



An Analysis of
**UNIT-PRICE
PROCUREMENT**





The RCI-IIBEC Foundation commissioned this study to understand the impact of the use of unit-price procurement in the building industry. Paul S. Chinowsky, University of Colorado Boulder, and Gordon Kingsley, Georgia Institute of Technology, were engaged to conduct the research and present findings.

The RCI-IIBEC Foundation's mission is to support research, education, and the dissemination of information for issues important to the building enclosure industry.

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EXECUTIVE SUMMARY

Unit-price procurement is being adopted in new formats, such as cooperative purchasing agreements, that are raising concerns within the building industry over including project costs, life safety, and equity. Project audits at the national level at the General Services Administration (GSA), at state levels (including the state of Indiana), county levels (including Los Angeles County, California), and at the city level (including the city of Long Beach, California) have all documented increased use of the unit-price procurement process, including cooperative purchase agreements. In this study, the team focused on the increased application of unit-price procurement of technical and design services within the public sector. Of particular interest was the use of this practice around building enclosures. The goals of the study were to determine the following:

- The current use of unit-based procurement and cooperative purchasing agreements
- The factors that are leading to increased use of unit-based procurement and cooperative purchasing agreements
- The impact of the procurement practice on project solutions, including cost, schedule, performance, and life-safety
- The impact of the procurement practice on the ability of companies to serve potential clients

The data underlying this study are drawn from targeted semistructured interviews with professionals representing different roles and perspectives in the unit-price procurement process. Twenty-one interviews were conducted during 2021 and 2022. Our interviews were with vendors, cooperative purchasing list owners, regional cooperative purchasing agents, public owner facility managers, and public procurement staff.

Based on these interviews and a review of the literature, the study found that the unit-price approach, especially within cooperative purchasing arrangements, introduces opportunities for abuse in the prequalification phase, the design phase, and the construction phase. Of particular concern are the following issues:

- **Access in Qualification.** Cooperative purchasing groups are moving beyond the qualifications of the vendor to include elements such as price and familiarity with the owner organization. Greater regulation is required to ensure that access is available to all potential vendors in the prequalification process for cooperative purchasing groups.
- **National Pricing Practices.** National pricing practices do not incorporate competitive bidding practices for public projects, which can lead to over expenditure and potential cost overruns.
- **Independent and Professional Oversight.** The study has revealed repeated circumstances where independent and/or professional oversight and input were not included in a project. Building regulations must be updated to better protect the public against projects that bypass life-safety protections.

- **Building Code Inconsistency.** Building code guidance can reduce or eliminate the opportunity for inappropriate specifications and subsequently, material overcharging. However, this is not the case in most locations. This leaves the door open for inappropriate specifications, pricing, and installation to be introduced. Building codes need to be updated to address these loopholes.

In summary, the intent of unit-price procurement and cooperative purchasing is based on well-intentioned approaches to addressing issues such as disaster recovery. However, this original intent has ultimately matured to enable the practice to be abused and misapplied in some jurisdictions. This research effort details the areas where adjustments are required to this practice. Without these adjustments, it is anticipated that the concerns around unit-price procurement will continue to increase along with the excess cost to taxpayers.

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INTRODUCTION

Public projects are increasingly under greater strain to meet schedule and budget constraints, with external drivers such as supply chain delays, community outreach, increased weather events, and population movements all placing additional demands on projects. When these additional factors are combined with internal agency factors such as reductions in personnel, greater project complexity, and reduced schedules, the pressure to initiate projects at a faster rate has caused public entities to explore multiple procurement options. One such option, unit-price procurement, is not new or novel but is being adopted in new formats such as cooperative purchasing agreements. This is raising concerns within the building industry over issues such as project costs, life safety, and equity. Project audits at the national level at the General Services Administration (GSA), at state levels including the state of Indiana, county levels including Los Angeles County, and at the city level including the city of Long Beach, have all documented increased use of the unit-price procurement process, including cooperative purchase agreements.

In this study, the team focused on the increased application of unit-price procurement of technical and design services within the public sector. Of particular interest was the use of this practice around building enclosures. The goals of the study were to determine the following:

1. The current use of unit-based procurement and cooperative purchasing agreements
2. The factors that are leading to increased use of unit-based procurement and cooperative purchasing agreements
3. The impact of the procurement practice on project solutions including cost, schedule, performance, and life-safety
4. The impact of the procurement practice on the ability of companies to serve potential clients

To answer these research questions, a set of key objectives were put in place as follows:

- *Provide a review of the research on unit-based procurement and cooperative purchasing agreements.* While there is minimal research on the overall impact of unit-priced procurement in the literature today, there is a significant body of literature discussing the possible role of this procurement type in projects as well as a notable number of audit reports that have been published on the topic.
- *Provide an experiential-based case perspective.* Unit-based procurement affects project development from project proposals to final implementation within an organization. The specific impact of this practice needs to be examined from both an owner and provider perspective, the goal being to obtain narratives on how the process works, where the encouragement to adopt this practice originates, how equity in eligibility is addressed, and how life-safety concerns are addressed.

To meet these objectives, the team undertook a series of interviews and case studies to obtain a deeper understanding of the specific issues and concerns associated with this practice from both the vendor and owner perspectives. The interviews explored how unit-based projects and non-unit-based projects differ in terms of producing outcomes. The interviews emphasized how the use of this procurement practice positively and negatively affects and impacts the costs and quality associated with project outcomes. From these interviews, conclusions and recommendations were developed to both recognize the pressures that have increased the use of unit-price procurement and address the key concerns over its current implementation.

Background

The issue of unit-price procurement is intertwined with several issues, including cooperative purchasing agreements, indefinite delivery, indefinite quantity contracting, unit-price contracting, and quantity-based purchasing. The common thread through all these related terms and approaches is the concept of having a single unit be the basis of cost. This can be a length of road, square of roofing, or area of undeveloped land. This form of procurement is not new to the engineering-construction field. Many highway projects utilize this approach to contracting as it provides a uniform ability to compare bids from competing firms. In these types of projects where the tasks are repetitive and the price is heavily dependent on materials, a unit-price contract can make sense.¹ Additionally, a significant influence on the use of unit-price contracts has traditionally been the movement of risk from the owner to the contractor.²

While this transfer of risk and reduction in price uncertainties has been beneficial for owners, it introduces challenges for the vendors. In particular, the burden is placed on the vendor to justify when costs exceed the anticipated unit cost. For example, unforeseen site conditions or unforeseen building conditions during a retrofit can require significant engineering expertise with associated costs. These unforeseen costs are generally the responsibility of the vendor to justify to the owner for reimbursement purposes. Similar scenarios exist for material escalation costs, rising labor costs, and supply chain challenges. In each case, the vendor must rely on a well-written contract to provide avenues for reimbursement above the agreed upon unit-price.

The well-established use of unit-price contracting in construction provided the original intent for expanding the concept into the realm of cooperative purchasing. While there is not a uniformly accepted definition of cooperative purchasing, it is generally defined as “the cooperation between two or more organizations in a purchasing group in one or more steps of the purchasing process by sharing and/or bundling their purchasing volumes, information, and/or resources.”³

A National Association of State Procurement Officers (NASPO) *Issue Brief*⁴ describes three general forms of cooperative purchasing agreements that have emerged:

- “True Cooperatives,” in which two or more organizations combine their needs and requirements to solicit bids or offers for goods or services
- “Piggyback Options,” in which one or more organizations represent their specific requirements and include an option for other organizations to “ride” or “bridge” the contract as awarded
- Third party aggregators, in which an organization brings together multiple organizations to represent their requirements and manage the resulting contract or contractor

The intended and assumed advantage to these approaches are lower purchasing costs, reduced owner workload, reduced supply risks, and higher quality.

1 Spellerberg, Jamie (2021). “Construction Contracts: What Is a Unit Price Contract and When Should It Be Used?” Levelset, <https://www.levelset.com/blog/unit-price-contract/>.

2 Mandell, Svante & Nilsson, Jan-Eric. (2010). A Comparison of Unit Price and Fixed Price Contracts for Infrastructure Construction Projects.

3 Schotanus, Fredo and Telgen, Jan (2007). “Developing a typology of organisational forms of cooperative purchasing,” *Journal of Purchasing and Supply Management*, 13(1): 53–68.

4 The NASPO *Issue Brief* was accessed electronically in August 2022 at the following site: https://www.naspo.org/wp-content/uploads/2019/12/Cooperative_Purchasing0410update.pdf.

The cooperative purchasing approach has rapidly spread across municipalities, school districts, and other public agencies, particularly in the areas of construction and equipment, operations and maintenance, technology and telecom, and transportation.⁵

It is the first of these areas that is the focus of this study. Participants in the current study acknowledged that cooperative purchasing for construction and engineering had initial goals that were needed for specific circumstances. Being able to rapidly procure services after a natural disaster was a scenario where cooperative purchasing provided benefits. Similarly, in scenarios where owner organizations were continuing the trend towards smaller staffs and higher turnover, the ability to prequalify vendors provided the ability to undertake projects with reduced concerns over project delivery.

However, the same cooperative purchasing approach that provided these benefits has also led to challenges to this approach. With policy being developed by different groups, from legislatures to school boards and state procurement officials, inconsistency is exacerbating concerns. As detailed in this study, from prequalification to construction, the cooperative purchasing approach based on unit-price procurement is facing industry and legal challenges.

The implementation of cooperative purchasing in the engineering and construction sector has been accompanied by legal challenges in multiple locations. These challenges have spanned several issues, but the issue of price and overpricing has been a key factor in the legal challenges.

One notable challenge to the practice occurred in Ohio with the Columbus City Schools and the Pike County district. The case involved a multimillion-dollar lawsuit over allegedly defective school roofs. The Ohio Controlling Board stated that the roofing materials were not compliant with the Ohio Building Code.

The issue of overpricing has been raised in several states, resulting in some cases in new legislation restricting the practice while in others resulting in notices from state auditors. For example, in Arizona the auditor general in a note to state agencies stated, “We have noted serious problems with purchasing cooperatives, including one that oversaw vendors that substituted unauthorized products and overcharged nine Arizona school districts more than \$175,000.”⁶ Similar audits in Baltimore County Public Schools estimated overpayment of \$11 million, and Texas found overbilling of an estimated \$1.3 million per year.⁷

In response to these lawsuits and other challenges, regulatory approaches are being introduced in multiple states. It is yet to be seen if these will ultimately provide the protection to taxpayers that is anticipated. In particular, the issues surrounding cooperative purchasing in the context of construction services are not limited to one point in the process. Based on continuing concerns from the vendor community, the challenges to cooperative purchasing are not ending anytime soon.

5 Irby, Paul and Rimes, Tammy (2019). “Leveraging Cooperative Purchasing to Maximize Your SLED Revenue,” <https://on24static.akamaized.net/event/20/65/79/3/rt/1/documents/resourceList1569269864530/deltekleveragingcooperativepurchasingslides1569269863408.pdf>.

6 Office of the Auditor General (2011), “Due Diligence Is Imperative,” https://www.azauditor.gov/sites/default/files/Fraud_Alert_11-01.pdf.

7 Dziuban, Robert (2017). “This is why the cost of school building projects are literally going through the roof,” Penn Live, April 6, 2017.

EXAMPLE CHALLENGES

Qualifications-Based Selection (QBS) as a Solution

The challenges associated with cooperative purchasing and unit-price procurement could be addressed by implementing QBS as a procurement alternative. In this process, professional services are procured based on qualifications without initial consideration of price. This eliminates controversy around national prices as an initial starting point for procurement. Rather, selection of potential vendors for design, supply, or installation is initially based on qualification statements focusing on the ability to perform the required work as well as the ability to bring an appropriate team together that can supply the expertise required for a specific project. From a short-list of potential vendors, the selection process can then move to price considerations and final selection.

The advantage to this process is that it levels the opportunity to perform services among many vendors. This addresses the access question that is increasingly associated with cooperative purchasing agreements. Additionally, it grounds the selection process in established legal frameworks to reduce the number of challenges to the selection process. And finally, incorporating QBS can reduce the cost questions by including a process that has demonstrated advantages in cost, schedule, owner satisfaction, and innovation.

For over 50 years the QBS process has been used by federal, state, and local governments to select professional architectural, engineering, and design firms for public projects. Signed into law in October 1972, Public Law 92-582, authored by Representative Jack Brooks of Texas, ushered in a new process for procuring the selection of architects and engineers that started with qualifications. During decades of use by the federal government and most state and local governments, QBS has proven to be more efficient and less costly when considering total life-cycle costs than the use of a selection system using price as a criteria. For this reason, it is not surprising that 46 of 50 states have mini-Brooks Act statutes, and two of the remaining follow QBS-type procedures.

QBS entails a proven step-by-step process that facilitates the selection of a design professional firm based on qualifications and competence in relation to the scope of the project and facilitates the development of an appropriate scope of work for the project. The process is straightforward and easy to implement. It is objective and fair. It can be well documented, and it is open to public scrutiny. Due to its track record of success, it is recommended by the American Bar Association in its *2000 Model Procurement Code for State and Local Governments*.

Methodology

The questions set forth regarding unit-price procurement pose a particular challenge from a research design perspective. As we began our exploration, we observed that respondent relationships to unit-price transactions vary significantly. Some professionals may view unit-price procurement from the context of a construction project. This is particularly true from an owner-facility management perspective as well as from construction service providers and associated subcontractors. Other professionals engaged in unit-price procurement, such as the vendor, the cooperative agents, and the owner-procurement staff approach unit-price procurement on a transactional basis. These varied perspectives on the scope and nature of the underlying phenomena make it challenging to define the boundaries of any specific case study. The distribution of responsibilities across a relatively large number of professionals, organizations, and contractual relationships frequently led to respondents having a limited understanding of the full nature and consequences of the transactions in which they were engaged.

The data underlying this study are drawn from targeted semistructured interviews with professionals representing different roles and perspectives in the unit-price procurement process. Twenty-one interviews were conducted during 2021 and 2022. Our interviews were with vendors, cooperative purchasing list owners, regional cooperative purchasing agents, public owner facility managers, and public procurement staff. Respondents were also selected based on size. In this context, size reflects respondent estimates of the number of unit price transactions in which the organizations engage on an annual basis and whether respondent organizations have sufficient human capital for understanding and managing procurement processes. Interviews were conducted with representatives of organizations ranging from relatively large to relatively small. In addition, we sought to have a broad geographic distribution of respondents. This was important to get a sense of the range of legal environments for unit-price procurement (ranging from states in which this purchasing method is not allowed to ones in which it is a preferred method of public procurement).

To identify a sample frame for respondents we drew upon nominations from International Institute of Building Enclosure Consultants (IIBEC) members as well as membership lists from IIBEC, the National Association of State Procurement Officers (NASPO), and the School Superintendents Association (AASA). For owners we drew from IIBEC's recently compiled list of public sector officials engaged in facilities management for K–12 school districts. Of the 87 public sector managers on that list, we found that 40 continued to serve in tasks related to facilities management and/or procurement. Requests for interviews (extended to all 40 public sector managers) yielded 4 managers agreeing to be interviewed.

We entered into the study with a working hypothesis that the most challenging and problematic applications of unit-price procurement would be observed amongst small public sector owners (such as small towns and school districts) engaging with relatively large vendors or cooperative purchasing agents. We found partial support for this hypothesis; however, the complexity of the working relationships associated with this form of contracting did not always fit neatly into a large-small dichotomy.

The issue of overpricing has been raised in several states resulting in new legislation restricting the practice in some cases while resulting in notices from state auditors in others.

Semistructured interviews are designed to collect data across a common set of themes. However, respondents have the latitude to respond in an open-ended fashion. This allows the research team to explore points of commonality across respondents as well as the variation in responses in the content of the information provided. Of particular interest to this inquiry are differences in the respondent perspectives on the nature of unit-price procurement, the boundaries of contractual relations that undergird specific transactions, and perceptions regarding the strengths and limitations of the unit-price procurement process.

Given the primary themes explored in this study, the interviews followed a similar focus with the areas of interest focused on:

1. The current use of unit-prices procurement and cooperative purchasing agreements across the portfolio of transactions in which respondents are engaged
2. The factors that lead to increased use of unit-price procurement and cooperative purchasing agreements
3. The impact of unit-price and alternative procurement practices on project solutions including cost, schedule, performance, and life-safety
4. The impact of unit-price and alternative procurement practice on the ability of companies to serve potential clients

In addition to collecting interview data with professionals associated with these themes we also review documents from respondents, the research literature, and the evaluation literature. Our strategy here is to look for points of convergence and divergence between documents and interview data.

As the research team began the process of collecting semistructured interview data, we also explored developing case studies that focused on a representative transaction for respondents. This approach proved impractical. Respondents found it challenging to identify a representative case in which all parties to the transaction were still available for interview, and they reported that the level of turnover for many of the organizations involved in the transactions has been relatively high. Second, unit-price procurement is an evolving practice shaped by litigation of contract disputes and a changing legal landscape at the state and local levels. Cases nominated from past contexts were less likely to remain representative of the current operating environments.

Simply put, the challenge to cooperative purchasing agreements by project vendors is that owners are paying inflated prices to complete projects due to inappropriate procurement practices.

The advantage of doing a broader range of interviews is that we gather data from a wider range of organizations and experiences. This allows us to explore the similarities and differences across a wider set of cases. The findings of this report are based on comparisons of experiences across different types of organizations and different classes of professionals with distinctive perspectives of unit-price procurement.

What Are Construction Specifications?

The Dictionary of Architecture & Construction defines construction specifications, i.e., specs, as, “a written document describing in detail the scope of work, materials to be used, methods of installation, and quality of workmanship for a parcel of work to be placed under contract; usually utilized in conjunction with working (contract) drawings in building construction.” Specs are complete during the design phase of the project and serve to clarify project details, set expectations, and determine pricing.

Specifications often include information about:

- The scope of work
- The materials for the project
- The timeline and important project milestones
- Methods of installation
- Quality of workmanship
- Testing requirements
- National, state, and company safety standards

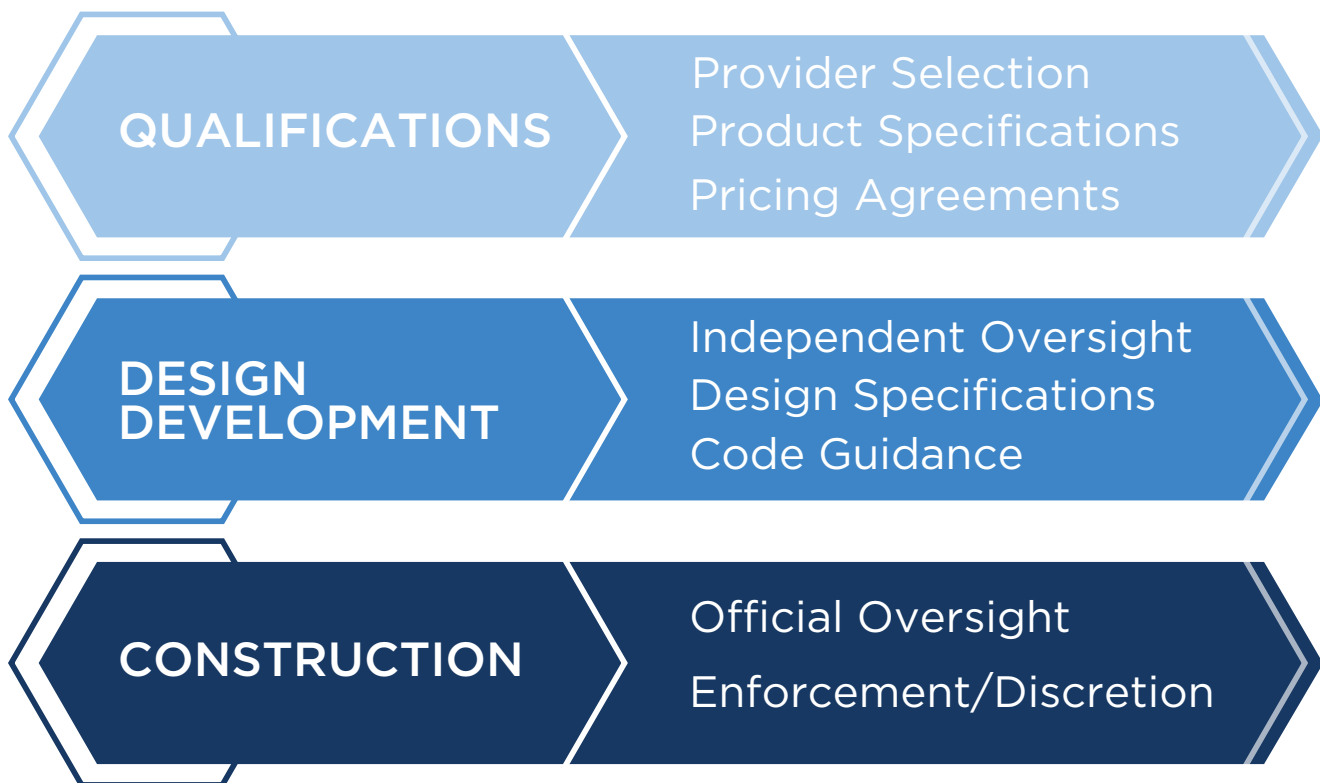
There are three main types of construction specifications commonly used on projects:

- **Prescriptive:** Provides step-by-step details about the required materials and the preferred means of installation. Can be divided into three subparts: General provisions, Required products, and execution procedures.
- **Performance:** Describes the operational requirements of the finished project.
- **Proprietary:** Although not as commonly used, these specs are used to detail very specific material and resource requirements for the project.

THE UNIT-PRICE CHALLENGE: AN OVERVIEW

Unit-price procurement is challenging due to the nature of how it is perceived by different stakeholders in different geographic regions. In contrast to many procurement, design, construction, and costing practices such as qualifications-based procurement, or design-bid-build, there is not a single point in the project or a single approach that fully encompasses the practice or ramifications of unit-price procurement. In fact, the practice has been intertwined with issues such as cooperative purchasing, indefinite delivery contracts, and job-shop purchasing. However, the current focus on cooperative purchasing agreements is the place where unit-price procurement is receiving the greatest scrutiny. It is in this context that we examine the underlying issues with the practice.

In this section, we separate the overall challenge of this pricing approach into component parts based on the project timeline. Three aspects of the project timeline are emphasized: qualifications, design development, and construction. As illustrated, each of these components is broken down into smaller segments introducing the general topic of concern. The next section provides a detailed look at each of these components. However, as an introduction to the issues, we first present an introduction to the major components in the project timeline followed by general comments from interviewees that set the stage for a further analysis of specific issues.



Qualifications

The qualifications stage was the first segment of the project timeline that drew considerable attention during this research. The issues in this phase focus on the way firms and vendors are placed on approved lists for consideration in future projects. Significant concern was voiced over opaque decision-making, preferred treatment, and unfair requirements. Concurrently, concerns were raised focusing on how product specifications were put into place prior to project execution. Concerns surrounding the appropriateness of specifications, the oversight of specifications, and the qualifications around how specifications were put in place were all raised by interviewees. Finally, the issue of pricing agreements was a common issue raised during interviews. This is also where many of the existing disputes over this practice originated. Simply put, the challenge to cooperative purchasing agreements by project vendors is that owners are paying inflated prices to complete projects due to inappropriate procurement practices.

Design Development

The second phase of the project timeline where collaborative purchasing agreements find opposition is in design development, where decisions are made regarding design solutions. This phase was repeatedly highlighted by interviewees from the contractor and purchasing agent communities due to its life-safety implications. Respondents from the vendor and owner communities also acknowledged the potential for these risks. While not implying that anyone would intentionally put an individual's safety at risk, research participants did not hesitate to highlight the potential risks from suppliers pushing specific products and dissuading the inclusion of outside consultants. Additionally, the risk increased with owners who focused on reducing costs by depending on suppliers to provide engineering services rather than employing independent oversight by specialty consultants. In addition to life safety, the design-development phase brings into play concerns centering on design specifications and code guidance. These issues are linked in that areas that have greater building code guidance around building enclosure were found to have fewer concerns around inappropriate specification development. In contrast, areas that provided greater latitude to vendors received significant attention as to the potential abuses that occur in the development of individual project specifications. Respondents of all types noted that the state and local governments that they serve lack sufficient capacity for the enforcement of contracting laws and code guidance. In particular, the concerns focused on specifications being developed that favored individual suppliers, specifications being developed that favored individual products over appropriateness of the design, and specifications being developed with no independent oversight from qualified specialists.

While the design-development phase receives significant attention due to concerns over life safety, it should also be noted that this phase exemplifies the regional nature of the issue. Depending on local and state guidelines, the experience of the owners, and the capacity of local building departments, these issues are nonexistent in some areas. In fact, some interviewees were surprised that these issues exist in some areas as they have not encountered such issues. We bring this up not to diminish the seriousness of the issue, but rather to emphasize that the inconsistency of the issue is reducing the attention that it deserves. The lack of a unified geographic concern is resulting in a fractured voice within the industry and thus reducing the visibility of this critical issue.

Construction

The third phase of the project timeline where unit-price issues were identified is during construction. Of particular concern in this phase to project interviewees were issues related to project oversight. The first of these issues focuses on regulatory oversight from local jurisdictions. While this issue is specific to individual jurisdictions, it is a significant concern in such areas. Specifically, the interviewees stated that in specific areas the local building department is not always informed of projects as the projects do not require building permits under local ordinances. However, these same projects are being completed on public facilities, which inherently creates a life-safety scenario. It is unclear how widespread this issue is across the country, but further investigation is warranted as this appears to be a regulatory loophole requiring immediate attention.

The second issue within this phase is closely related to the first in that it focuses on oversight and design discretion. Specifically, the lack of specific building code guidance provides considerable discretion in design solution development, which emphasizes the need for QBS to ensure a team is in place to minimize potential errors. Similarly, it allows for potential discretion in field installation decisions, which may increase the potential for errors. This combination led several interviewees to highlight concerns of final project implementation and whether the projects could withstand extreme events or had long-term durability. In general, this returns to the issue of life-safety concerns. If there is a lack of independent oversight or code guidance, then the opportunity exists, and some say has already happened, for projects to be built to a standard that would not be acceptable in jurisdictions with tighter regulations.

In summary, the issues surrounding unit-price procurement are not limited to a single project phase. Rather, as detailed in the next section, concerns were raised and detailed by interviewees throughout project development and construction.

THE INTERVIEWS

The focus on interviews as the mode for obtaining data in the study enabled the team to obtain key insights into the issues outlined in this report. The interviews covered many hours of discussions to ensure that conclusions were corroborated by multiple sources. Some of the highlights of the interviews that provided direction to the research team follow.

The Qualifications Stage

Many of the interviews focused on the way stakeholders were qualified for the cooperative purchasing list. A significant number of the comments focused on the relationships between the manufacturers and the owners. Others focused on the role that manufacturers played in setting requirements. Representative comments follow:



From a design professional: *One co-op I worked with offered a one-stop solution to make it easy for procurement officials. They took care of materials, design, and construction. It seemed like a conflict of interest ... there is no independent voice in the process.*



From a design professional: *They are exceptional at building relationships. They can go to the purchasing agent and let the agent know that there is a vehicle that allows them to streamline the process. They claim they can award the project in two weeks rather than two months.*



From a vendor: *The limits of purchasing authority differ from municipality to municipality and those numbers aren't published.*



From a vendor: *They know they are not always getting the best price, but they know they can get it done and get it done quickly.*



From a design professional: *In the local school district, the director of transportation is also in charge of procurement.*



From a vendor: *The cooperative purchasing agreement had one or two manufacturers that were involved with creating the agreement.*

Design-development Stage

The design-development stage proved to be the area where there were arguably the most concerning comments from the participants. Specifically, comments in the section focused on the lack of independent oversight in the project process, the risk associated with the lack of professional design input, and the absence of appropriate specifications. Representative comments follow:



From a design professional: *We had a meeting with the school district, and we were tied down to one material because of the co-op. It ended up that a different scope was required to accommodate that specification.*



From a design professional: *I think [the roofing knowledge problem] is always around. Even though it does not apply to every roof, they are comfortable with a solution, so they stick with it.*



From a design professional: *They don't think about whether it is right or wrong. They just look at it as a fact that it is less time consuming and easier.*



From a design professional: *If they use it properly, it gives an option to the owner to facilitate the process quicker.*



From a design professional: *From a designer's perspective, more often than not this procurement does not include a design professional. This results in a lot of waste. The design professional is not being utilized in this method of procurement.*



From a design professional: *We want to educate people to help people make the right decisions. We have done everything we can to stop the practice, but it is still here.*



From a design professional: *People are getting more educated about these practices, but it still happens.*

Construction Stage

The construction stage comments differed from the previous stages in that they focused significantly on the role of building departments, the cost of projects, and project quality. This set of interviews and comments guided the researchers to explore the implementation of projects and not just the development of projects. Concerns about life safety were a recurring theme among the participants in regard to the construction stage. Representative comments follow:



From a vendor: *We get asked to come in to fix many things that were not built to any standards. Owners were talked into things that were not appropriate.*



From a vendor: *If I start calling foul, we would not be seen in the same way. [...] got ostracized in the school district because his name is well known as pushing the issue.*



From a vendor: *The contract amount is based on a higher unit price than what the contractor is getting from the manufacturer. They are not using a design professional, so the liability is back on the owner.*



From a design professional: *The building inspector does not get involved because they are unaware of the project.*



From a vendor: *They went to the school board with the price from the manufacturer's rep. A local contractor said they would have done the project for [half] of the contracted price.*

The Takeaway

The interview process provided the basis for determining which areas of the project process required further investigation with additional interviews. However, as an overall perspective, several key messages emerged from the first phase of interviews with engineering design consultants and operators of cooperative purchasing agreements.

- The cooperative purchasing approach to building enclosure projects is a multiphase issue with concerns raised by interviewees in everything from preproject qualifications to final construction.
- The lack of independent oversight by design consultants is creating a life-safety concern that is compounded in jurisdictions where there is an absence of specific code guidance.
- The lack of transparency in vendor selection is leading to concerns of equity, access, and appropriateness in decision making.
- The focus on creating “easy” selection processes for projects is leading to increased prices and potentially inappropriate product specifications.

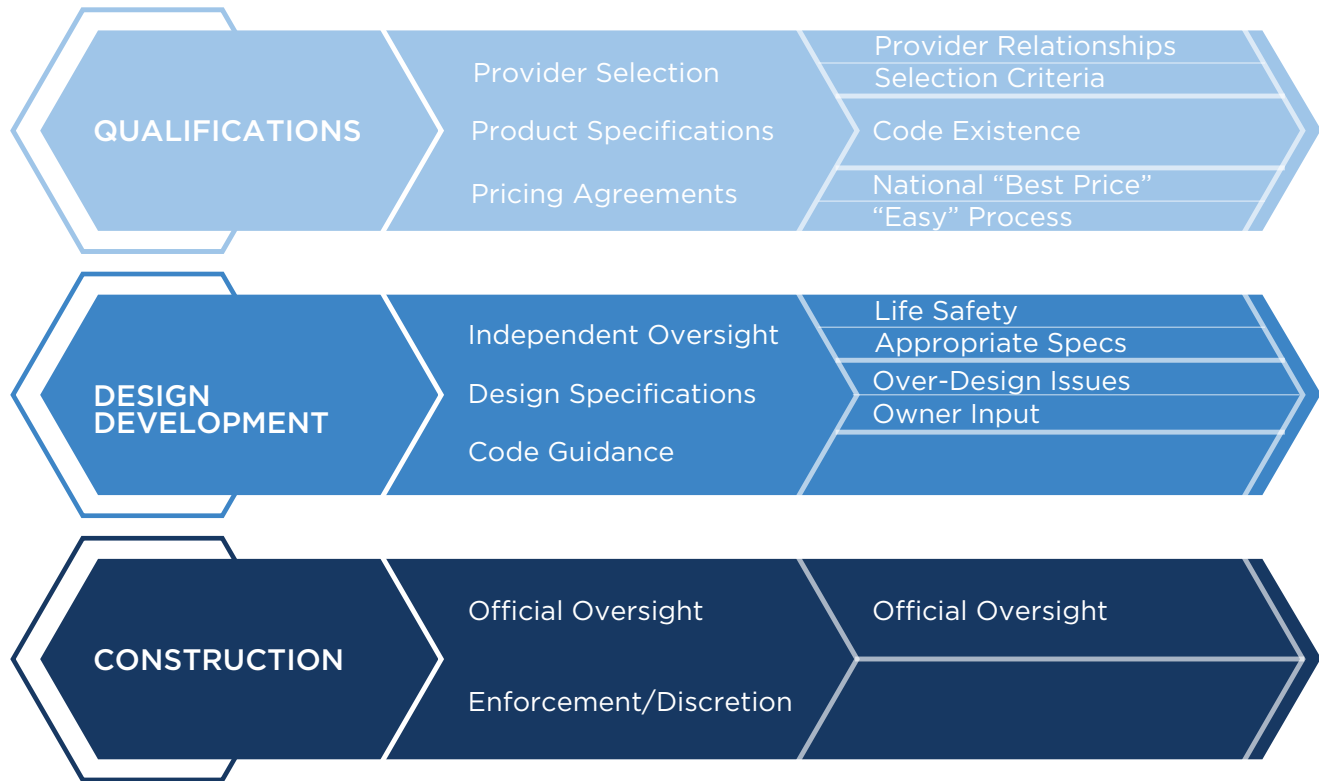
Owner respondents indicated that the chief factors incentivizing the use of unit price procurement stem from:

- state and local policies that authorize and encourage the use of unit price procurement processes through cooperative purchasing agreements;
- the relative ease of using the low-bid processes associated with unit price procurement;
- owner perceptions of lower transaction costs associated with using unit price procurement in conjunction with cooperative purchasing agreements;
- the decrease in schedule from reducing procurements from two stages (consultant / contractor) to one (contractor); and
- owner perceptions that unit price procurement provides the best value for repair and renovations that qualify for unit price procurement.

These high-level takeaways provide a framework for the further in-depth investigation that is summarized in the following section. As detailed, concerns over vendor selection, independent oversight, life-safety, and product specification stretch across the project implementation process.

THE UNIT PRICE TIMELINE

As stated in the previous section, the challenge of unit-price procurement lies in the fact that issues with its implementation are different depending on the geographic region in which it is being applied. However, the issues associated with the practice can be generalized into three primary categories associated with the design-construction phase in which they appear. In the following sections, we highlight the issues in the context of these phases: qualifications, design development, and construction.



Qualifications

The qualifications phase is arguably the area that has received the greatest level of attention and concern for the unit-price procurement methodology. Concerns about equity, pricing, access, and appropriateness have all been raised in different jurisdictions. The often-confusing component of this variability is that depending on the jurisdiction, the issues that one consultant or vendor may encounter could be very different from those encountered by a similar, or even the same, company in a neighboring state. This often leads to a lack of cohesive messaging around unit-price practices as each argument focuses on a different geographic location.

The first of the issues surrounding the qualifications phase is that of pricing. Probably no issue around unit-price procurement has received as much attention as pricing. Lawsuits and challenges in places such as Ohio and Pennsylvania have raised the question of whether unit-price procurement leads to higher prices. The answer to this question depends on where you are located. Removing the question of appropriateness of specification for the next issue and isolating the pricing issue, the research shows that for most of the country where this is allowed the "national best price" will be higher than a price that could be obtained if the project was procured through a regular bidding process. Specifically, a national best price is intended to provide

owners with the best and consistent price available to customers across the country. While this is a very good concept in theory, in practice it does not always result in the promised solution. Based on interviews in locations such as Ohio, product and service providers have repeatedly shown that the same project put out to bid locally would result in savings of up to 50% in some cases. However, this opportunity is not available where purchasers have locked in a national best price.

While the research also shows that the national best price can be useful to those in high-price areas such as New York or California, exceptions exist in these markets just as they do in the remainder of the country. As such, it is difficult to justify this practice for much of the country, and the continued use of the practice will inevitably lead to continued legal actions disputing the validity of the low-price statements.

The second issue associated with the qualifications phase that is raising questions and concerns with suppliers is the issue of the selection of providers who are on the qualified list. It is not always clear and transparent who can get on an approved list and why the specific criteria were put in place. In contrast to a traditional QBS process, the challenge being leveled at unit-price procurement supplier lists is that the process may not follow a specific set of guidelines or that third parties are managing the lists, taking the selection out of the control of local officials and procurement agents. It is this last concern that is gaining increasing attention among vendors of all types. With national, private-party companies managing supplier lists, there is a concern that the process for being accepted on the list will be biased toward national firms that may not have local knowledge or have higher fees than those located in the vicinity. Additionally, the increasing concern over equity was repeatedly mentioned as there is strong concern that barriers are in place to the entry of traditionally underrepresented firms.

The lack of the professional, independent voice is ultimately resulting in higher costs to the projects and ultimately to the taxpayers.

The next issue of concern in the qualifications phase is the issue of appropriate specifications. Many respondents in the research effort mentioned the issue of material specification being a concern with unit-price procurement. Specifically, there is a heightened concern that materials are being specified by suppliers in conjunction with owners that are both greater than the required specifications for the project as well as specific to an individual supplier. In this manner, preferred suppliers are not only getting an advantage in terms of providing the materials for the project but are also being allowed to provide materials that are inappropriate in terms of cost and requirements. This practice appears to be most common in areas where one of two situations exist. Either there is a lack of building codes that provide guidance for the specifications, or there is a lack of requirement for a design consultant to be involved early in the design process who can question the material specifications.

At locations where detailed building codes exist for building enclosures, such as in Florida, the opportunity to vary from these codes with inappropriate specifications is significantly reduced. In contrast, where local codes do not sufficiently address this issue, there is greater discretion, and thus opportunity for abuse, by project stakeholders in specifying materials. In either case, the concern remains similar that entities are paying extra costs for materials that are inappropriate to the specific project. In the second case, the lack of design consultants, the research found a significant level of concern by professionals in the field that

independent oversight of the specification process is lacking, thus resulting in inappropriate material specifications. The lack of the professional, independent voice is ultimately resulting in higher costs to the projects and ultimately to the taxpayers.

Finally, the last issue associated with qualifications is the issue of relationships influencing the selection of vendors. Several participants emphasized the outsized role they believed that existing relationships between owners and vendors played in determining who was provided access to be on the procurement list. Concerns were raised about the aggressive nature of individual vendors to obtain a relationship advantage with the procurement officials. Owners indicated that vendors and purchasing agents are effective in packaging renovation and repair projects into qualifying bundles of services and stressing that prices match or better national prices for materials and services. Owners stated that vendors make it specifically attractive for those elements of the owner's construction portfolio associated with repairs, sustainability, maintenance, and renovation that are amenable to commodification. Unit price procurement, when combined with cooperative purchasing agreements, is portrayed as requiring the fewest transaction costs for project acquisition and management. While experienced procurement officials stated that these tactics did not influence their decisions and were in fact "part of the game," concern was raised about less experienced officials, officials who did not have procurement as a primary function, and officials with smaller procurement portfolios. In each case, the concern raised focused on the potential bias introduced into the process, which would ultimately lead to procurement decisions that exacerbated the issues listed throughout this report.

In summary, the qualifications phase is witnessing the greatest opportunities for potential misuse of the unit-price procurement approach. The research illustrates that the potential for challenges and legal actions is increasing as a greater number of vendors are gaining awareness of the issues surrounding this practice.

Design Development

The second phase where unit-price procurement is raising concerns from industry stakeholders is during design development, or where the technical design solution for a project is being developed. In this phase, a typical project will move from the planning list to the actionable list with a planned completion date and budget. In cases such as school districts, this phase will often be conducted prior to the summer break, when construction is concentrated into a shortened window of opportunity to complete the project. The research found that the concern for time frame is often a driver to implementing project processes that shorten the overall project process, including unit-price procurement practices that continue to raise concerns among professionals.

The first of the concerns within the design-development phase is the implementation of projects without an appropriate design consultant. This is an issue that the research found brings about strong opinions from different constituencies. The underlying concern from design consultants in this issue is that building enclosures are a life-safety concern and should have professional design input to ensure designs are appropriate for the specific geographic location. However, pushback from a subset of suppliers and owners focused on the belief that not all projects rise to the level where engineering design is required due to the size or overall scope of the project. While each of these perspectives may be valid, the overall question remains at what point the project scope requires an independent consultant with specific expertise.

The question of expert involvement ultimately centers on life safety. Does an enclosure repair rise to the level of life safety? How large does a repair have to be to be considered a life-safety concern? Does the fact that an enclosure repair is occurring over a public space make it a life-safety concern? These are questions that are actively being debated in different jurisdictions. To address these questions, the team interviewed individuals

who have witnessed project failures due to insufficient engineering interventions. Suppliers that insist they have the expertise to address any engineering questions that may arise during their projects are engaging in complete solution offering, with the end result being an implication that outside design services are not required. The issue remains unresolved in many locations, but the ambiguity is leading to both suppliers and owners who may prefer to bypass the fees associated with the design professionals in favor of project expediency. This also raises several concerns related to liability, licensing issues, and professional ethics that must be addressed.

The second concern associated with the design-development phase is a continuation of the qualifications phase, with a focus on product specifications. Like the concerns surrounding national pricing and influence of suppliers, the design-development stage has seen over-specification of materials. Specifically, interviewees have noted that a review of project solutions has revealed that the material selected for projects can be significantly over what the project requires. Subsequently, this over-specification results in cost increases as the products are generally in a higher price category than what may be required. Similarly, the over-specified products are generally ones that can only be fulfilled by a single supplier. Thus, competition is eliminated and the final cost is not reviewed, as a single supplier was able to provide the services.

While the practice of sole source purchasing of which over-specifying is a part should not be removed from the toolbox of a purchasing agent, the appropriateness of this approach should always be considered. This factor is where the companion concern for this practice was raised several times. Specifically, the lack of oversight once again comes into play. In some cases, this is the lack of an independent expert to oversee the specifications. In others, this was reported to be the lack of owner oversight as the owner may not have a district construction management office, or the owners transfer responsibility to a preferred supplier to make the appropriate recommendations. In either case, the owners do not put in place close controls on the project, but rather put a focus on the completion of the project in a specific time frame with less concern about the overall cost.

Construction

The final phase of the project process, construction, focuses on the concerns around unit-price procurement that arise during the building phase of a given project. This phase arises as a point of concern due to the potential for a lack of oversight by building officials and/or design professionals. While the construction phase has not witnessed the level of concerns that have been raised with the previous two stages, the interview process revealed strong concerns from participants regarding the consistent nature of the issues that are seen during construction.

The first of the issues is the lack of involvement by building officials in some projects. Specifically, the concern was raised by several participants that particularly in jurisdictions with smaller building departments, projects can be undertaken under the heading of repairs that are not brought to the attention of a building department in the form of a building permit request. Rather, these projects are developed as short-schedule, incidental repairs that do not involve structural components. Given this scenario with an understaffed building department, the owners will proceed with the project by engaging a supplier and a contractor to undertake the project without building permits. In these cases, the participants stated that the building department may never know the project existed and never inspect the ongoing or completed work.

As stated, this concern often focuses on the building department and whether it is performing the intended function. However, this appears to be a misplaced concern in that building departments in many smaller jurisdictions are facing increasing challenges with increased development and personnel retirements. In general, it does not appear to be an issue of lack of job performance by the building department but rather a loophole in the process that is allowing owners to take advantage of a loose definition of repair. The effect

of this loophole is a process that is raising considerable concerns from a life-safety perspective. Specifically, the concern is increasing over the appropriateness of designs regardless of the size of the project or the adequacy of the work undertaken to complete the project. Once again, this issue is a regional one, which makes it difficult to receive broad attention. However, in the locations where this issue exists, it is a growing concern by professionals and needs to be addressed before a project failure occurs with life-safety consequences.

The second issue in the construction phase is one that has been broached several times—the issue of building codes. Although the lack of specific building code guidance on items such as roofing repair was noted in earlier phases, interviewees brought up on several occasions that the lack of this guidance creates a scenario where construction details may not be appropriate for the extreme events experienced in specific geographies. As detailed in one participant interview, the failure of a roofing project put a spotlight on the issue where there may not have been inappropriate construction but rather the lack of building code guidance allowed for an insufficient solution. In contrast, Florida is a location where building codes have been developed to specifically address the extreme stress placed on building enclosures. Similarly, California has specific guidance due to seismic concerns. The lack of such guidance on a broader geographic level allows significant discretion to be used by project participants in terms of installation decisions. While discretion in the field is essential for construction projects, discretion in building enclosure installation can be problematic if the discretion leads to lack of appropriate decision oversight.



GOING FORWARD

The previous sections highlighted the broad range of issues associated with the unit-cost procurement and cooperative purchasing agreement approaches to building enclosure projects. The sections also highlighted the regionality of the issue, with vendors in different jurisdictions facing different issues depending on many organizational and legal issues. That places the question of what is next and how to move forward dependent on the situation in which the project is being developed. While it would be preferred that national restrictions on these practices should be put in place like the protections around QBS, the time and appetite for a national consideration may take some time to achieve. However, there are issues that can and should be addressed through practices and laws that can be put in place at the local and state levels to address the inequities, life safety, and cost concerns that have arisen around this overall issue.

While many of the issues around the unit-price procurement issue require longer-term focus, it is also appropriate to consider short-term priorities.

While many of the issues around the unit-price procurement issue require longer-term focus, it is also appropriate to consider short-term priorities. In particular, the opportunity to develop awareness materials that can be used to spotlight the issues to multiple stakeholders in multiple jurisdictions should be a priority. Issues such as access, life-cycle costs, misconceptions on transactions costs, and national pricing can be brought to the attention of owners and policy-makers to initiate and expand conversations around this procurement method.

Design Independence and Life Safety

In terms of longer-term focal points, the first priority must be around life safety. This is the underlying concern of the interviewees in this effort and has been the focus of much of the conversation around this topic. Through this research effort, many suggestions have been put forward as to how to address the life-safety issue. However, the approach that has been put forward by most participants has been the need for greater project oversight and design consultant participation. In terms of the former, the local jurisdictional regulations and guidelines, or lack thereof, need to be tightened to reduce or eliminate the ability for projects to bypass the building permit process. This tightening of the process needs to be accompanied by a re-examination of the permitting process to ensure that projects can still meet accelerated schedules. However, to increase public and professional confidence in the project process, outside oversight will be a significant step forward.

Pricing

The second priority must focus on the pricing issue. Interviewees repeatedly brought up the fact that lower costs could be obtained if a project had gone out to bid in the local community rather than using a locked-in price. This once again returns to the regionality of this issue. It may in fact benefit some geographic areas to have a locked-in price. However, there are many jurisdictions where this is not the case, the result being projects that in some cases are spending millions of dollars in extra material costs as national pricing models were put in effect. While it is understood that this negotiated price approach can make the process faster and easier from a purchasing agent perspective, this ultimately is leading to questionable project costs. As such, it is recommended that the national pricing model be reconsidered for building materials and projects should be announced for local bids to ensure the appropriate use of public funds.

Local Official Education

The third priority focuses on broadening and coordinating an education campaign to local purchasing agents and project managers. This research effort reinforced the understanding that the issue surrounding cooperative purchasing agreements and the potential misapplication of the practice is not usually an individual intending to inappropriately procure a service or product. Rather, it is the focus on the ease of the process and time constraints on completing the project. With compressed time schedules on projects such as school facilities, there is little time in the schedule for extended procurement efforts. However, this should not be an entry point for inappropriate pricing. Rather, it is time to bring the negative aspects of unit-price approaches to a broader audience and have appropriate discussions as to alternatives to this practice. The concerns and pressures around project schedules are real and need to be considered. However, overpaying on a consistent basis should not be the end result on these facility projects.

Building Code Improvement

The final step in going forward, the tightening of building codes, is arguably the most difficult to address. This research effort found that many of the issues surrounding unit-price procurement were eliminated when building codes were in place that directly addressed the issues in question—most notably, addressing building enclosures with guidelines that made it difficult to generate inappropriate specifications. Once again, this is a local and regional issue with differences and oversight specific to each jurisdiction. However, it is time to address this issue as it appears to be a central element to reducing the issues surrounding unit-price procurement.

Ease of procurement is important, but appropriate and fair practices should always guide the process.

As the unit-price procurement issue varies according to local regulations and practices, moving forward probably incorporates additional issues in individual locations. However, this research effort has found that the preceding issues underlie many of the jurisdictions where problems persist. As such, this list is a starting point that should be examined in every jurisdiction to reduce the increasing challenges being put forward to the unit-price or cooperative purchasing arrangements. Finally, at the core of moving forward is the challenge of convincing jurisdictions that focusing on “easy” is having negative effects on project delivery. While cooperative purchasing agreements have a place in the facility management domain, appropriate limits on the practice need to be firmly established. Ease of procurement is important, but appropriate and fair practices should always guide the process.

CONCLUSION

The current research effort initially explored the question of how unit-price procurement impacted construction projects, with a specific emphasis on building enclosure projects. This focus was quickly expanded as the question of unit-price procurement is not limited to a single procurement approach. Rather, unit-price procurement is now tightly intertwined with cooperative purchasing in the public sector. In particular, this approach is being adopted on a widespread basis by school districts, municipalities, and university systems. As a result of this increasing use, challenges surrounding questions of appropriate pricing, prequalification, and material appropriateness are increasing in number. These questions are ultimately resulting in legal actions and regulatory adjustments.

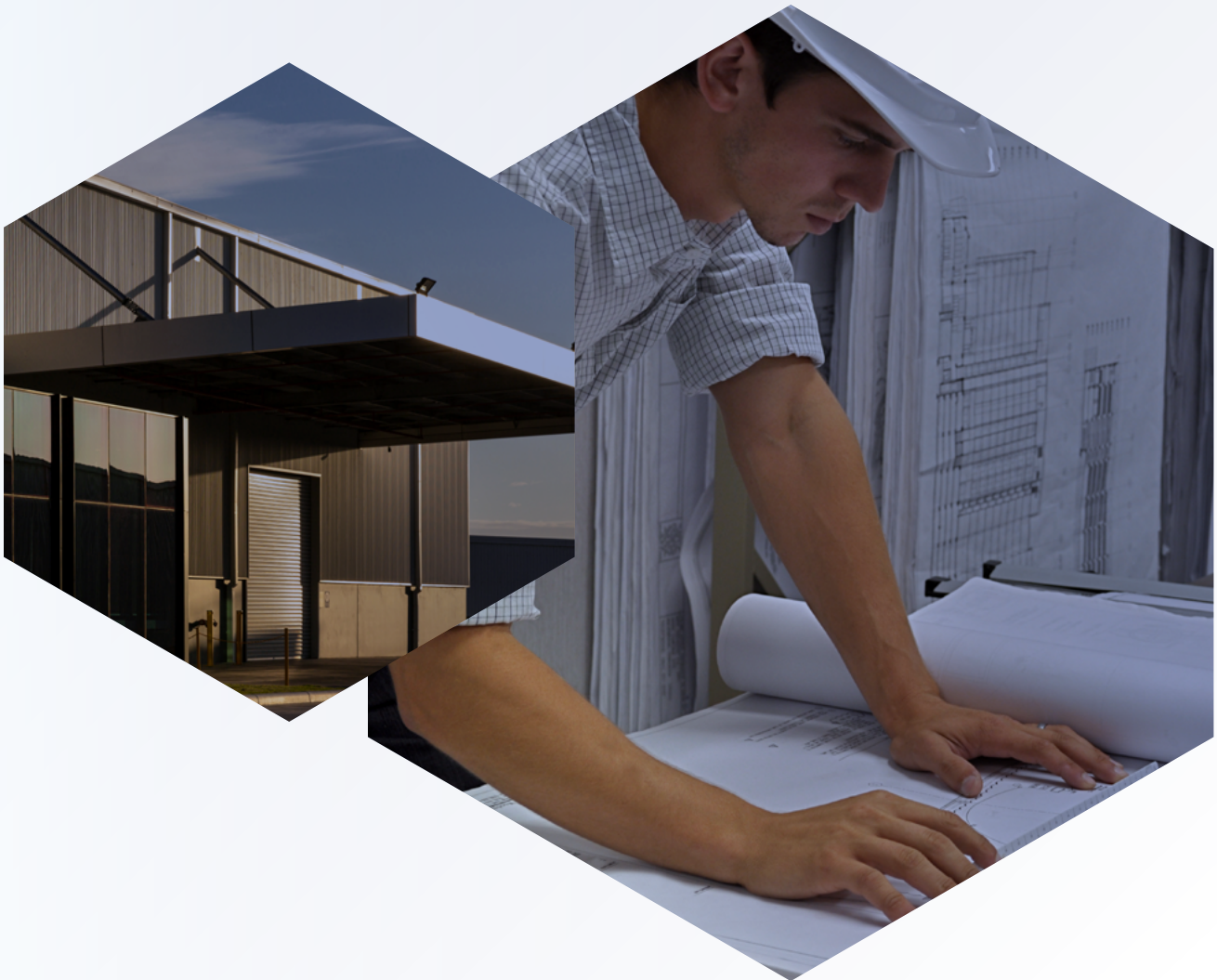
The challenge for policy-makers intending to provide policy guidelines on the practice is the multiple points in the process where abuses and inappropriate actions may occur.

The challenge for policy-makers intending to provide policy guidelines on the practice is the multiple points in the process where abuses and inappropriate actions may occur. As detailed in the current study, the unit-price approach, especially within cooperative purchasing arrangements, introduces opportunities for abuse in the prequalification phase, the design phase, and the construction phase. Of particular concern are the following issues:

- ◆ **Access in Qualification.** Prequalification for purchasing is an accepted and recommended approach in the engineering industry. However, cooperative purchasing groups are moving beyond the qualifications of the vendor to include elements such as price and familiarity with the owner organization. Greater regulation is required to ensure equal access is achieved in the prequalification process for cooperative purchasing groups.
- ◆ **National Pricing Practices.** The challenges to pricing models for building enclosure projects are increasing both in number and in geographic locations. At the core of these challenges is the excess cost that public entities are paying for enclosure projects, especially roofing projects. As these challenges are claiming and proving cost overruns in the multi millions of dollars, this practice needs to be reviewed in the interest of fiscal responsibility.
- ◆ **Independent and Professional Oversight.** Building enclosure projects encompassing public projects are a life-safety concern. The study has revealed repeated circumstances where independent or professional oversight and input were not included in a project. In some cases, participants detailed scenarios where the lack of professional engineering input resulted in the failure of the roofing system. Building regulations must be updated to better protect the public against construction projects that bypass life-safety protections.

- **Building Code Inconsistency.** In areas such as Florida, where building codes specifically address roofing requirements in detail, there appears to be significantly lower levels of challenges in terms of building enclosure projects. The specifications reduce or eliminate the opportunity for inappropriate specifications, and subsequently, material overcharging. However, this is not the case in the majority of locations. This leaves the door open for inappropriate specifications, pricing, and installation to be introduced. Building codes need to be updated to address these loopholes.
- **Legal Challenges.** The increasing number of legal challenges to aspects of unit-price procurement is prompting increasing calls for policy development to provide oversight to the practice. This is an emerging topic that requires further analysis and pursuit by government officials.

In summary, the intent of unit-price procurement and cooperative purchasing is based on well-intentioned approaches to addressing issues such as disaster recovery. However, this original intent has ultimately matured to enable the practice to be abused and misapplied in some jurisdictions. This research effort details the areas where adjustments are required to this practice. Without these adjustments, it is anticipated that the concerns around unit-price procurement will continue to increase, along with the excess cost to taxpayers.



DEFINITIONS

Cooperative Purchasing Agreement:

A written contract procured for the benefit of two or more entities to make purchases of goods or services.

Indefinite Delivery:

An indefinite-delivery contract provides for an indefinite quantity of services, but a fixed period.

Indefinite Quantity:

An indefinite-quantity contract provides for an indefinite quantity, within stated limits, of supplies or services during a fixed period.

Job-Shop Contracting:

An agency or plant that supplies technical personnel or performs a specific function in a manufacturing process, usually on short-term temporary contracts.

Quantity-Based Purchasing:

Quantity-based purchase orders allow the agency to order and receive up to the specific quantity and unit price of goods or services at a particular unit of measure.

Unit-Price Procurement:

A contract that establishes the basis for payment as a cost per unit.

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The RCI-IIBEC Foundation exists to support research, education, and the sharing of information for issues important to the building enclosure industry. The foundation was established in 2001. Since then, the foundation has received over \$4 million in donations. The foundation is committed to using those donations for the benefit of the building enclosure industry.

Through our investments in grant recipients, we seek to increase the scope and type of research conducted for the building enclosure. Through our scholarships and convention sponsorships, we aim to showcase our profession to a new generation and create opportunities for the dissemination of information vital to our industry's growth.

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