciously, for delayed and sporadic payments are endemic to the industry. At times, companies may experience lean periods as projects can be lengthy and payments withheld until project completion. This payment protocol is known as retainage, a standard contract feature. Weather and changes in material costs can also impair cash flow.

While different types of contracts afford options in risk management, risk cannot be abolished. Projects demand continuous payments, though revenue is often received at wide or varying intervals. Labor and material prices can fluctuate broadly; payables and receivables are high. Due to the complexity of cash flow and the generally large scale of commercial projects, computer technology has become standard in accounting and cost estimation.

Finance & Regulation



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Construction firms must also remain vigilant with regard to numerous local, state and federal building codes, safety regulations, hiring practices, etc. Most companies maintain detailed logs of activities concomitant to both public and private-sector projects. Of the two, public projects are most severely regulated.

Regional & International Issues

While a handful of giant construction firms exist, most firms operate within a limited geographic zone, and are therefore subject to local economic conditions. Spot shortages of skilled labor, localized material shortages for specific construction projects, and requirements to obtain localized environmental permits are examples of challenges typically faced by contractors.

Human Resources

Construction workers comprise 5.4 percent of the U.S. labor force. In many areas of the country the labor pool is heavily unionized. Therefore, workers are generally well-paid and construction firms must attempt to maximize project efficiency. Unskilled workers in the warehouse sector, for example, earned an average of \$16.50 per hour in the late 1990s. Workers with specialized technical skill earned nearly \$30 per hour. While most projects contain a large component of manual labor, many jobs in commercial construction require specific training or experience. Methods and technology have streamlined routine projects, but also raised the degree of skill necessary to perform many jobs.

Because construction work is largely seasonal, it is standard practice to keep a roster of full-time workers, and to hire additionally for projects as needed. The subsequent lack of workforce uniformity is augmented by the tendency of skilled workers to identify with their specialties rather than with a particular employer, as well as the tendency of employees to change employers often. Firms entrust workers to engage in extensive self-supervision, and staff are moved frequently from site to site.

The semi-transient nature of the labor pool attenuates firms' responsibility to provide long-term fringe benefits, and keeps the average expense at a manageable 24 percent addition to payroll. Greater attention to safety protocol has further curtailed expenses for most firms.

Critical Issues

Highly Cyclical Demand - The demand for commercial construction is linked inextricably to the health of the US economy. Because regional economies may or may not march in time with overall economic trends, firms may be variously affected depending upon the services they offer. Developing multiple specialties is one way firms attempt to hedge downturns in specific demand. Many companies choose to work in both the public and private sectors to further insulate themselves from the volatility of cyclical economies.

Uneven Revenues, Expenses - While commercial contractors need to cover a steady schedule of expenses, clients issue payments at random intervals. Per contractual agreement, large payments are often withheld until projects are complete. Prices for major raw materials like lumber, structural steel, and concrete fluctuate constantly, and inclement weather may impede project schedules and



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complicate cash flow. On larger projects, contractors handle commensurately complex cash flows, including progress payments to subcontractors.

Other Business Challenges

Availability of Skilled Personnel - In the next decade, a sizeable portion of skilled personnel will retire, presenting a worrisome challenge to the commercial construction industry. Currently, most companies have difficulty finding enough skilled workers for large projects. With the complexity of commercial projects increasing, the shortage of skilled personnel figures to grow even more acute. Both labor and management positions will be undermanned if current trends continue, and for many firms, the loss of a few skilled individuals can have a large effect.

Consolidation of Projects - As many construction customers consolidate and projects expand in scope, smaller firms fall more frequently into the role of subcontractor. Fewer (though larger) contracts further complicate cash flow and increase financial risk. Many smaller firms depend on a handful of annual contracts for the majority of revenue.

Safety Liability - The construction industry has a larger share of fatalities than any other industry. Strict compliance with OSHA standards is the norm, but the fact remains that workers operate potentially dangerous equipment. Some work on temporary scaffolding or at great heights and in bad weather. In 2003, cases of work-related injury and illness were 6.8 per 100 full-time construction workers, which is significantly higher than the 5.0 rate for the entire private sector.

High Insurance Costs - Contractors must pay high premiums for various insurance, including workers' compensation, general liability, and surety. Material and installation defects, along with unqualified or overworked employees are typical insurance issues. Poor bookkeeping may be problematic as well.

Building Mold Liability - While asbestos, lead-based paint and PCBs have historically been concerns in the commercial construction industry, toxic mold has surfaced as a troublesome issue. Mold remediation for "sick buildings" has become a commonly litigated issue. Because mold and fungi are naturally present in building materials, building mold liability has been particularly troublesome for builders. Technologies to curb the potential for mold growth have not provided end solutions, and contracts have recently begun addressing this issue.

Required Investment in Technology - While innovations in technology have substantially improved the speed at which projects are realized, trade tools now require a larger degree of operator expertise. Equipment has also become more varied and expensive. GPS systems, digital cameras, computers, laser scanners for measuring raw materials, and transmitters for positioning beams are just a few of the myriad technologies now utilized by contractors. Without such equipment firms sacrifice precision and efficiency, and are less likely to win contracts.

Business Trends

Specialization - Specialization is natural as most new contracts come from previous clients hiring for projects similar to those completed in the past. Framing, mechanical, demolition, roofing, electrical,



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public works and roads are major categories. While a range of specialties helps insulate against economic downturns, the size and specific nature of most projects forces firms to focus in narrow areas.

Joint Ventures/Pooling Expertise - As projects grow in size and complexity and contracts become schedule-oriented in order to mitigate costs, on-time completion becomes essential. Subcontractors are integral to many projects, and firms are behooved to pool expertise and financial resources for project bidding.

Construction Management, Design-Build - The technological sophistication of many projects and the increased popularity of design-build contracts encourage the integration of engineering and construction companies. This trend, once exclusive to only the largest of firms, has become increasingly common at regional contractors.

Repeat Business - Contracts are often awarded to builders with whom a client has established a professional relationship. While low cost remains important in contract negotiation, project owners may prioritize reliability and financial stability, bypassing bidding altogether.

Guaranteed Maximum Price Contracts - Because many projects are bid upon, client-friendly contracts have become typical. Guaranteed maximum price contracts have made accurate cost estimation imperative to a firm's success. Project management, fairly stagnant in nature, has become a secondary concern.

More Frequent Equipment, Staff Leasing - Because projects vary widely, most companies elect to lease equipment and employ workers on a per project basis. Office personnel and project managers remain constant to a firm's staff.

Security Considerations in Building Design - Expansive, low-level structures have become popular, since high buildings present greater security risks. Greater emphasis on evacuation routes and strong walls and windows is a growing trend, and the protection of air-circulation systems is another consideration (to prevent gas or biological attacks).

Industry Opportunities

Expanding Markets - Demand for commercial construction is expected to increase over the next decade. Replacement of many industrial facilities has been delayed for years, and other structures will need extensive remodeling. Healthcare facilities and residential homes for the elderly will be necessary to meet the requirements of an aging population. In fast-growing areas like the South and West, roads and municipal buildings are certain to be needed. Replacing and renovating schools in particular will further energize the market.

High Government Spending - Despite current and projected deficits, government spending on infrastructure projects should remain high during the next decade. Projects such as bridge and road construction will continue to receive adequate funding; highway construction alone climbed 4.5 percent in 2005. Construction and renovation of schools, which is funded at the both the state and federal levels, should steadily support the health of the commercial construction industry.



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Improved Construction Technology - Computer technology, from bookkeeping programs to specific industry-related software, has greatly reduced costs and errors in construction. New building methods and the increased availability of pre-fabricated materials have helped to reduce costs and promote efficiency.

Diversification into Homebuilding - As firms grow in size and capability, more commercial builders are diversifying into residential markets. With higher profit margins available, non-commercial markets hold a strong appeal for firms. Residential markets may also retain profitability in economic climates where commercial building suffers. However, homebuilding requires much different contractor skills, and land costs increase the speculative nature of building. Intense demographic research and heavy marketing are needed.



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