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Challenges of Estimating Soft Costs in Construction: Identifying and Quantifying Non-Material Expenses

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Abstract

Soft costs of construction are costs which arise beyond materials like design fees, permit fees, insurance fees, legal fees and project management fees to have an important impact on whether the project will be successful or not. These costs matter, even if they are intangible, and often are underestimated, owing to their variability. This paper looks at the issues involving soft costs, covering complexities of design, regulatory, and fee uncertainty associated with legal and administrative schedule items. Second, we provide effective strategies that construction professionals can employ to improve the accuracy of their soft cost estimates. Early identification of possible soft costs during the plan phase, comprehensive contingency planning to deal with unexpected expenses, and the adoption of position of the advanced construction management technologies are among these strategies. With implementation of these approaches, construction professionals can increase their ability to understand and manage soft costs and in doing so lead to successful project outcomes and financial stability.

Keywords: Soft Costs, Construction Estimation, Non-Material Expenses, Design Fees, Permits, Insurance, Project Management, Legal Costs.

Introduction

Hard and soft costs are covered under construction projects and play an important role in the budgeting and whole project execution. Tangible expenses, that is hard costs also include materials, equipment, labor and are easier to estimate relative to soft costs because they are quantifiable. Examples of soft costs are the things that can have a large impact on a project's success: interior design, layout, and architect, among other things. And those include design fee, permits, insurance, legal fees, and project management fees, which may amount to a sizable chunk of your total project budget—from 25% to even 50% [1].

Most of the challenges in estimating soft costs arise, chiefly, in their intangibility and their difficulty of being accurately forecasted in early project planning phases. Unlike hard costs that can be derived from fixed prices or historical data, soft costs are generally derived by an amalgamation of factors, such as project complexity, regulatory requirements, market conditions. It’s very unpredictable for a project manager to allocate budget for these expenses thus making it easy to underestimate them and risk a very big under estimate.

The failure to pin down the soft costs can be costly: budget overruns, cash flow hurdles, and project delays [2]. With the increasing complexity and competition of construction projects, professionals in the industry need to improve their soft cost understanding and improve their estimation technique. In this paper we

analyze soft costs components, problems with the estimation of soft costs and provide actionable strategies for better forecasting. Adoption of these strategies can help construction professionals to improve their budgeting processes and produce more successful project outcomes.

Components of Soft Costs

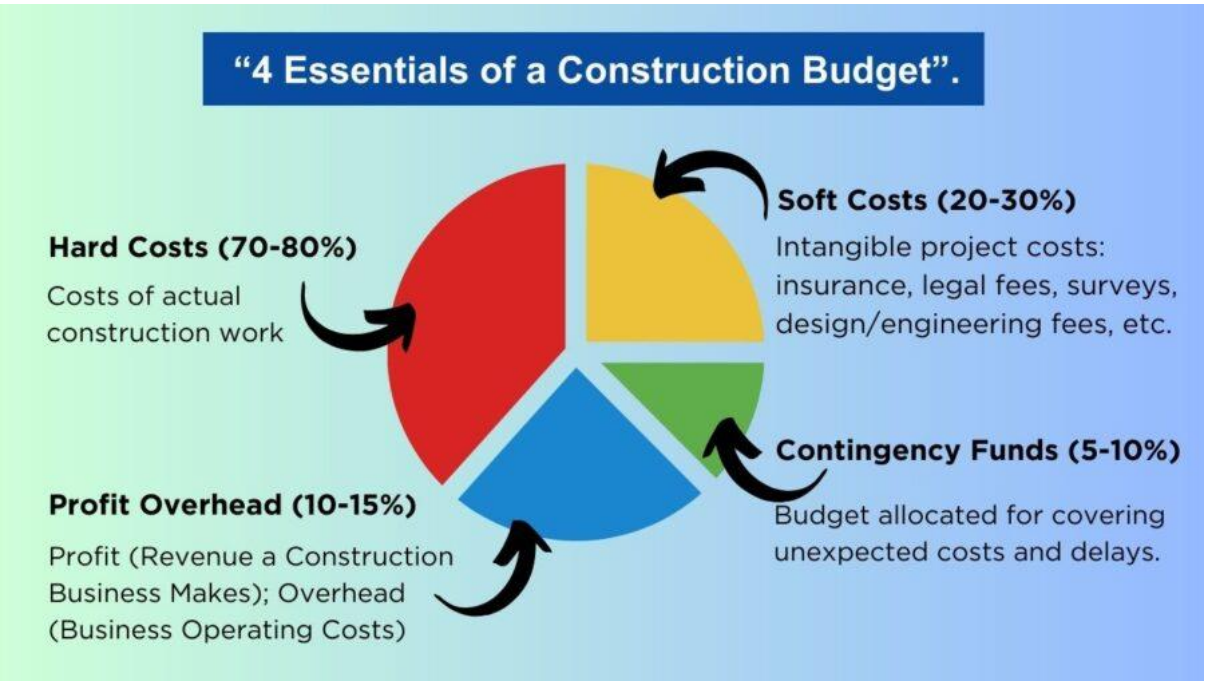

Figure 1: 4 Essentials of a Construction Budget: Illustrating the allocation of costs within a construction project, including hard costs, soft costs, profit overhead, and contingency funds.

Design and Engineering Fees

Fees associated with architectural services, engineering consulting, and design planning all are (and should be) included in the design costs necessary to undertake successful construction. The amount of these fees can be wildly differing depending on how complex the project is and usually averages 5% to 15% of the total budget [3]. Specifically, highly engineered analysis and consultation projects are oftentimes required for specialized structures such as high rise buildings, healthcare facilities, or environmentally sensitive structures. In addition to increasing the cost associated with soft costs of design, these requirements can cause the project time line to extend, further complicating cost estimates. In scenarios like these, the importance of the need for specialized design expertise is served in the need of accurate budgeting design and engineering fees to not put the project under financial stress that one unplanned for.

Permits and Regulatory Fees

Key to the compliance of a construction project with local, state, and federal regulations are permits and regulatory fees. The costs for these are very different depending upon the project and they will depend on where the project is and how large or complex that project is. An example is that, in densly populated urban area where a building permit takes much more money and time, because strict zoning, regulations, environmental regulations and the government involve in local community [4]. Not to mention that many projects require many more permits, including environmental clearances, land use permits, and safety inspections, all adding to soft costs. Much of the work entailed in determining the permit fee budget is in

conduct of thorough research and planning to provide for potential fluctuations in permit fees as due to the variability and complexity of these regulatory requirements.

Insurance and Financing Costs

Soft costs include insurance with most construction projects, and this will likely continue—it's essential for backing up against unforeseen risks such as accidents, natural disasters, and even property damage with policies like builder's risk, general liability and workers' compensation. Soft costs also include financing costs, using loan interest, bond premiums and financial fees. While important to funding financial security, these expenses can be difficult to precisely estimate since they rely on project specific risks and financing strategies [5]. One example is that changes in interest rates or changes in the scope of the project can result in a very big difference in the overall financing cost and your construction manager must devise flexible budgeting strategies to absorb these change variances.

Legal and Compliance Fees

A lesser known (and expensive) part of land development is the legal cost. What makes legal fees so variable is that the nature of them can be difficult to estimate in advance — after all, you don't know whether there will be disputes, or how many iterations there will be of land use approvals, or how many compliance issues occurred that you weren't aware of. Specifically, for complex projects (especially in contentious areas) extensive legal services are often needed to traverse thickets of regulations, or to wrestle with land use problems or community opposition [6]. Therefore, project managers must spend enough money on legal fees, taking into consideration the possibility to use its services in the course of the entire project lifecycle.

Administrative and Project Management costs

As a broad field, project management covers every aspect of what is involved in running a construction project, from the administrative and operational to the administrative and operational work of a construction project. What costs are involved in project management: project managers salaries, administrative salaries, salaries for external consultants who are called in to deliver the project smoothly? These services are important to sustaining efficiency and meeting deadlines, however their accuracy of quantification does reduce throughout the budgeting early stages [7]. Often, the complexity of modern construction projects requires a strong project management framework, which underscores the weak forecasting and allocation of budget for the critical administrative cost associated with it. This way they minimize the chances of having project budget to fail and a successful project completion.

Estimating Soft Costs Results in Challenges

Intangibility of Costs and Variability

Compared to hard costs, soft costs are difficult to estimate, owing to their intangible, and variable nature. While hard costs (materials and labor that can be quantified and accounted for early in the project) are constant, soft costs tend to be floating costs related to services (concepts that can fluctuate sharply). Variations in design fees, legal services, and regulatory fees are especially sensitive and arise because of the complexity of the project; experiences of the professionals involved; and when things don't go as planned during the construction phase. As an example, unexpected legal disputes or further design revision due to changing client requirements or regulatory feedback can easily create huge soft costs, thereby over

budget and overrun the project [8]. The budgeting process is further complicated if the costs of these services are not known, and that's why construction professionals need to be flexible and adaptable in their estimations of soft costs.

Regional and Regulatory Variations

A major problem in estimating soft costs is that there are regional and regulatory perturbations across various areas. Permit and regulatory fees can vary greatly by location of the project. For example, because of the tight zoning laws, environmental restrictions and complicated permitting processes characteristic of densely populated areas, urban projects often pay higher fees. For instance, rural projects may have their own set of challenges because infrastructure improvements on require certain land uses which are needed by the local local authorities. However, these regional differences make the application of a standardized approach to soft costs difficult, which may lead to significant financial pitfalls for contractors who do not sufficiently anticipate local regulatory environments when setting an initial budget forecast.

Underestimation in Budgeting

Soft costs during planning phase are a prevalent issue in the construction industry – with professionals often underestimating estimated costs. So often it results from a primary emphasis on hard costs, like materials and labor, which are more tangible and easier to quantify. As a result, soft costs that typically were unplanned, such as further permitting and insurance costs, legal complications, or anything unexpected that brings the project over budget, start appearing as the projects get underway. It can easily create financial stress for projects and, in worst case scenarios, postpone the completion of projects if extra funds are not readily on hand to account for these unforeseen expenses [10]. This problem can only be solved through an elaborate analysis and anticipation for soft cost that gives construction professionals the ability to properly allocate resources throughout the course of project development and reduce the financial risk on project development.

Accurate Estimation of Soft Costs: Strategies

Soft Cost Identification Early

However, effective underestimation of soft costs by project managers and estimators is not possible without timely identification of these costs. From the beginning the architect, the legal consultant, and the regulatory agencies should be engaged to discuss through all of the possible soft costs. By taking this proactive approach, the project team has the ability to hear from several different experts, who provide detailed information about expenses such as design, permits and legal requirements. Early identification of soft costs allows project managers to build a more complete and accurate project budget that truly considers the financial requirements of the project [11]. Forethought also means that we're putting together the budget correctly, which means we're not going to have to fight with delays and disputes later down the line.

Incorporating Contingency Funds in Quantification Exercise

Soft costs are inherently unpredictable, and thus soft costs need to included in the project budget. Generally, a contingency fund of anything from 10% to 15 % of estimated soft costs can provide valuable financial insurance in the event of unexpected expenses. Some of these could be additional design revisions due to changes in client requirements, unexpected legal problems, or new (possibly unfortunate)

regulatory changes made at the last minute. Project teams can set up contingency funds and by allotting these, if ever an unplanned expense arises, that will ensure that you do not blow the financial viability of the project. This strategy is about maintaining financial stability and being able to react to issues which affect the teams, without affecting the overall project duration and quality.

Employment of Construction Management Software

The accuracy of soft cost forecasting can be greatly improved by using software tools for construction management such as Building Information Modeling (BIM) and tailored cost estimation platforms. With these technologies, tracking the expenses in real time makes it possible for the project managers to carry the necessary adjustments. The integration of construction management software into the project management process can help teams more effectively monitor soft cost expenditures, and thus more effectively adjust budgets as needed [13]. This real time data visibility enables better estimation accuracy as well as better project efficiency by allowing more informed decisions throughout the project life cycle.

Stakeholder Collaboration

Accurate estimation for soft costs requires collaboration with architects, engineers, legal advisors and regulatory officials. All parties regularly communicate with one another, so each party understands what could be a cost driver, regulatory requirement and is properly aware of complexity. A collaborative approach to this also encourages 'buy in' from all parties and helps identify any possible barriers to success before they get out of hand. Open dialogue and collaboration on a project team can help anticipate changes, address project challenges in more proactive fashion, and create more precise cost estimates that truly reflect the financial landscape of the project [14]. The opportunity for this type of comprehensive stakeholder engagement can mean more successful project outcomes and fewer financial discrepancies between CD and hard costs.

Conclusion

Construction project cost estimation is a challenging but important process in that it is directly related to the firm’s success. Design fees, permits, insurance, legal services, project management fees are some of the most important of the above costs which are imperative for the roll out and smooth execution of any construction undertaking. Soft costs are however underestimations or non consideration during early stages of project design due to the nature of being an intangible and variable.

In this paper, we describe a number of strategies that, if implemented, would help to improve the quality of soft cost estimation. Early identification of soft costs particularly through partnerships with partners, incorporating of contingency funds that provide flexibility of the monies, and utilization of the advanced construction management software in tracking and forecasting are key strategies of these. The use of these proactive measures by construction professionals will greatly improve the accuracy of these soft cost estimates.

Using these strategies is not only moving away from the risk of budget overruns but also in efficiently maintaining financial and operational integrity of the projects. Demand for successful project outcomes outpaces a robust understanding of soft costs and effective estimation practice will continue for an evolving construction landscape, especially in the face of ever growing project complexities and regulatory requirements. Accurate construction costs estimation has always been a challenge, but by

prioritizing it, construction teams can better conquer difficult projects and deliver a quality product on time and on budget.

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