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Restoring project control following the transition from subcontracted to contractor takeover in residential construction: A case study of communication, progress verification, and stakeholder management

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Abstract: This study examines project performance recovery following the transition from subcontracted execution to direct main-contractor control in a two-story residential construction project in Taman Simpruk, Lippo Cikarang, Indonesia. A descriptive-evaluative single-case study used project documents, progress reports, quantity-verification records (*opname*), payment claims, schedules, communication records, stakeholder complaints, field observations, and photographic evidence. The findings indicate that project disruption was associated with weak communication discipline, irregular progress reporting, discrepancies between reported or claimed progress and verified work, and insufficient responsiveness to external stakeholders. At approximately 30% verified physical progress, the subcontracting arrangement was terminated, and execution of the remaining work was transferred to direct main-contractor control. Post-transition recovery involved re-verification of completed quantities, work resequencing, closer field supervision, payment-claim review, and stronger stakeholder coordination, with monitored physical progress subsequently reaching approximately 60%. The evidence indicates improved managerial visibility, a more traceable schedule and cost control, and greater attention to environmental protection, documentation, payment accountability, and professional responsibility. However, the study does not establish quantified schedule or monetary savings, nor does it confirm comprehensive SMKK/K3 compliance. Overall, the findings indicate that transferring execution control to the main contractor can support project recovery when accompanied by verified progress control, communication discipline, stakeholder responsiveness, direct supervision, and accountable managerial oversight.

Keywords: construction project control; contractor takeover; project communication; project performance recovery; stakeholder management

1. Introduction

Construction projects depend on coordinated relationships among contractors, subcontractors, owners, workers, suppliers, and external stakeholders (Ali & Haapasalo, 2023; Shehadeh & Alshboul, 2025; Yang et al., 2023). Their performance depends not only on technical execution but also on the quality of information exchange, stakeholder engagement, progress verification, and managerial decision-making. Effective communication enables project participants to clarify responsibilities, monitor progress, respond to emerging problems, and coordinate interdependent activities, whereas communication failures can lead to delayed decisions, inconsistent information, rework, and schedule deterioration (Gamage, 2022; Huo et al., 2025). Empirical evidence from construction projects has shown that communication practices are closely associated with project outcomes, including time, cost, quality, and safety performance (Manuputty & Nursin, 2023;

Utama et al., 2024). Miscommunication has also been identified as a key contributor to construction delays and reduced work quality (Abdallah et al., 2024).

These management challenges are particularly relevant in residential construction within an active neighborhood. Unlike isolated construction sites, residential projects operate near occupants, neighbors, estate management, security personnel, and other parties who may be directly affected by noise, dust, material movement, access restrictions, housekeeping conditions, and construction safety (Celik & Budayan, 2016). Consequently, local stakeholders cannot be treated merely as peripheral actors; their concerns and responses can influence the continuity and acceptability of construction activities. Recent evidence from residential building projects indicates that effective stakeholder management contributes positively to project performance and stakeholder satisfaction, reinforcing the need to manage both internal project relationships and external stakeholder expectations throughout project execution (Abolghasemi et al., 2026). More broadly, stakeholder communication needs may also change with stakeholder salience and the project life cycle stage (Al Naqbi et al., 2025).

Subcontracting adds another layer of managerial complexity because the main contractor remains accountable for overall project performance while delegating portions of field execution to another party (Debelo & Weldegebriel, 2022; Fridkin & Kordova, 2022; Hua et al., 2025). Under such arrangements, reliable progress reporting, clear work boundaries, site supervision, verification of completed quantities, and alignment between actual work and payment claims become critical control mechanisms (Eid et al., 2026; Radman et al., 2025). Previous studies consistently identify poor communication, weak coordination, subcontractor performance problems, and ineffective planning as important sources of construction delays and conflict (Tariq & Gardezi, 2023). In addition, inadequate communication between project participants and non-cooperation or incompetence among subcontractors have been recognized as significant schedule risks that require structured coordination and monitoring responses.

The present case concerns the construction of a two-story residence in Taman Simpruk, Lippo Cikarang, where part of the work was initially assigned to a subcontractor. During implementation, the project experienced weak progress communication, discrepancies between reported or claimed progress and verified site conditions, and complaints from the surrounding residential environment. These problems weakened the main contractor's ability to maintain reliable control over progress, payments, field coordination, and stakeholder responses (Irfan et al., 2019; Olawale & Sun, 2010; Rajapakshe, 2025). When physical progress reached approximately 30%, the subcontracting arrangement was terminated, and the main contractor took over the remaining works directly (Ng & Tang, 2010). The takeover therefore represented more than a change in the executing party; it constituted a corrective intervention intended to restore managerial control through progress re-verification, schedule restructuring, cost control, strengthened field supervision, and more direct communication with relevant stakeholders.

Although previous research has extensively identified communication deficiencies, stakeholder problems, poor subcontractor performance, and ineffective coordination as causes of construction delay, the literature has predominantly examined these factors as antecedents of project performance or as general determinants of delay (Banobi & Jung, 2019; Sourav et al., 2025; Zara et al., 2023). Studies of residential projects have similarly emphasized relationships between stakeholder management, satisfaction, and overall performance (Abolghasemi et al., 2026), while broader delay research has focused primarily on identifying and ranking delay and conflict factors (Abdallah et al., 2024; Tariq & Gardezi, 2023). Less attention has been given to what happens after a subcontractor-related performance breakdown has already occurred, particularly how the main

contractor can recover project control after taking over the work and how communication, stakeholder management, schedule control, cost verification, and construction safety interact during that recovery process. This post-takeover recovery stage constitutes the principal research gap addressed by the present case study.

The novelty of this study therefore lies in its integrated, recovery-oriented analysis of a subcontractor takeover in an occupied residential-project environment. Rather than examining communication failure or stakeholder management as isolated variables, the study traces how weaknesses in contractor–subcontractor communication, progress verification, and external stakeholder handling were associated with project disruption. Subsequently, it evaluates the managerial measures used to restore control after the takeover.

The study further connects project recovery with schedule and cost control while recognizing that acceleration or corrective field actions must remain consistent with construction-safety requirements. In Indonesia, construction activities are subject to the Construction Safety Management System framework established under Minister of Public Works and Housing Regulation No. 10 of 2021, reinforcing that recovery measures should not compromise occupational, engineering, environmental, or public safety. Against this background, the study addresses the following research questions:

RQ1. How did weaknesses in stakeholder management and project communication among the main contractor, subcontractor, and external stakeholders contribute to delays in the residential construction project?
RQ2. How did the main contractor's takeover of subcontracted work affect project performance recovery in terms of schedule and cost control?
RQ3. How were construction safety, engineering ethics, and professional engineering responsibilities incorporated into the project recovery process following the subcontractor takeover?

To address these questions, this study adopts a single-case study approach with a descriptive orientation and an evaluative analytical purpose. The analysis draws on project documents, progress records, payment records, field documentation, communication records, stakeholder complaints, schedules, and other relevant project evidence. The study examines how communication and stakeholder-management deficiencies were associated with project disruption and how project control was subsequently restored after execution shifted from the subcontractor to the main contractor. It pays particular attention to progress verification, schedule and cost control, stakeholder coordination, construction safety, and professional engineering responsibility. Rather than seeking broad causal generalizations, the study provides evidence-based insights and practical lessons for contractors managing similar subcontractor-related disruptions in residential construction projects.

2. Methods

2.1 Research design and case boundary

This study adopted a single-case study design with a descriptive orientation to examine project performance recovery following the transition from subcontracted execution to direct main-contractor control. A case study approach is appropriate for investigating a contemporary phenomenon within its real-life context, particularly when contextual conditions are integral to understanding the phenomenon (Creswell & Poth, 2024; Yin, 2018). The evaluative analytical purpose of the study lies in assessing the adequacy and contribution of recovery measures, such as

progress re-verification, work resequencing, strengthened communication, stakeholder coordination, closer field supervision, and payment-claim review, using the available documentary and field evidence.

The case involved a two-story residential construction project in Taman Simpruk, Lippo Cikarang, Indonesia. The analytical boundary covered the execution period immediately before and after the transition to direct main-contractor control. The unit of analysis was the project recovery process, with particular attention to project communication, stakeholder management, schedule and cost control, construction safety, and professional responsibility. The study did not employ an experimental design; therefore, the analysis focused on evidence-based description, comparison, and evaluation of the recovery process rather than statistical causal inference.

2.2 Data sources and evidence collection

Multiple sources of evidence were used to develop a traceable account of the project and reduce dependence on a single source (Yin, 2018). Documentary evidence included schedules, progress reports, quantity-verification records (*opname*), subcontractor payment claims, cost records, communication records, stakeholder complaints, field reports, and photographs. Document analysis was conducted systematically by extracting information relevant to the research questions and comparing records across sources (Bowen, 2009).

Field evidence comprised direct observations, photographic documentation, and clarification from project personnel familiar with project execution. These sources were used to verify physical progress, site conditions, communication problems, stakeholder responses, the takeover decision, and subsequent recovery measures. Table 1 summarizes the relationship between evidence sources and their analytical purposes.

Table 1. Data sources, evidence, and evaluation purposes

Analytical domain	Principal evidence	Evaluation purpose
Project communication	Instructions, reports, communication and coordination records	Assess clarity, timeliness, consistency, and traceability
Stakeholder management	Complaints, responses, stakeholder and field records	Examine stakeholder concerns and project responses
Subcontractor control	Reported progress, verified progress, *opname*, claims	Assess consistency between completed work, reporting, and payment
Schedule recovery	Planned schedule, actual progress, delay and resequencing records	Evaluate schedule control following takeover
Cost control	Claims, verified quantities, recovery costs, additional works	Evaluate cost implications of takeover
Construction safety	Observations, photographs, safety records	Assess safety practices during recovery
Professional responsibility	Verification, decisions, communication, accountability records	Assess transparency and professional responsibility

2.3 Analytical strategy

Analysis was structured according to the three research questions. This question-driven approach enabled different forms of evidence to be examined using analytical procedures appropriate to each research objective (Yin, 2018). Project records were first classified by analytical domain and arranged chronologically to reconstruct events from subcontractor involvement through disruption, takeover, and recovery. Table 2 summarizes the analytical framework.

Table 2. Alignment of research questions, analytical approaches, and expected outputs

Research question	Analytical logic	Main comparison/evidence	Analytical outcome
RQ1 Communication and stakeholder-management problems	Process-oriented diagnostic analysis	Chronology, communication records, stakeholder complaints, progress evidence	Reconstruction of how communication and stakeholder-management deficiencies were associated with project disruption
RQ2 Effect of subcontractor takeover	Before–after comparative evaluation	Schedule, progress, opname, claims, recovery costs	Assessment of changes in schedule and cost control following takeover
RQ3 Safety, ethics, and professional responsibility	Normative-evaluative analysis	Site evidence, safety records, verified progress, decisions and accountability	Assessment of whether recovery practices were safe, transparent, and professionally responsible

For RQ1, the analysis examined communication clarity, progress reporting, coordination, stakeholder complaints, and inconsistencies between reported and actual conditions. For RQ2, the analysis compared project conditions before and after takeover in terms of progress, delay, work resequencing, verified quantities, subcontractor claims, and identifiable recovery costs. For RQ3, recovery practices were evaluated against construction-safety requirements, including Indonesia's Minister of Public Works and Housing Regulation No. 10 of 2021, together with principles of transparency, accountability, and professional engineering responsibility. Figure 1 presents the overall analytical structure.

2.4 Data credibility and evidence synthesis

Data credibility was strengthened through source triangulation. Progress reports, *opname* records, photographs, communication records, stakeholder complaints, schedules, payment information, and field clarification were cross-checked for convergence or inconsistency. Where contradictory information existed, greater evidentiary weight was assigned to traceable records directly linked to physical project conditions, particularly verified quantities, dated photographs, and contemporaneous field records. The three analytical streams were subsequently integrated through a within-case recovery synthesis. Rather than treating communication, stakeholder management, schedule, cost, and safety as independent findings, the synthesis examined their position within the project recovery process. Figure 2 shows the resulting sequence.

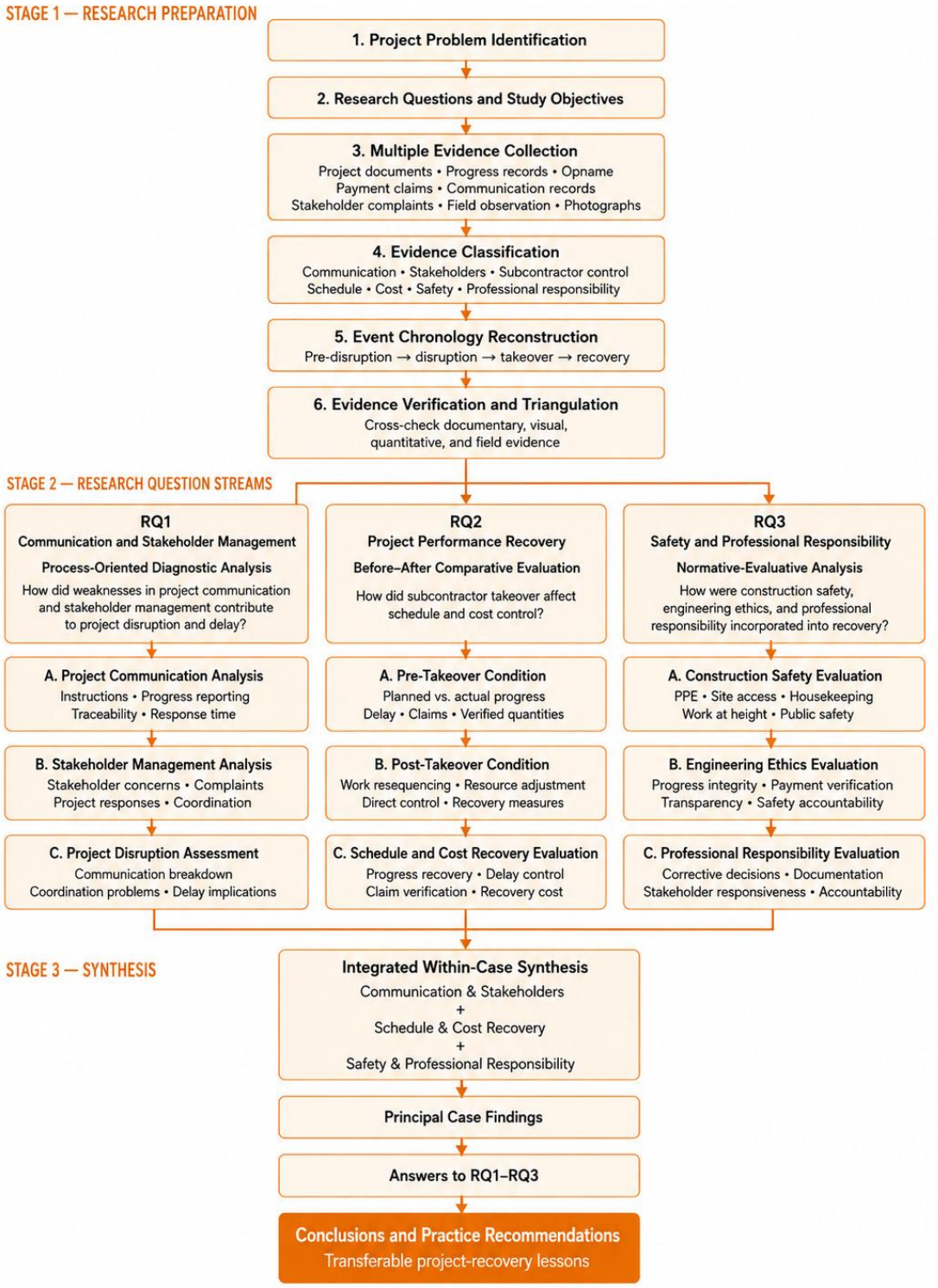


Figure 1. Research implementation and analytical framework

Figure 2. Project-recovery evidence synthesis sequence

3. Results and discussion

The case evidence revealed a sequence of project-control problems that culminated in the termination of the subcontracting arrangement and the transfer of execution control to the main contractor. During subcontracted execution, progress reporting was irregular, several work instructions were insufficiently documented, verified physical progress did not fully correspond with subcontractor payment claims, and complaints emerged from the surrounding residential environment. When verified project progress reached approximately 30%, the main contractor terminated the subcontracted arrangement and assumed direct control of the remaining works. The subsequent recovery process involved re-verifying completed quantities, restructuring the schedule, increasing field supervision, reviewing costs and claims, and coordinating more directly with project stakeholders. This chronology provided the basis for the three analytical streams corresponding to RQ1–RQ3.

3.1 Communication and stakeholder-management deficiencies associated with project disruption

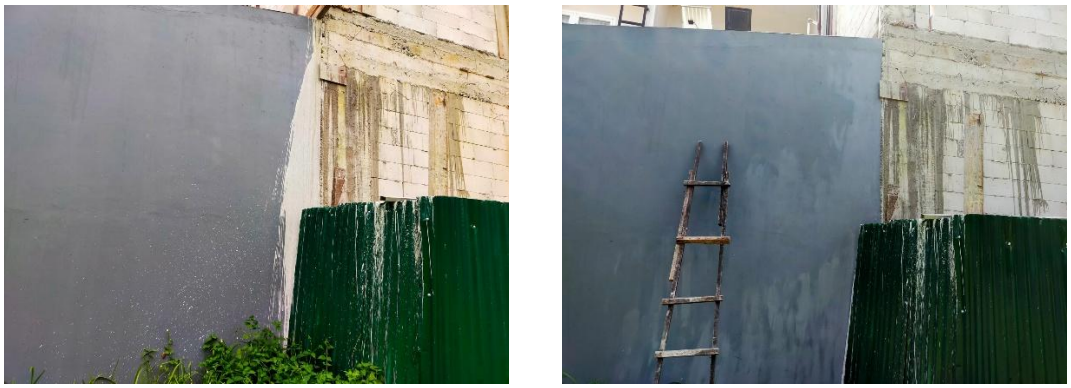
The evidence addressing RQ1 indicates that project disruption was linked to interconnected weaknesses in project communication, subcontractor control, and external stakeholder management rather than a single isolated problem. Progress information was not consistently communicated in a clear, measurable, and documented manner, while several field constraints required repeated follow-up before corrective action could be taken. These conditions reduced the main contractor's ability to establish an accurate and timely understanding of actual project status and consequently constrained managerial decision-making.

Internal project communication records documented repeated exchanges concerning actual work progress, schedule slippage, material and resource requirements, funding status, and requests for updated progress information. The records also showed that reported site progress and the resources already provided required further clarification between the main contractor and the

subcontractor. This pattern suggests that communication functioned largely as an informal problem-solving mechanism rather than through a consistently structured reporting and escalation process. Consequently, progress verification, resource allocation, and responses to emerging constraints depended heavily on repeated follow-up between the parties. To protect confidentiality and avoid reproducing personally identifiable information, the original messaging screenshots are not presented; only the substantive content relevant to the analysis is reported.

These communication records cannot be interpreted as evidence that funding constraints alone caused the project delay. Rather, they indicate a broader project-control problem in which progress status, resource requirements, schedule deviation, and subcontractor reporting repeatedly required clarification. Project records further showed that progress reporting was irregular, field conditions were not always communicated through a formalized reporting mechanism, and additional verification was required before the main contractor could determine an appropriate corrective response.

A related control issue concerned the consistency between reported progress, physically verified completed work, and subcontractor payment claims. Project records indicated that claimed progress did not fully correspond with quantities that could be verified in the field, making additional opname and payment review necessary. This discrepancy reduced the reliability of reported progress as a basis for schedule monitoring and cost-related decisions and increased the need for direct verification by the main contractor. External stakeholder management represented another pathway through which project execution was disrupted. Because the project was located within an active residential environment, construction activities directly affected nearby residents through cleanliness, dust, noise, access, material placement, and general site conditions. Complaints from neighbouring stakeholders therefore had operational significance because unresolved concerns could require work activities to be adjusted, rescheduled, or temporarily constrained.



(a) Observed Site-Boundary Condition (b) Subsequent Corrective Site Treatment

Figure 3. Site condition and subsequent contractor response associated with a neighboring stakeholder concern

Figure 3 documents the same project-boundary area at two stages associated with a neighbouring stakeholder concern. The photographs are not intended to represent conditions before and after the transition to direct main-contractor execution. Rather, they illustrate an observed site-boundary condition that required contractor attention and the subsequent corrective treatment implemented in response. Although the photographs alone do not quantify the effect of the corrective treatment or establish a causal relationship with project delay, they provide visual support for the documented stakeholder concerns regarding environmental disturbance and site

control. In this case, stakeholder concerns created an additional management demand alongside schedule, resource, and subcontractor-control issues. Project records indicate that neighbouring residents and estate-related stakeholders, although not directly involved in technical decision-making, could influence field execution when construction activities affected their immediate environment. This finding reinforces the importance of considering external stakeholder responsiveness as part of day-to-day project control in an active residential setting. Table 3 summarizes the principal deficiencies and their immediate project consequences.

Table 3. Observed communication and stakeholder-management deficiencies and their project consequences

Observed issue	Evidence from the case	Immediate project consequence	Relevance to RQ1
Irregular progress reporting	Progress was not consistently reported or supported by field evidence	Actual work status became difficult to establish promptly	Weakened progress control
Poorly documented work instructions	Instructions were frequently communicated verbally	Increased potential for misunderstanding and inconsistent execution	Weakened contractor–subcontractor coordination
Delayed escalation of site constraints	Field problems were not always communicated promptly	Corrective decisions were delayed	Slower managerial response
Progress–claim discrepancy	Payment claims did not fully correspond with verified work quantities	Re-verification and payment review became necessary	Linked communication failure with cost-control risk
Unstructured handling of stakeholder complaints	Complaints related to cleanliness, dust, noise, access, and site order	Work activities required adjustment and stakeholder response	External stakeholder issues contributed to project disruption

Taken together, these findings indicate that communication and stakeholder-management deficiencies contributed to project disruption through several interconnected mechanisms. Incomplete and poorly documented information reduced managerial visibility; discrepancies between reported progress and physically verified quantities increased the need for re-verification; and unresolved external stakeholder concerns introduced additional constraints on field execution. The evidence summarized in Table 3 further shows that weak communication discipline, insufficient progress verification, inadequate subcontractor control, and limited responsiveness to external stakeholders operated concurrently rather than as isolated problems. Their combined occurrence complicated managerial decision-making and weakened the consistency of project implementation.

Accordingly, RQ1 is answered by showing that project delay was associated with the combined presence of weak communication discipline, insufficient progress verification, inadequate subcontractor control, and limited responsiveness to external stakeholders. Consistent with the single-case, nonexperimental design, these relationships are interpreted as an evidence-supported process pattern rather than as statistically demonstrated causal effects.

3.2 Project performance recovery following subcontractor takeover

The evidence addressing RQ2 indicates that the transition from subcontracted execution to direct main-contractor control altered the project-control mechanism and represented an important stage in the recovery process. Prior to the transition, verified physical progress had reached approximately 30% and remained below the planned target. Progress reporting required repeated verification, work sequencing was affected by coordination constraints, and managerial decisions were limited by incomplete and insufficiently reliable information. These conditions reduced the main contractor's visibility of actual project status and complicated timely responses to field constraints.

(a) Incomplete work area prior to the transition

(b) Partially completed structural works prior to the transition

Figure 4. Project Conditions Prior to Subcontractor Takeover

Figure 4 documents project conditions prior to the transition to direct main-contractor execution. The photographs show incomplete work fronts and partially completed areas consistent with documentary records indicating that verified progress remained below the planned target. The photographs are not used to quantify the magnitude of delay; rather, they provide visual support for the recorded condition of incomplete execution at this stage. Following the transition, the main contractor assumed direct responsibility for the remaining execution, introduced closer progress monitoring, resequenced activities according to recovery priorities, and strengthened day-to-day coordination and field supervision. Project records indicate that monitored physical progress subsequently reached approximately 60%.

(a) Continued Building Works Under Direct Main-Contractor Execution

(b) Upper-Level Work Area Under Direct Main-Contractor Execution

Figure 5. Project conditions after subcontractor takeover and direct main-contractor control

Figure 5 documents continued project execution after the main contractor assumed direct control of the remaining work. The photographs support the documentary record that recovery activities were accompanied by more direct field supervision and continued implementation across previously incomplete work areas. As with Figure 4, the visual evidence serves as supporting documentation rather than an independent measure of schedule performance. The cost-control evidence indicates a corresponding shift in the basis for payment and quantity verification. Prior to the transition, subcontractor claims were not fully aligned with physically verified progress, requiring additional review before payments could be reconciled with completed work. Following the transition, completed quantities were rechecked through opname, payment claims were reviewed against verified work, and unfinished or corrective works were identified more systematically. These measures strengthened the traceability of cost-related decisions and reduced uncertainty regarding the relationship between completed work and payment claims.

However, the available case evidence does not provide sufficient numerical information to establish a quantified monetary saving attributable to the transition. Accordingly, the findings should be interpreted as evidence of improved cost-control traceability, verification, and accountability, rather than as proof of cost savings. Similarly, although monitored physical progress increased from approximately 30% to approximately 60%, the available records do not permit a precise calculation of schedule recovery attributable solely to the change in execution control. Table 4 therefore summarizes observed changes in the project-control process rather than causal effects.

Table 4. Changes in project control before and after contractor takeover

Project-control dimension	Before takeover	After takeover	Evidence-based evaluation
Physical progress	Approximately 30%; below planned target	Subsequently monitored at approximately 60%	Direct control improved visibility of progress
Progress reporting	Irregular and required re-verification	More directly linked to observed field conditions	Reporting became more traceable
Work sequencing	Affected by coordination constraints	Resequenced according to recovery priorities	Execution became more structured
Decision-making	Slower because information was incomplete	More direct under main-contractor control	Response to field constraints improved
Payment basis	Claims were not fully aligned with verified progress	Claims were reviewed against *opname* and actual completed work	Payment control became more accountable
Remaining work and recovery cost	Difficult to define before verification	Assessed from unfinished and corrective works	Recovery planning became more evidence-based
Cost outcome	Cost risk from delay, rework, and claim disputes	Direct verification reduced uncertainty	No quantified cost saving can be established from the available evidence

Taken together, the evidence indicates that the transition to direct main-contractor execution functioned as a control-restoration opportunity rather than as a recovery outcome in itself. Its

contribution to the recovery process was associated with the managerial measures implemented after the transition, including physical progress verification, work resequencing, closer supervision, payment-claim review, and more direct field coordination. Accordingly, RQ2 is answered by showing that the transition was associated with stronger schedule and cost control through improved managerial visibility, verification, traceability, and execution coordination. However, the available evidence does not support a causal claim that the transition alone produced the subsequent increase in physical progress, nor does it establish quantified schedule or monetary savings.

3.3 Construction safety, ethical control, and professional responsibility during recovery

The evidence addressing RQ3 indicates that the recovery process involved more than schedule and cost intervention. Following the subcontractor takeover, project recovery included attention to construction safety, environmental protection, progress-data integrity, payment accountability, project documentation, and professional responsibility. The documented evaluation therefore suggests that recovery was treated not only as a matter of accelerating work, but also as a process requiring safer site control, more accountable decision-making, and greater managerial discipline.

The clearest evidence concerning construction and environmental safety relates to site protection measures implemented during recovery. Project records indicate that safety-related attention covered site access, housekeeping, work organization, material arrangement, and protection of the surrounding residential environment from construction impacts. This is consistent with the project's active-residential context, in which recovery actions had to consider not only workers and on-site activities but also nearby residents and adjacent properties. Figure 6 illustrates a documented environmental protection measure introduced after improvements in site control, showing protective screening and covering intended to reduce disturbance to the neighboring area during recovery works.

Figure 6. Environmental protection measures implemented during post-takeover project recovery

Figure 6 is particularly important because it provides visual evidence that the recovery process incorporated preventive measures directed not only at internal construction control but also at protecting the surrounding environment. In this respect, safety should be understood broadly, encompassing housekeeping, boundary control, and mitigation of potential impacts on neighboring stakeholders rather than being limited to worker protection. The evidence on engineering ethics was strongest regarding data integrity and payment accountability. Physical progress was rechecked

through opname and supporting documentation, while subcontractor claims were reviewed against verified completed quantities. This reduced the risk of accepting reported progress or payment requests without sufficient evidentiary basis. Complaints from affected stakeholders were also considered in project responses, indicating that decision-making after takeover became more grounded in documented project conditions and observable field realities.

Professional responsibility was further reflected in the way the takeover and subsequent recovery measures were managed. Work resequencing, closer field supervision, stronger daily coordination, documented corrective actions, and communication with relevant stakeholders all indicate a more accountable mode of project control after takeover. These practices suggest that the recovery process relied increasingly on professional judgment, documentation, and direct managerial oversight rather than on unverified reporting alone. At the same time, the evidence can be interpreted carefully: the case documents demonstrate the presence of specific safety and professional-control practices, but they do not establish full compliance with all regulatory or professional standards because no comprehensive SMKK/K3 audit was undertaken. Table 5 summarizes the main evidence related to safety, ethical control, and professional responsibility.

Table 5. Evidence related to safety, ethical control, and professional responsibility during project recovery

Dimension	Documented/evaluated evidence	Result supported by the evidence	Interpretation boundary
Construction and environmental safety	Site control, access, housekeeping, material organization, environmental protection	Safety considerations were incorporated into recovery evaluation	Does not constitute a full K3/SMKK compliance audit
Progress-data integrity	Physical progress checked through *opname* and documentation	Improved traceability between reported and actual work	No independent external audit was conducted
Payment accountability	Claims reviewed against verified completed quantities	Reduced risk of unsupported payment approval	Monetary savings cannot be quantified
Professional decision-making	Takeover based on progress condition, claims, field evidence, and project disruption	Corrective action became more evidence-based	Does not assess contractual legality
Documentation and communication	Progress, claims, complaints, and corrective actions documented	Strengthened accountability and information traceability	Quality of all communication records was not independently scored
Field leadership	Worker supervision, work organization, and daily coordination strengthened	Supported more structured project control	Does not demonstrate elimination of all execution risks

Taken together, the evidence supports a bounded conclusion for RQ3. The recovery process incorporated specific safety, ethical, and professional-control considerations, particularly environmental protection, progress verification, payment accountability, documentation, and direct supervision. However, the findings do not support a broader claim that all safety or professional requirements were fully satisfied. Instead, they show that post-takeover recovery became more accountable and more explicitly attentive to safety and professional responsibility

than during the earlier stage of disrupted subcontracted execution. Accordingly, RQ3 is answered by showing that construction safety, engineering ethics, and professional engineering responsibility were incorporated into the recovery process through protective site measures, verification-based control of progress and claims, stronger documentation, and more direct managerial supervision. In line with the case-study design, this conclusion is based on documented project evidence and professional evaluation rather than on a formal compliance audit.

3.4 Integrated discussion: from project disruption to control restoration

Across the three analytical streams, the case demonstrates a transition from fragmented project control to a more integrated and traceable recovery process. Before the transition to direct main-contractor execution, irregular communication, insufficiently documented instructions, discrepancies between claimed and verified progress, and unresolved stakeholder concerns reduced managerial visibility and complicated schedule, payment, and field-control decisions. These observations align with previous construction research identifying ineffective communication and coordination as key contributors to delays, inconsistent information, and reduced project performance (Abdallah et al., 2024; Gamage, 2022; Manuputty & Nursin, 2023; Utama et al., 2024). The present case extends these findings by showing how communication deficiencies became operationally linked to progress verification and payment control: unreliable reporting not only delayed information exchange but also required repeated physical verification before schedule and payment decisions could be made.

The case also reinforces previous research emphasizing the importance of stakeholder management in residential construction. Prior studies indicate that stakeholder relationships and responsiveness are associated with project performance and stakeholder satisfaction (Abolghasemi et al., 2026; Yang et al., 2023), while stakeholder needs may vary by salience and project stage (Al Naqbi et al., 2025). In the present case, neighboring residents and estate-related stakeholders were not passive external parties. Concerns about cleanliness, access, environmental disturbance, and site conditions created additional management demands that could affect field execution. The findings therefore extend the literature by showing that, during project recovery in an active residential environment, stakeholder responsiveness becomes part of operational project control rather than functioning solely as a relationship-management activity.

The transition from subcontracted execution to direct main-contractor control also distinguishes this work from much of the existing subcontracting and delay literature. Previous studies have primarily emphasized subcontractor performance, coordination, planning, and communication as sources of project delay or conflict (Debelo & Weldegebriel, 2022; Fridkin & Kordova, 2022; Tariq & Gardezi, 2023). In this case, however, the analytical focus extends beyond identifying the source of disruption to examining what occurred after the subcontracting arrangement was terminated. Recovery did not result merely from changing the executing party. It involved re-establishing control mechanisms through physical progress verification, work resequencing, closer field supervision, payment-claim reconciliation, and more direct coordination. This distinction matters because it shows that transferring execution responsibility alone is insufficient; recovery depends on rebuilding the managerial control system around execution.

The principal contribution and novelty of this case study therefore lies in conceptualizing post-subcontractor disruption recovery as an integrated control-restoration process. The within-case evidence identifies four mutually reinforcing elements: communication discipline, verified progress control, stakeholder responsiveness, and accountable managerial oversight. Together, these elements improved the reliability of project information and supported more evidence-based decisions concerning work sequencing, progress, payments, stakeholder responses, and site

management. This recovery-oriented perspective complements the predominantly antecedent-focused literature by shifting attention from why project disruption occurs to how project control can be restored after disruption has already occurred.

Nevertheless, the findings do not establish that the transition to direct main-contractor execution alone caused the subsequent improvements. The available evidence does not quantify schedule or monetary savings and does not demonstrate comprehensive compliance with all safety requirements. Within the case examined, the observed recovery occurred alongside direct main-contractor execution, verification procedures, structured communication, strengthened supervision, stakeholder coordination, and accountable project-control practices.

4. Implications and limitations

The findings suggest that recovery from subcontractor-related disruption should not be understood merely as a change in the executing party. More importantly, recovery requires restoration of the project-control system through documented communication, verified progress measurement, reconciliation of payment claims with completed work, work resequencing, and closer field supervision. For residential projects, stakeholder responsiveness should also be integrated into routine project control because complaints related to access, cleanliness, environmental disturbance, and adjacent properties may affect field execution. The case further indicates that recovery measures should maintain construction safety, data integrity, payment accountability, and professional responsibility. Accelerating the remaining work should not compromise worker and public safety, the accuracy of progress records, or fairness in payment decisions. Accordingly, this study's practical contribution is showing that direct main-contractor control is most useful when paired with stronger verification, coordination, supervision, and accountable decision-making.

The study used available project documents, progress and payment records, field photographs, schedules, and communication evidence. To protect confidentiality, the study excluded personally identifiable information and reported communication records in summarized form rather than through identifiable screenshots. Interpretation was based on cross-checking multiple sources to reduce reliance on isolated records. The available study documentation does not provide a verifiable formal ethical-approval number; therefore, the manuscript does not claim such approval. If written authorization for academic use of project data is available, it should be stated explicitly in the final version.

Several limitations should be considered. First, this is a single residential construction case, so the findings are context-specific rather than statistically generalizable. Second, the completeness of historical project records varied, limiting precise reconstruction of all project decisions. Third, the available evidence does not permit quantified estimates of schedule recovery or monetary savings attributable solely to the transition to direct main-contractor execution. Finally, the assessment of construction safety, engineering ethics, and professional responsibility was evidence-based rather than a formal compliance, financial, or legal audit. Future studies should use multiple cases and a more complete longitudinal schedule, cost, safety, and stakeholder data to test whether similar recovery patterns occur in other construction settings.

5. Conclusion

This study shows that project disruption in the residential construction case was associated with interconnected weaknesses in communication, progress verification, subcontractor control, and external stakeholder management. Prior to takeover, irregular reporting, insufficiently

documented instructions, discrepancies between claimed and verified progress, and stakeholder concerns reduced managerial visibility and complicated schedule, payment, and field-control decisions. The subcontractor takeover subsequently provided a basis for restoring project control through physical progress verification, work resequencing, claim review, closer supervision, and more direct stakeholder coordination.

The findings indicate that the takeover should not be interpreted as the sole cause of project recovery. Rather, its contribution arose from the control measures implemented after the transfer of execution responsibility. These measures improved the traceability of progress and payment decisions, supported a more structured schedule and cost control, and placed greater emphasis on environmental protection, documentation, and professional accountability. However, the available evidence does not establish quantified schedule savings, monetary savings, or comprehensive compliance with all SMKK/K3 requirements. In practice, main contractors should strengthen communication discipline, link progress and payment approval to verified site evidence, promptly escalate field constraints, and integrate stakeholder responsiveness into routine project control. Where subcontractor performance deteriorates, corrective action should therefore focus not only on replacing the executing party but also on restoring the underlying systems of verification, supervision, coordination, and accountability. Future research could examine similar recovery processes across multiple construction projects using more complete longitudinal schedule, cost, and safety data.

Author's declaration

Author contribution

Ramadhansyah: Conceptualization, Methodology, Investigation, Data curation, Formal analysis, Writing – original draft, Visualization. **Andreas Arianto Pramudya:** Supervision, Validation, Methodology, Writing – review and editing.

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Conflict of interest

The authors declare no known financial or non-financial competing interests related to this study.

Data availability

The data supporting the findings of this study are available from the corresponding author upon reasonable request, subject to project confidentiality requirements.

Ethical considerations

Ethical approval was not required because this study involved construction project analysis using project records and observations without human intervention or sensitive personal data collection.

AI statement

No artificial intelligence (AI)-assisted tools were used in the preparation of this manuscript. The authors conducted all research activities, analysis, interpretation, and manuscript preparation independently.

Publisher's and Journal's note

Universitas Negeri Padang, as the publisher, and the Editor of Jurnal Pendidikan Teknologi Kejuruan state that there is no conflict of interest towards this article publication.

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