

Best Safety Practices Based on the Nature and Stresses of Small Construction Businesses

Project Sponsor

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Executive Summary

Small construction firms with fewer than 20 employees represent 91 percent of all construction payroll firms, employ roughly one-third of the workforce, and account for approximately half of all construction fatalities. That overrepresentation is not new, and it has not narrowed. What remains perplexing is that it persists despite growing industry attention to safety and decades of research on best practices. This report presents findings from a qualitative, ethnographic study of eleven construction firms in Oregon, California, Washington, and Hawaii conducted through semi-structured interviews with construction firm owners and construction and safety managers, followed by in-person site visits. The goal was to understand what actually drives safety decisions in small firms, and to identify what firms, associations, and regulators can do differently to improve safety performance in small construction firms.

The research uncovered five findings that emerged consistently across firms and were confirmed through direct site observation. Each was corroborated not just by what company owners and managers described in interviews, but by what the research team observed on site.

Safety in small firms is personal, not programmatic. Six of nine formally interviewed firms described safety as everyone's responsibility, and company owner commitment to safety was widespread. Reliable field conditions, unfortunately, were not consistently present. The gap between what company owner's value and what workers experience on site is the central problem this report addresses. At the micro-firm end of the sample, the gap took a different form. There was no formal framework at all. A solo contractor summed up his safety protocol as experience and readiness to jump off the ladder if need arises. At this scale, the question is not how to close the gap between values and practice. It is how to introduce the concept of a framework where none exists.

Schedule pressure dominates every safety decision. Eight of nine formally interviewed firms named it as their primary operational stressor. Production builders face staged completion timelines, remodelers carry multiple simultaneous projects, and specialty subcontractors routinely operate inside three-to-five-day project windows with the next job already waiting. At the micro-firm level, the pressure is not a stressor layered on top of business operations. It is the arithmetic of survival. One micro-firm contractor described his economics with precision: sixty cents of every project dollar goes to labor and materials before he earns a dollar himself. In that model, there is no line item for

scaffolding rental or personal protective equipment (PPE). The pressure to move fast is not a personality trait or a management choice. It is the business model of small construction businesses.

Communication is the primary safety tool, but it is front-loaded. Seven of nine formally interviewed firms reported using toolbox talks and morning briefings. Site visits found that safety communication was rarely repeated or reinforced during the workday. In one firm whose production meetings were described as always starting with safety, site observation found no safety content in those meetings. A specific pattern repeated across sites. Workers complied immediately when a supervisor named a task and its PPE requirement. The gloves went on; however, when the task ended, the gloves came off without a word, and did not go back on for the next task with comparable risk. Safety communication tied to a single moment does not transfer to the next one. No firm in the study had a mechanism for addressing that gap. At the micro-firm sites, communication as a safety tool was absent entirely.

Subcontractor management is the weakest link in the safety chain. Seven of nine formally interviewed firms identified it as an unresolved challenge. Contractual safety language exists; but, enforcement is rare. Tight labor markets make removing a non-compliant subcontractor unlikely even when violations are observed directly on site. The firms most dependent on subcontracted labor are, unfortunately, the least able to hold those subcontractors to safety standards. At the micro-firm level, this dynamic reaches its simplest form: a day-rate helper with no employment relationship, no stake in firm reputation, and no leverage point for building the kind of accountability that motivates sustained compliance.

Regulatory experience shapes how firms invest in safety, but the effect is reactive, not proactive. Firms in Washington, where Department of Labor and Industries enforcement is active, showed stronger structural safety investment. One owner kept a table saw guard accessible specifically in case an inspector returned after a citation. That is not a safety culture. It is compliance theater. Firms in Oregon, California and Hawaii reported minimal OSHA presence on residential sites.

Three clusters of recommendations follow from these findings. Coordinate: designate a named safety contact for each project, build subcontractor safety requirements into contracts at the estimating stage, treat subcontractor safety history as a selection criterion, and add safety status to routine company owner-project manager check-ins. Communicate: open every site meeting with discussion of one specific hazard tied to that day's work scope, brief subcontractor crews in person

on arrival, stage PPE at the work location rather than in the van, and conduct at least one unannounced site visit per week per project by the company owner and/or the upper management. Insulate: build pre-task safety setup time into schedules at the estimating stage, establish stop-work expectation (not just authority) for every crew member, and connect safety performance to business outcomes company owners already track.

Jobsite Safety Institute (JSI) is well-positioned to translate these findings into field-ready tools. Company owner-to-owner peer exchange, short prescriptive checklists tied to trade type and firm size, and targeted outreach through the associations, chapter networks, and insurance brokers that small firms already trust are the most direct paths forward. The knowledge needed to improve safety in small construction firms exists. What is needed now is the delivery mechanism to put it in front of the people who build.

Chapter 1

Introduction

The Need for Focus on Safety in Small Firms

Construction kills more workers than any other industry sector of the United States economy. In 2024, 1,032 construction workers died on the job, with falls alone accounting for 370 of those deaths (BLS, 2026). Amidst decades of regulatory effort, industry safety programs, and research investment, the industry's fatality rate has remained persistently and disturbingly high. The desire to improve safety performance and the persistence of preventable deaths define the central motivation of this research.

The concern is even more acute when focused on firm size. Establishments with fewer than 20 employees make up 91 percent of all construction payroll firms (CPWR, April 2026). Workers at those firms earn roughly half as much, reflecting the difference in resource depth between firm categories and the limited capacity small firms have to invest in safety infrastructure. Simply stated, the overrepresentation of small firms in construction fatality data is not a new finding. It is a persistent and troubling one.

What remains poorly understood is the mechanism behind this disparity. How do the operational conditions inside small construction firms translate into unsafe field conditions? And what practical changes can close the gap? Those are the questions this study set out to answer.

What Surveys Cannot See

Previous safety research has not fully answered these questions, in large part because most studies of small-firm safety rely on surveys administered to company owners or managers. This approach captures stated intentions and self-reported behavior, but misses the informal dynamics that drive actual practice. A company owner can describe a firm's safety practices accurately in an interview while conditions on site tell a different story. They cannot regularly observe the social dynamics that determine whether a morning safety briefing contains safety content or becomes a production meeting that opens with a safety sign-off.

What is needed is a method that follows safety decisions into the field. Ethnographic methods, which combine structured interviews with direct site observation, are designed to do exactly that. Interview data establishes what firms say they do. Site visit data establishes what firms actually do. The comparison between the two is where the most useful findings emerge.

Scope and Organization of the Report

This study used a qualitative, ethnographic case study approach. The research team conducted semi-structured interviews with construction firm owners and construction and safety managers at nine small construction firms and followed up with in-person site visits at eight of those firms. Two additional site-only observation visits were conducted in Hawai'i, extending the total to twelve site observations across eleven firms with some firms agreeing to multiple site visits. Firms ranged across residential production homebuilding, custom remodeling, exterior specialty work, and small general contracting, and operated in Oregon, California, Washington, and Hawai'i. Data from interviews was compared systematically against site observations to identify where stated practice and actual practice diverged, and reasons why the discrepancy exists.

The report proceeds as follows. Section 2 presents a review of literature on small-firm safety burden, structural constraints, operational stressors, and the methodological case for field-based research. Section 3 describes the study design, recruitment, data collection, and analysis process. Sections 4 and 5 present findings and recommendations. Section 6 draws conclusions about what the findings mean for small firms, trade associations, and regulators.

Chapter 2

Literature Review

2.1 The Safety Burden on Small Construction Firms

Construction accounts for approximately 20 percent of all US occupational fatalities while employing a much smaller share of the total workforce. Within construction, fatality risk is not distributed evenly. Establishments with fewer than 20 employees represent about 91 percent of all construction payroll firms and employ roughly one-third of the construction workforce, yet they account for approximately half of all construction fatalities (CPWR, April 2026). That ratio has remained stable across multiple cycles of Bureau of Labor Statistics fatality surveillance, which makes the persistence of the disparity all the more concerning.

Injury data confirms the same pattern. Days-away-from-work injury rates at firms with 11 to 49 employees run at 1.2 per 100 full-time equivalents, three times the rate at firms with 1,000 or more employees (CPWR, April 2026). Falls remain the leading cause of construction fatalities at all firm sizes. In 2024, falls killed 370 construction workers in the United States (BLS, 2026). The disproportionate burden at small firms reflects both higher exposure rates and the lower organizational capacity of small firms to reduce them. In total, the data makes clear that size matters deeply in construction safety.

2.2 Why Small Firms Are Structurally Different

Small construction firms are not simply scaled-down versions of large ones. The company owner typically serves simultaneously as estimator, project manager, crew lead, and safety officer. There is often no dedicated safety staff, no human resources function, no training department. Organizational slack, defined as the resource buffer that allows firms to adopt new programs or respond to disruptions without disrupting core operations, is absent. When a company owner is on the job site, safety communication happens. When the company owner is at another site or meeting a client, it may not (Al-Bayati, 2021). Implementing safety practices, in this context, is deeply dependent on the physical presence and continuous attention of the person at the top.

Personal commitment from company owners matters, but research consistently finds that it is not sufficient on its own. Safety culture research confirms that owner or leadership commitment is a necessary condition for a positive safety culture but does not by itself produce one. Culture must be reinforced structurally, through systems, expectations, and accountability that operate even when

the company owner is not present (Al-Bayati, 2021). Small firms rarely have those structural reinforcements in place. Owner safety values exist within the firm but do not propagate reliably into field conditions.

Resource constraints compound the structural gap. Workers at firms with fewer than 5 employees earn approximately \$1,000 per week, less than half the \$2,100 earned at firms with 1,000 or more employees (CPWR, April 2026). Margins are tighter and the capital available for safety equipment, training, or outside expertise is limited. Only 58.9 percent of small firms with fewer than 20 employees train their trainers, compared to 86.6 percent at firms with 100 or more employees (CPWR, April 2026). These gaps in organizational capacity are well documented across small-firm occupational health and safety research in multiple industries, including resource constraints, information gaps, regulatory complexity, and the absence of slack for adopting new programs (Legg et al., 2015; Cunningham et al., 2018).

2.3 How Stressors Shape Safety Decisions

Safety decisions on construction sites are not made in a vacuum. They are made under pressure, in real time, and by people with multiple competing priorities. Research on occupational stress and safety behavior in construction consistently finds that time pressure and financial pressure exert direct influence on safety decisions, independent of the worker's safety knowledge or attitude (Guo et al., 2018; Ozmec et al., 2015). A worker who knows the correct fall protection procedure and intends to follow it will make a different decision when facing a two-hour schedule gap than when that pressure is absent.

For small firms, these pressures are structural, not episodic. Production homebuilders commit to staged completion timelines involving multiple trades across multiple lots. Remodelers manage several simultaneous projects with thin crews. Specialty subcontractors operate inside short project windows, often three to five days, with the next job lined up and waiting. The pressure to move fast is not a trait of individual workers or a reflection of poor management. It is built into the business model. Understanding how that pressure shapes field-level safety decisions requires observing it directly, under real conditions, on real sites.

2.4 Why Surveys Miss What Matters

Most small-firm safety research relies on surveys administered to company owners or managers. This approach captures stated intentions and self-reported behavior but misses the informal dynamics

that drive actual practice. Surveys cannot detect the gap between what the owner of a roofing company describes and what a crew does on a roof at a particular time during the day. They cannot capture the moment a general contractor (GC) superintendent decides not to confront a subcontractor crew working without harnesses because the labor market makes replacement unrealistic. They also cannot observe the social dynamics that determine whether a morning safety briefing contains safety content or becomes a production meeting with a safety sign-off.

Researchers have made this case directly. Ethnographic and observational methods are required to capture informal decision-making, real-time social dynamics, and the gap between stated and actual practice (Aboagye-Nimo et al., 2013; Ozmec et al., 2015; Oswald et al., 2019). The current study was designed to address that gap by pairing interview data with site visit observation. Each data source has its own limitations; together, the comparison between what company owners describe and what researchers observe reveals the mechanisms that survey data alone cannot access.

Chapter 3

Methods

3.1 Design and Recruitment

This study used a qualitative, ethnographic case study design. Case study methods are well suited to questions that ask how and why, particularly when the phenomenon of interest is embedded in a real-world operational context that cannot be controlled or replicated in a laboratory setting (Yin, 2009). Ethnographic field methods add the observational layer that interview accounts alone cannot provide.

Eleven small construction firms were recruited through the Building Industry Association (BIA), Associated Builders and Contractors (ABC), and Home Builders Association (HBA) chapters across Oregon, California, and Washington, supplemented by connections through JSI's existing networks. Firms were selected to represent variation in trade type, firm size, and geographic location, in order to capture the range of conditions under which small firms manage safety. All firms are anonymized; no identifying information about firms, owners, and individual workers appears in this report.

3.2 Data Collection

The research team conducted nine semi-structured interviews, each 45 to 60 minutes in length, via Zoom. Interviews were conducted with company owners or senior managers and focused on how firms currently manage safety, what pressures most affect their safety practice, and how they handle subcontractor and workforce management. All interviews were recorded, transcribed, and reviewed for accuracy.

Ten in-person site visits followed the interviews with some of the nine firms agreeing to site visits to multiple projects. Site visits were conducted across Oregon, California, and Washington. Two additional site-only observation visits were conducted in Hawai'i, documenting a GC and a specialty contractor. Neither of the two firms participated in a semi-structured interview; the principal investigator conducted informal on-site conversations and direct observation across multiple visits at each location, bringing the total to twelve site observations across eleven firms. Observations focused on actual field conditions: what safety equipment was present and in use, how morning briefings were structured and conducted, whether and how subcontractor crews were integrated into site safety communication, and how GC and field staff responded to visible hazards. Observations were structured using the Emerson, Fretz, and Shaw (1995) ethnographic fieldnote framework, producing extended narrative documents capturing what was seen, heard, and analytically significant about

each site. At the conclusion of each site visit, the research team assigned numerical ratings across five directly observable dimensions: site organization, PPE compliance, fall protection, oversight presence, and observable safety culture, each scored on a 1 to 5 scale. These ratings appear in Table 3. They reflect only what was directly observed on site and are distinct from the analytical framework, which was developed during analysis and is described in Section 3.3.

3.3 Analysis

An analytical construct was developed during analysis to organize the cross-case comparison between interview accounts and site observations. The construct consisted of five dimensions: safety posture, pressure management, communication practices, subcontractor management, and regulatory orientation. The five dimensions are defined as follows. Safety posture refers to the overall orientation of the firm toward safety, including whether it is values-driven, compliance-driven, or reactive. Pressure management refers to how the firm responds to schedule and cost pressures when they have conflict with safety practices. Communication practices refers to the mechanisms and frequency with which safety expectations are transmitted to workers and subcontractors. Subcontractor management refers to how the firm selects, instructs, and oversees subcontractor safety behavior. Regulatory orientation refers to how the firm perceives and responds to external regulatory requirements. These dimensions served as organizing categories for the comparison matrix described below, and their alignment ratings (Aligned, Partial, Gap, Unknown) appear in Table 5.

Analysis proceeded in two overlapping phases. In the first phase, the research team constructed a structured cross-case comparison matrix in Microsoft Excel. This matrix is where the analytical framework was applied: for each firm with both an interview and a site visit, the five dimensions served as column headers, and the team coded each cell as Aligned, Partial, Gap, or Unknown based on whether the interview account matched the site observation for that dimension. This produced Table 5. The 1–5 site observation ratings from Table 3 informed but are analytically separate from the Table 5 alignment judgments. Table 3 rates observed conditions on site; Table 5 rates agreement between what was said and what was seen. The two Hawai'i firms, which lacked structured interviews, contributed to the analysis through their site observation records and informal conversation notes but could not be included in the Table 5 alignment comparison.

Thematic coding was then applied to the full body of interview transcripts and ethnographic fieldnotes using the two-cycle framework described by Saldaña (2015). The unit of analysis was the

complete participant response or discrete fieldnote entry. In the first cycle, in vivo coding preserved the participants' own language — using their exact words as code labels — and process coding captured observable behaviors and decisions in gerund form, producing a descriptive inventory of what was said and what was seen across all firms. In the second cycle, pattern coding grouped first-cycle codes into recurring explanatory constructs, and focused coding elevated the most analytically significant codes into candidate themes. Coding was performed by two researchers. As a result of this process, five themes emerged that held across the majority of firms with interview data and were corroborated by direct site observation.

Chapter 4

Findings

Across that full dataset, the interview accounts and field observations rarely told the same story, and those gaps are where the most useful findings live. Firms are anonymized throughout; quotes from interviews appear where they illustrate a pattern directly. Table 1 summarizes the participating firms. A note on firm size: the sample spans a wide range. Firm G, a residential production builder with more than fifty employees and a dedicated safety infrastructure, sits at or above the small business threshold by employee count and organizational complexity. It is retained as a reference case because its safety program illustrates what the recommendations in Section 5 look like when more fully implemented, but its operating conditions are not representative of the small-firm majority. At the opposite end, two micro-firm sites represent firms of one to three people that trade associations do not reach and which rarely experience OSHA visits on its jobsites. These micro-firms define the lower boundary of the size spectrum in this study. The remaining interview firms span the middle range, from small owner-operated remodelers to production homebuilders approaching medium scale.

Table 1: Firm Profile Summary

Firm	Trade / Firm Type	Approximate # of Employees	Interview	Site Visit
A	Production homebuilder	20-50	Yes	Yes
B	Design-build remodeler	5-15	Yes	Yes
C	Design-build remodeler	5-15	Yes	Yes
D	Design-build remodeler	5-15	Yes	Yes
E	Specialty siding contractor	30	Yes	Yes
F	Family-owned contractor	5-10	Yes	Yes
G	Large production homebuilder [‡]	50+	Yes	Yes
H	Specialty roofing contractor	5-20	Yes	No
I	Production homebuilder*	5-20	No	Yes
J	Family-owned contractor	1–2	Informal [†]	Yes
K	Specialty framing contractor	3	No	Yes

* Firm I: site visit conducted; formal interview not completed. † Firm J: site-only observations conducted across multiple days; informal on-site conversation with company owner recorded; no semi-structured interview completed. Firm K: site-only observations conducted across four visits; no formal interview. ‡ Firm G (large residential production builder, 50+ employees) is retained as a reference case representing the upper boundary of the study's size range. Its safety infrastructure differs significantly from all other participating firms and is not representative of the small-firm majority in this study.

Table 2 presents, for each participating firm, the structured safety investments described during interviews alongside the frequency with which schedule pressure was reported as conflicting with safety practices. The contrast between firms with formal programs and those without is less a function

of firm size than of owner values and regulatory environment. Five of the nine formally interviewed firms maintained both a formal safety program and a written safety plan while three operated with neither. The two micro-firms documented through site observation showed no formal safety program infrastructure of any kind. Three firms described schedule-safety conflict as occurring rarely; one described it as constant, a characterization that matched what was visible on site at both micro-firm site locations.

Table 2: Safety Program Structure and Schedule-Safety Conflict Frequency by Firm

Firm	Firm/Trade Type	Presence of Formal Safety Program	Presence of Written Safety Plan	Safety Point of Contact	Frequency of Schedule-Safety Conflict
A	Production homebuilder	Yes	Yes	Project Manager	Sometimes
B	Design-build remodeler	Partial	Partial	Lead carpenter	Rarely
C	Design-build remodeler	Yes	Yes	Lead carpenter	Sometimes
D	Design-build remodeler	Partial	Partial	Project Manager	Sometimes
E	Specialty siding contractor	Yes	Yes	Safety Manager	Rarely
F	Family-owned contractor	No	No	Owner	Always
G	Large production homebuilder	Yes	Yes	Safety Manager	Sometimes
H	Specialty roofing contractor	Yes	Yes	Superintendent	Sometimes
I	Production homebuilder	N/D	N/D	N/D	N/D
J	Family-owned contractor	No	No	Owner	Always
K	Specialty framing contractor	No	No	Owner	Always

Data drawn from structured interviews except for Firms J and K, which are based on site observation and informal conversation only. N/D = Not documented due to incomplete or absent interview record. Schedule-Safety Conflict reflects how firms characterized the frequency with which schedule pressure created direct tension with safe work practices; for Firm J, rating reflects informal conversation and observed conditions. Shading in program columns: green = Yes, yellow = Partial, red = No.; shading in schedule-safety conflict column: green = Rarely, yellow = Sometimes, red = Always.

4.1 Safety Is Personal, Not Programmatic

Across nearly all nine participating firms, construction firm owners and managers described their approach to safety in primarily in personal, values-based terms rather than as a formal management system. The most common framing was that safety is "everyone's responsibility," a statement repeated in various forms by seven of the nine firms. In practice, this sentiment meant that the company owner or a small number of senior individuals served as the primary safety conscience of

the organization, with no dedicated safety role in the majority of firms. Safety was described, repeatedly, as something embedded in culture and relationship rather than enforced through procedure. One large production homebuilding owner captured the philosophy directly: "There is no need to hurry through a job just to get it done. They are going to do it safely first." Another described a progression from the founding generation, "Safety was not a thought when his father owned the company," to the current company owner's values-driven approach centered on worker wellbeing and the financial health of the firm.

Site visits revealed that this personal commitment translated unevenly to field conditions. At firms where the owner or production or project manager was physically present on site and invested in the culture, particularly the design-build remodeler (Firm B), the specialty exterior siding contractor with a dedicated safety manager (Firm E), and large production homebuilder (Firm G), on-site conditions were more organized and personal protective equipment (PPE) compliance more consistent. At firms where personal commitment resides at the ownership level but day-to-day field reality is delegated to subcontractors or lead carpenters without strong reinforcement, safety behavior on site diverged from what owners described in interviews. The pattern was not one of dishonesty. Owners appeared to believe genuinely in their stated values. The problem was one of reach: safety as a personal value did not automatically become safety as an operational norm.

Table 3 quantifies that gap directly. For each of the twelve site observations conducted, the researchers assigned ratings across five dimensions: site organization, PPE compliance, fall protection, oversight, and safety culture. Three firms received two visits each to capture variation across different project contexts. The most consistent performers, Firms E, G, and D in an organized site context, showed strong average ratings. The production homebuilder (Firm I) showed ratings near the bottom across multiple dimensions. The second site of Firm B and the two micro-firm observation sites produced the low average scores in the sample, consistent with the absence of any formal safety system at either location. The average rating across all eleven observations was 2.5, a value that sits in between inconsistent and partial compliance.

Table 3: Site-Observed Safety Conditions by Dimension (Researcher Ratings, 1–5 Scale)

Firm	Visit	Site Organization	PPE Compliance	Fall Protection	Oversight	Safety Culture	Average
A	1 of 2	3	2	NA	3	2	2.5
A	2 of 2	3	3	NA	4	2	3
B	1 of 2	3	2	2	2	2	2.2
B	2 of 2	1	2	1	1	1	1.2
C	1 of 1	3	1	1	2	2	1.8
D	1 of 2	5	3	4	4	3	3.8
D	2 of 2	5	2	4	4	3	3.6
E	1 of 1	4	4	3	4	4	3.8
F	0	N/D	N/D	N/D	N/D	N/D	—
G	1 of 1	4	4	4	3	4	3.8
H	0	N/D	N/D	N/D	N/D	N/D	—
I	1 of 1	2	2	1	2	2	1.8
J	1 of 1	2	1	1	1	2	1.4
K	1 of 1	2	1	1	1	2	1.4
Average (n=11)	—	3.1	2.3	2.2	2.6	2.4	2.5

Ratings reflect researchers' field assessment on a 1–5 scale where: 1 = No evidence of practice; 2 = Minimal/inconsistent; 3 = Partial compliance; 4 = Mostly consistent; 5 = Strong and consistent; NA = Not applicable in the activity observed. Shading: green ≥ 4 , >2 yellow < 4 , red ≤ 2 . Two site visits were conducted for Firms B and D to capture variability across different project contexts. Firms F and H had no field notes available for this rating exercise due to incomplete or no site visit record. Firms J and K were documented through site observation only; ratings reflect observed conditions during visits at each location.

Unfortunately, the small family-owned contractor (Firm F), where safety was described by a family member as "everyone for themselves" with no training, no formal procedures, and injuries treated as a normal cost of work, illustrates the lower end of this spectrum. It stands as a cautionary example of what happens when personal values and minimal structural support are both absent. No safety culture, however genuine in intent, can substitute for the systems that carry it into the field. The two micro-firm sites extend this pattern to its logical conclusion. At Firm J, there was no safety framework of any kind, indicating not a failed system but an absent one. Safety management consisted entirely of the owner's personal risk experience, captured in his own words: he relies on experience, climbs the ladder, and stays ready to jump off it if needed. At the framing site (Firm K), a three-person family crew framing a residential home operated without a single safety system across four observation visits spanning six weeks. They had no hard hats, no fall protection during second-floor joist installation, no scaffolding at any phase of a full residential framing cycle, or a manual lift of a heavy glulam beam. These two micro-firms represent not a lower tier of safety culture but the absence of a safety culture tier entirely. They are the end of the spectrum where the conversation about formal safety programs becomes irrelevant, and the only relevant question is whether the worker who shows up goes home that evening.

4.2 Operational Pressures Shape Every Safety Decision

Eight of the nine firms that agreed to site visits described schedule pressure as the single most significant operational stressor affecting safety. The pattern was consistent across firm types. Production homebuilders described the pressure of staged completions and homebuyer move-in timelines. Remodelers described the challenge of keeping multiple simultaneous projects on track with small crews. Specialty subcontractors described short project windows of three to five days with little margin for delays. One production homebuilder manager captured the dynamic plainly: "Poor decisions can be made when you are in a hurry. Need to stop and think." That same interviewee acknowledged that when pressure is high, safety is deprioritized and the focus shifts to getting the work done. Cost pressure was a secondary but closely related stressor, cited by five firms, often in the context of subcontractor bidding and the difficulty of requiring safety investments from price-competitive subcontractors.

The two micro-firm sites add a dimension to this pressure pattern that the larger firms in the study could not. The owner of Firm J described his operational economics with unusual precision: sixty cents of every project dollar goes to labor and materials, leaving forty cents before his own time, tools, and overhead come out. In that model, there is no line item for scaffolding rental, PPE investment, or an additional laborer to foot an unsecured ladder. Schedule pressure for the owner of Firm J is not a competing priority. It is the arithmetic of his survival. The framing crew (Firm K), running three simultaneous projects from a home that requires forty-five minutes to commute to the project location, operated in the same logic: every day on one job is a day not on the next. The pressure was visible when they arrived, how fast they moved, and that they continued framing through rain when the schedule demanded it.

Site visits matched the interview descriptions of pressure-driven behavior. At the production homebuilder site (Firm A), foundation excavation crew members were observed without required PPE while a superintendent managed multiple simultaneous inspections, walkthroughs, and crew coordination tasks, a visible expression of the schedule pressure described in the interview. At the production homebuilder site (Firm I), roofers were observed working without being tied-off while cutting roof tiles, with no enforcement from the site superintendent. At the design-build remodeler sites (Firm D), a day with a hard concrete pour deadline produced noticeably compressed crew coordination. Table 4 summarizes the top operational stressors cited across the nine participating firms.

Table 4: Top Operational Stressors Across Firms

Stressor	# of Firms Citing	Representative Quote or Observation
Schedule pressure	8 of 9	"Poor decisions can be made when you are in a hurry. Need to stop and think." — Production homebuilder manager (West)
Cost / subcontractor bid pressure	5 of 9	"Safety is not part of pre-qualification decision. Safety is a secondary criterion. Cost, schedule, qualifications, and resources are typically used to determine whether a sub is qualified." — Production homebuilder (West)
Subcontractor compliance	7 of 9	"His company does not manage the sub's safety programs. His company just manages the site." — Production homebuilder (West)
Labor market scarcity	4 of 9	Four firms acknowledged subcontractor replacement was theoretically possible but practically unlikely in tight labor market conditions.
Multi-site management	5 of 9	Owners and project managers described safety visibility dropping consistently as the number of concurrent active projects increased.

Quotes drawn directly from interview notes.

The large production builder (Firm G) offered an instructive contrast. The project manager described being explicitly told by senior leadership that it was not necessary to be ahead of schedule. This position, deliberately resisting the pressure to rush, was visible on site, where crews were observed working methodically with full PPE in conditions that felt less pressured than comparable sites. The contrast is important: relieving schedule pressure is not simply a safety benefit. It is an organizational choice. Small firms can make analogous choices at their scale, and those choices reach the field.

4.3 Communication Is the Primary Safety Tool

When asked how they managed safety on their sites, the most common answer across participating firms was that they talked about it. Seven of the nine firms described communication, including morning meetings, toolbox talks, verbal instructions to crews and subcontractors on arrival, and regular walkthroughs with verbal feedback, as their primary mechanism for translating safety intent into site behavior. Few firms relied heavily on written systems, checklists, or formal documentation as day-to-day tools. Several design-build firms described production meetings that "always start with safety," with unique hazards on new jobs discussed before work begins. The specialty siding contractor described weekly toolbox meetings combined with both announced and unannounced site visits by a dedicated safety manager, a model that blended communication with active oversight. The exterior remodeler described communication through close working relationships, with the lead carpenter serving as the channel through which safety norms were transmitted to new workers.

Site visits by the researchers told a different story. At one design-build remodeling firm (Firm C), a well-organized morning shop meeting covering project assignments and crew logistics contained no safety content whatsoever, consistent with the firm's own acknowledgment that "safety was not part of that conversation" on most mornings. At that same firm's jobsite, a carpenter was observed working with fiberglass insulation without gloves or eye protection, and subcontractor crews were working at fall-hazard heights without fall protection, with no intervention from the GC's field representative.

This pattern, communication as intention without enforcement follow-through, was the most common finding across site visits. The verbal safety brief, when it occurred, was rarely reinforced by follow-up during the workday. Importantly, the firms whose communication patterns produced the most consistent field compliance were those where communication was structured, repeated, and backed by some form of consequence or reinforcement. The exterior siding contractor (Firm E) used toolbox meetings, unannounced visits, and financial accountability that gave communication a tangible stake. The large production builder (Firm G) maintained daily PM oversight throughout the workday. In both cases, the communication was not a single morning event. It was a continuous presence. Table 5 maps the alignment between interview accounts and site visit observations across five dimensions for each participating firm.

Table 5: Interview vs. Site Alignment — Interview-Observation Gap by Firm

Firm	Safety Posture	Pressure Management	Communication	Sub Management	Regulatory
A	Partial	Gap	Partial	Gap	Partial
B	Aligned	Aligned	Aligned	Partial	Partial
C	Partial	Partial	Gap	Gap	Partial
D	Partial	Partial	Partial	Partial	Partial
E	Aligned	Aligned	Aligned	Aligned	Aligned
F	Gap	Gap	Gap	Gap	Partial
G	Aligned	Aligned	Aligned	Partial	Aligned
H	Unknown	Unknown	Unknown	Unknown	Unknown
I	Unknown	Gap	Unknown	Gap	Unknown

Shading reflects researcher assessment of alignment between what company owners and managers described in interviews and what was observed on site. Aligned = consistent; Partial = some gaps; Gap = significant divergence; Unknown = insufficient data.

At the two micro-firm sites, communication as a safety tool was absent. At the site of Firm J, interactions between the company owner and his day-rate helper were task-directed: what to do next, how to do it correctly, when to move to a different part of the house. Safety was never the subject. The family on the framing site (Firm K) communicated through a working relationship built

over many shared projects; the communication was physical, gestural, and efficient. None of it carried a safety dimension. At these firms, the question is not how to improve safety communication. It is how to introduce it as a concept at all, in the operating context of a contractor whose entire daily bandwidth is consumed by keeping the project moving and the helper motivated.

4.4 Subcontractor Management Is the Weakest Link

Seven of nine participating firms described managing safety with subcontractors or trade partners as their most significant unresolved challenge. The structural issue is consistent across the sample. In small residential construction, the majority of physical work is performed by subcontractors who are not direct employees of the GC or developer, and who bring their own safety cultures, equipment, and compliance behaviors to each site. Firms addressed this gap in several ways: contractual language requiring subcontractors to comply with all safety rules, pre-qualification processes that nominally included safety, monthly safety meeting reports required as a condition of payment, or verbal instructions to sub crews on arrival. In most cases, however, these mechanisms transferred accountability on paper without ensuring compliance in practice. One production homebuilder described his firm's position directly: "His company does not manage the sub's safety programs. His company just manages the site." Another was equally candid: "Safety is not part of pre-qualification decision. Safety is a secondary criterion. Cost, schedule, qualifications, and resources are typically used to determine whether a sub is qualified."

Site visits provided the most direct evidence of the subcontractor safety gap. At the production homebuilder site (Firm I), roofers were observed cutting roof tiles without tie-off, scaffolding had unsecured mud sills, and workers across trades showed inconsistent PPE compliance, all without intervention from the site superintendent. At the design-build remodeler site (Firm C), a masonry subcontractor crew was working at fall-hazard heights without guardrails or tie-off, with no intervention from the GC's carpenter who was working nearby. At the production homebuilder sites (Firm A), a framing crew that had finished ahead of schedule left a site with poor housekeeping and construction waste, requiring a phone call from the project manager to prompt cleanup. In contrast, the exterior siding contractor (Firm E), which primarily functions as a subcontractor itself, showed the highest on-site PPE compliance of any site visited. That contrast is notable: a firm's position in the supply chain influences its safety posture in ways that contractual language alone does not.

The micro-firm sites add a variant of this challenge that formal subcontractor management frameworks cannot address. For Firm J, the day-rate helper relationship was the GC-subcontractor dynamic stripped to its minimum: a “1099 employee” (independent contractor compensated using the IRS Form 1099) arrangement with no employment relationship, no stake in the firm's long-term reputation, and no leverage point for sustained behavioral accountability. When the helper did not show up, the owner absorbed the full cost himself. At the framing site (Firm K), the general contractor who had hired the family crew informally was not present on any of the four observation days. The result was a site with no oversight structure above the crew itself. There was no mechanism through which a safety standard could have been enforced even if one existed.

The labor market added a further layer of constraint. Four firms explicitly mentioned that labor availability made it difficult to enforce consequences with non-compliant subcontractors. When pressed on what they would do if a subcontractor consistently ignored safety practices, most firms acknowledged that replacement was theoretically possible but practically unlikely in tight labor conditions. The firms most dependent on subcontracted labor were the least able to hold those subcontractors to safety standards, and therefore the most exposed to the liability that followed from that gap.

4.5 Regulatory Experience Shapes Posture, Not Practice

The firms participating in this study had varied regulatory compliance histories. Several had received state OSHA citations; a few had used state OSHA consultation services; and several, particularly smaller firms, had little to no direct state OSHA engagement on their worksites. What was consistent across firms was that regulatory experience shaped how the company owners thought and talked about safety more than it changed what happened on site. Firms that had received citations described investing more in documentation, signage, or particular equipment, but in most cases the response was targeted to the specific violation rather than systemic. One design-build firm owner described keeping a safety guard next to a table saw following an OR-OSHA citation, specifically in case OSHA returned. The reactive character of this response, i.e., compliance as a reaction to enforcement rather than as a proactive practice, was more common than not across the sample.

Firms operating in states with active enforcement environments, Washington State Department of L&I in particular, described the regulatory context as a genuine motivator. The exterior siding contractor (Firm E) explicitly linked its safety program to the financial consequences of WA L&I fines,

including the dynamic that fines are passed to the client, which gave safety a business development dimension alongside its compliance function. The large production builder (Firm G) described WA L&I's consultation services as helpful and distinguished that experience from enforcement visits. In contrast, firms in California described Cal-OSHA as primarily focused on commercial construction, with residential sites receiving minimal direct enforcement. The result, predictably, was less regulatory pressure on safety behavior.

The Hawai'i regulatory environment represents the lower bound of enforcement presence observed in this study. The owner of Firm J described his regulatory experience directly: he had never had OSHA come to the worksite on any project. He noted that OSHA appears on apartment complex projects, and that a contractor can get caught if an inspector drives by and sees someone on a roof not tied off. His entire regulatory exposure was described as line-of-sight from a passing vehicle. The framing crew's father made a parallel observation about trade associations: that BIA and ABC Hawai'i represent mid-to-large residential builders, and that firms his size cannot afford membership and are not the intended audience for those organizations' resources. Together, these two accounts describe a structural gap at the micro-firm level: no regulatory pressure from below, no trade association support from above. The minimum standard that enforcement provides in Washington, and to a lesser extent in Oregon and California, does not reach this layer of the residential construction market.

Several owners expressed a specific view of regulation's limits. One interviewee observed that "most residential contractors have safety as an afterthought," a characterization backed up by site visit findings across the study. The data across firms point to a consistent conclusion: regulation functions as a baseline on safety behavior, not a driver of best practice. Firms that exceeded the regulatory baseline did so because of company owner values, financial incentives, or peer culture, not because of enforcement alone.

Chapter 5

Best Safety Practice Recommendations

The recommendations that follow are organized into three clusters: Coordinate, Communicate, and Insulate. The three clusters are summarized in Figure 1, organized around how each approach shapes the safety management process and contributes to safety performance outcomes. The clusters correspond to the primary action domains where small construction firms have meaningful control over their safety outcomes. They emerged from the patterns documented in Section 4 and are designed to be practical for company owners without requiring significant additional resources or administrative infrastructure. Each recommendation is grounded in practices observed in or described by firms in this study. Importantly, the recommendations are not a checklist to hang on a wall. They are a set of daily operating disciplines.



Figure 1: The Coordinate–Communicate–Insulate typology to safety management in small construction firms

5.1 Coordinate

Coordinate addresses how the firm organizes safety responsibilities across its people, subcontractors, and projects. For small firms, the challenge is not the absence of a safety department. It is the absence of a dedicated person who is clearly responsible for safety oversight at every moment the work is underway. Coordination fills that gap.

- A named safety contact must be designated for every active project, not just for the firm as a whole. On multi-project firms, safety accountability disperses unless it is specifically assigned. Someone must own it on each site.

- Designating a named safety contact is a starting point, not a solution. The designation means nothing without physical presence. At one participating firm, a senior field supervisor with decades of institutional experience was described this way by a site colleague: when he is on site, things are different. That phrase should be the standard against which every named safety contact is evaluated. A name on a form changes nothing. A presence on site changes everything.
- Subcontractor safety expectations must be built into the contract before work begins, including PPE requirements, site access rules, and the right to stop work. Those expectations should be revisited at the preconstruction meeting, not left in the boilerplate where they are signed but not read.
- The GC's representative on site bears responsibility for what is visible. At one site, a general contractor's carpenter worked within fifteen feet of a subcontractor crew operating at fall-hazard heights with no tie-off and no guardrails. No intervention occurred. The legal liability and the human consequence of that choice are inseparable. GC field staff must understand that being present when a hazard goes unaddressed is not the same as being absent.
- Subcontractor safety track record should be treated as a selection criterion alongside cost and schedule, even informally. Firms that have worked with the same subcontractors across multiple projects know who is reliable and who takes safety seriously. That institutional knowledge must be made explicit and applied at the selection stage.
- Named, specific standards for site conditions travel farther than policy language. One production homebuilder established a company-wide housekeeping phrase — a specific, memorable descriptor for what the site must look like at all times — and communicated it consistently to subcontractor crews. When a framing crew left a site in poor condition, a single call from the superintendent produced cleanup within the hour. The speed of that response reflected a standard the crew already knew. Firms that give their expectations a name make those expectations enforceable without conflict.
- For firms running multiple concurrent projects, brief PM-to-company owner check-ins should include a safety status update alongside schedule and budget. The pattern across participating firms is clear: safety visibility drops as project count rises. Scheduling a standing conversation about safety status is a direct remedy.

5.2 Communicate

Communicate addresses how safety expectations reach the people doing the work, and how they stay active throughout the workday, not just at the morning briefing. The most consistent finding across site visits was that safety communication is front-loaded and then forgotten. The recommendations below are designed to change that pattern.

A secondary finding, equally consistent, was that PPE compliance proved highly task-specific when enforcement was verbal and situational. Across multiple site visits, workers who were asked to put

on gloves for a particular task — e.g., handling glass, managing sharp materials — complied immediately. The gloves came off when that task ended, without a word from anyone, and did not go back on for the next task even when that task carried similar risk. Communication that is tied to a specific moment does not generalize to the next moment. The recommendations below address this gap directly.

- Every production or site coordination meeting should open with one specific safety topic, not a general reminder but a distinct hazard relevant to that day's work scope. This practice was described by multiple firms as their single most effective communication habit.
- When a new subcontractor crew arrives on site, they must be briefed in person, not by pointing to a posted sign or a contract clause. The brief should cover the three safety issues most likely present on that site that day, such as fall exposure, housekeeping, and PPE requirements for the specific work scope, and how the crew should protect themselves from the hazards.
- PPE must be immediately accessible, not just available. The most common compliance failure observed across the site visits was PPE that was present but not within arm's reach when work was underway. PPE should be staged at the work location, not stored in a van parked at the street.
- Company owners, managers, and safety consultants must wear PPE on every active site, without exception. The most powerful safety communication a firm sends is behavioral. Across site visits in this study, the most consequential modeling gap observed was the inverse: a safety professional walking active construction sites without a hard hat, high-vis vest, or other required safety equipment while simultaneously instructing workers to wear theirs. Workers see that gap and draw conclusions that no verbal instruction will override. Walking the talk is not a soft cultural nicety. It is the primary signal from which workers calibrate what the standard actually is.
- Framing safety corrections collectively rather than individually produces better responses in the field. Experienced safety practitioners across this study described consistently stronger compliance when corrections were addressed as shared expectations rather than individual violations. "We need to make sure we are tied off" lands differently than singling out a crew member in front of peers. Small-firm field reality involves long-term working relationships. Maintaining those relationships while holding the standard requires communication that does not make compliance feel like a confrontation.
- Supervisors who narrate their own risk thinking in the moment give crew members something more durable than an instruction. At one remodeling firm, a project manager carrying a large mirror with a 1099 worker talked through his own decision-making aloud in real time: "I am not holding it from the bottom because the sharp edge is at my neck. If you lose your grip, just drop it — do not try to save it." That was not a safety lecture. It was informal on-the-job teaching, embedded in the task itself. Supervisors who explain the why behind their choices give crew members a mental model they can apply the next time the situation is similar, without needing to be asked.

- At least one unannounced site visit per week per active project by the company owner and/or safety manager should be a standing expectation, not an occasional occurrence. Even brief, unannounced presence changes behavior. The specialty exterior contractor in this study used this model with measurable results. Announced visits alone produce compliance theater; unannounced visits reveal the baseline.

5.3 Insulate

Insulate addresses how the firm protects safety decisions from the operational pressures that routinely override them: schedule compression, cost pressure, labor scarcity, and the daily urgency of getting work done. What is needed is a set of structured decisions, made before the pressure arrives, that reduce the probability of a safety shortcut when work gets tight.

One superintendent in this study, when asked directly whether subcontractor crews prioritized safety over speed, answered without hesitation: "I would be lying to you if I said they are safe first and work fast. A lot of them do feel the pressure. They might have two or three jobs to do today. So it is how fast can we go?" That candor is more useful than any reassuring interview account. It describes the field as it is. The Insulate recommendations below are designed for that field, not for the field that firms describe in interviews.

- A safety buffer must be built into project schedules at the estimating stage, not as padding but as allocated time for pre-task setup, including scaffold installation, fall protection rigging, and material staging. When safety time is not in the schedule, it gets borrowed from the work itself.
- The most direct form of insulation available from a company owner is a clear, explicit message that speed is not the primary goal. One large participating firm stood out in this study for a reason that had nothing to do with safety programs: its owner had told his project manager, plainly, that being ahead of schedule was not the expectation. That instruction was unusual in residential construction, where completing and selling homes quickly drives cash flow. It was also visible in the field. Sites where that message had been received showed higher and more consistent PPE compliance and more methodical crew coordination than comparable sites where production pressure had never been openly questioned. Company owners control that message. It does not require a policy revision. It requires a conversation.
- Stop-work expectation must be established for every crew member and subcontractor on the site, not just stop-work authority. Authority without expectation produces the same outcome as no authority at all. One firm described giving workers stop-work authority; the site visit revealed conditions that should have triggered it but did not. The difference between authority and expectation is the difference between permission and responsibility.
- Safety requirements must not be traded for schedule recovery. When a project falls behind, the first things to get cut are those that slow work down, which includes scaffolding setup, tying-off

while working at height, and pre-task briefings. If a project is behind, address the schedule directly. Do not borrow from the safety standard.

- Safety must be connected to the business outcomes company owners already track. Workers' compensation experience modification rates, client reputation, and the financial consequences of regulatory citations are tangible business levers. Framing safety in these terms, rather than as a cost item, insulates it from being treated as discretionary when the budget is tight.

It is important to make a note on micro-firm application, the organizational scale documented on a couple of sites. The Coordinate cluster assumes the firm has at least a working owner plus crew members with some continuity of relationship. For solo contractors and one-to-two-person operations, the coordinate cluster collapses to a single question: who, other than the person doing the work, is responsible for that person's safety? At that scale, the answer is often no one. The GC who hired them is not on site. The helper is a day-rate worker with no employment stake. JSI's most direct contribution to micro-firm safety may not be a program at all. It may be making that question visible — in the insurance renewal conversation, in the trade association outreach that does reach firms this small, in the peer network of contractors who know each other from shared project histories — and by establishing a norm that even a one-person operation has named someone who knows where they are working and what they are doing that day.

The recommendations above are designed for the company owner of small construction firms, not scaled-down versions of large-firm programs. Large contractors manage safety through dedicated safety officers, full OSHA-compliant written programs, mandatory subcontractor pre-qualification, and formal incident tracking systems. Small firms cannot replicate those structures, and attempting to do so often produces the compliance theater observed in this study: safety plans that exist but are not followed, toolbox talks that happen but are not retained, and subcontractor agreements that transfer liability on paper but not accountability in practice. The Coordinate-Communicate-Insulate framework is built around the actual points of control available to a firm with 3 to 30 people, a working company owner, and projects that move faster than any formal system can track. The goal is not compliance with a program. It is a daily operating discipline that makes the next close call less likely and ensures more workers go home safely at the end of each day. For the very smallest firms documented in this study, the one-to-three-person operations, even naming a safety contact and running a toolbox talk may not yet be in place. At that scale, the entry point is more elemental: eliminating the single unsecured ladder as the primary height access system, ensuring PPE is

purchased and staged at the work location before the job starts, and establishing a shared understanding that someone is actively watching for the hazard before it happens.

Chapter 6

Conclusions

Key Findings

The findings from this study describe a coherent and, in many ways, troubling pattern: small construction firms have well-intentioned safety cultures that break down at the point of execution, under predictable pressures, and in predictable ways. The breakdowns are not random. They cluster around schedule pressure, subcontractor interfaces, and the front-loading of safety communication. In total, the data point to a clear conclusion: closing the safety gap in small firms requires changing systems and incentives, not simply raising awareness.

Safety culture in small firms is principally a function of the company owner's personal commitment. That commitment is necessary but not sufficient. The gap between an owner's stated values and actual field conditions was visible in seven of the eight interview-paired site observations. At the two micro-firm sites, the gap took a qualitatively different form: there were no stated frameworks to compare against field conditions, because there were no frameworks. The absence was not implementation failure. It was the absence of the concept of implementation. The firms whose field conditions best matched their stated values were those that had translated owner commitment into structured elements — such as a dedicated safety manager, unannounced site visits, financial accountability tied to violations — rather than relying on culture alone. Safety values must be embedded in systems that carry them into the field when the owner is not present. At the micro-firm scale, the first structural element is simply naming a person whose job it is to care for the safety of those working in the field.

Schedule pressure is the most consistent driver of unsafe field behavior. Importantly, it is not a management failure. It is embedded in the business model of every firm in this study. Recommendations that do not account for this pressure at the estimating and contracting stage will not change behavior when that pressure arrives. Those implementing safety improvements in small construction firms must treat schedule pressure as a structural condition to be eliminated or designed around, not a behavioral problem to be corrected.

Subcontractor management is where the gap between stated practice and field reality is widest. Every firm in this study that relied on contractual language to enforce subcontractor safety compliance found that language was insufficient on its own. The firms that produced the most

consistent compliance combined written requirements with in-person briefings, unannounced presence, and some form of tangible consequence. Those elements cannot be separated. The contract is the starting point, not the solution.

Regulation shapes posture, not practice. Enforcement motivates investment in targeted fixes. It does not produce the daily operating discipline that keeps the next close call from becoming the next fatality. The value of regulation cannot be understated, but its limits are equally clear. Firms that exceeded the regulatory baseline did so because of owner values, financial incentives, or peer culture.

Implications for JSI and Trade Associations

What small firms can do differently is specific and bounded. No firm in this study needs a new safety program. What most of them need is better coordination at the estimating stage, communication practices that extend past the morning meeting, and at least one named person per project who is accountable for safety conditions, not just responsible for them in a general sense.

Stop-work authority exists in most of these firms on paper. Stop-work expectation, the shared understanding that any crew member is genuinely expected to stop work when conditions are unsafe, exists almost nowhere. That is the cultural gap that procedure documents cannot close by themselves. Company owners and field leads must model stop-work expectation explicitly, repeatedly, and without penalizing the person who calls to stop the work.

For JSI and trade associations, the implication is practical. Owner-to-owner peer networks are more credible to small firm operators than safety programs developed outside the industry. Short, trade-specific checklists tied to the three recommendation clusters in this report, coordination, communication, and structural insulation from schedule pressure, are more likely to be used than broad safety management programs. Simply stated, tools that fit the reality of a 15-person remodeling firm are more valuable than those designed for a 500-person general contractor. Associations that place safety track record in subcontractor prequalification processes will change firm behavior faster than those that place it in a guidance document.

Regulators face a different challenge. Enforcement presence has an effect, but the effect in this study was reactive and site-specific. Inspection strategies that focus on fall protection systems and subcontractor crew working conditions, the two areas where site visits found the largest and most consistent gaps, would address actual risk rather than documented procedure. The value of that reorientation cannot be understated.

One implication cuts across all three stakeholder groups. The micro-firm tier — contractors with one to three workers, operating outside trade association reach, with regulatory visibility limited to what a passing inspector can see from the street — is not currently served by any of the delivery mechanisms this study evaluated. JSI is among the few organizations positioned to think and act strategically about how to reach that tier. Owner-to-owner peer networks that include contractors at the one-to-five-person scale are the most direct path. Insurance brokers who serve the residential market at the micro-firm level are another. The finding that trade association membership is economically inaccessible to micro-firm contractors is not just a study limitation. It is a finding about where the most exposed workers in residential construction are not being reached, and by whom. Addressing that gap is not a research question. It is a design challenge, and it is the most direct extension of this study's findings into action.

Limitations

Three limits of this study merit acknowledgment. Eleven firms cannot represent the full range of small construction firm types, regions, or trade specialties. And firms that agree to participate in a safety study may already be better disposed toward safety than those that do not. The patterns found here should be tested against larger samples, particularly in regions with different regulatory environments, before being treated as universal.

Second, the two micro-firm sites were documented through site observation and informal conversation only. The absence of structured interview data limits direct comparison against the rest of the sample. Future research that pairs direct observation with structured interviews at the one-to-five-person firm scale would strengthen the lower end of the size spectrum and would likely surface additional findings about the economic and regulatory conditions that keep the smallest contractors below the threshold of any formal safety system. A stratified analysis by firm size using systematic sampling would also increase the precision of recommendations considerably.

Third, the sample's upper boundary deserves a note. Firm G, the large residential production builder with more than fifty employees and a dedicated safety manager, sits above the small business threshold by employee count and organizational complexity. It was retained as a reference case because its safety program illustrates what the Section 5 recommendations look like when more fully implemented, and because the contrast with micro-firm conditions is analytically useful. But its presence in the sample inflates the apparent upper end of the study's small-firm range. Researchers

building on this work should treat the core small-firm findings as most applicable to firms in the three-to-thirty-employee range, where the structural conditions documented here are most consistently present.

What this study can affirm with confidence is that the safety gap at small firms is not a knowledge problem. These company owners know what good safety practice looks like. The gap is structural and operational. Closing it requires addressing the conditions under which safety decisions actually get made, not the knowledge of the people making them. That is the work ahead, and JSI is well positioned to lead it.

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