

Developing A Streamlined S.O.P. For 2-Day Studio Fit-Outs: An Expert Feasibility Validation

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Abstract- *This study addresses the critical challenge of achieving a reliable, high-quality 2-day studio unit fit-out in the Philippine high-rise sector, where traditional renovation timelines often fail to meet the demands of rapid real estate turnover. To standardize this radical schedule compression, the research develops a Streamlined Standard Operating Procedure (SOP) that harmonizes the technical build with multi-layered administrative requirements. The study employs a theoretical framework synthesizing Lean Construction, High-Reliability Organization (HRO), and the Theory of Constraints (TOC) principles to analyze and resolve industry flow disruptions. Grounded in a convergent parallel mixed-methods design, the methodology utilizes a pragmatic approach to collect and evaluate data from 64 purposively selected industry practitioners operating within the high-density urban centers of Makati and Taguig.*

The analysis confirms the high operational feasibility of the proposed strategies across the project lifecycle, culminating in a comprehensive 50-item Streamlined SOP that systematically addresses both administrative and technical variables. By mitigating logistical bottlenecks and standardizing administrative pre-clearance, the SOP transforms the fit-out process from an ad-hoc, error-prone endeavor into a predictable, high-reliability operation. The study concludes that achieving consistent 2-day fit-outs requires a fundamental industry shift toward a synchronized 'housing factory' model, which integrates industrialized, off-site execution with rigorous administrative coordination. Ultimately, this research provides an actionable blueprint for systemic operational reform, offering a scalable model for repeatable, high-quality project delivery in the Philippine residential sector.

Index Terms- *rapid construction, studio unit fit-out, streamlined sop, high-rise residential, lean construction*

I. INTRODUCTION

Traditional condominium renovations within high-rise residential buildings are frequently characterized by protracted, multi-week schedules that prioritize serial

task completion, often resulting in significant downtime. However, the contemporary high-density real estate market demands a more agile approach to maximize return on investment, necessitating a radical transformation in construction timelines. Achieving a high-quality, 2-day studio unit fit-out has become a critical objective for developers seeking to capitalize on rapid real estate turnover, yet this ambitious goal confronts substantial hurdles within the Philippine high-rise sector. Existing renovation processes are typically insufficient for such aggressive schedule compression, as they lack the synchronized management and streamlined procedures required to navigate the complex administrative and logistical barriers inherent in vertical residential developments.

To address these systemic inefficiencies, this study establishes a validated, integrated, step-by-step Standard Operating Procedure (SOP) designed to navigate the multifaceted constraints of Philippine high-rise residential environments. By meticulously harmonizing physical technical builds with a comprehensive framework of administrative requirements—such as security protocols, permit acquisition, and stakeholder coordination—this research provides a structural blueprint for operational reform. The implementation of this framework aims to transition the 2-day fit-out from an ad-hoc, error-prone aspiration into a stable, repeatable, and high-quality performance standard, offering an actionable model for maximizing project efficiency and reliability in the residential construction industry.

II. IDENTIFY, RESEARCH AND COLLECT IDEA

The preliminary phase of this research focused on establishing the operational viability of 2-day studio

fit-outs in the Philippine high-rise residential sector. This process involved:

- 1) Read already published work in the same field: Extensive review of established literature in Lean Construction (TFV theory), High-Reliability Organization (HRO) theory, and the Theory of Constraints (TOC) was conducted to build a conceptual framework for rapid schedule compression.
- 2) Goggling on the topic of your research work: Research focused on market feasibility and demand profiles within high-density business districts like Makati and Taguig, identifying specific administrative bottlenecks and logistical constraints inherent in Philippine vertical residential developments.
- 3) Attend conferences, workshops and symposiums on the same fields or on related counterparts: Engagement with industry practitioners and construction management experts provided real-world validation of the study, capturing the qualitative "knowing-in-action" of project managers and contractors operating in complex urban environments.
- 4) Understand the scientific terms and jargon related to your research work: Operational definitions were formalized for key methodologies, including Location-Based Management Systems (LBMS), Takt time planning, and the 'housing factory' model, ensuring a precise and standardized application throughout the proposed 50-item Streamlined SOP.

III. WRITE DOWN YOUR STUDIES AND FINDINGS

Now it is the time to articulate the research work with ideas gathered in above steps by adopting any of below suitable approaches:

A. Bits and Pieces together

This research methodology centered on the intricate synthesis of fragmented management philosophies—specifically integrating Lean Construction for waste reduction, High-Reliability Organization (HRO) for fostering cognitive resilience, and the Theory of

Constraints (TOC) for identifying critical bottlenecks. Rather than relying on isolated management techniques, the study engaged in a comprehensive synthesis, where disparate principles were unified into a singular, cohesive operational framework tailored for the unique complexities of the Philippine high-rise residential landscape. By meticulously adapting proven industrial manufacturing production standards to the distinct administrative and logistical constraints of vertical developments in urban hubs like Makati and Taguig, the research successfully bridged the persistent gap between abstract management theory and the unpredictable realities of site-level execution, ensuring that every strategic element was rigorously contextualized for practical application.

This iterative process culminated in the development of a 50-item Streamlined Standard Operating Procedure (SOP) that serves as the cornerstone of the research output. Far from being a purely theoretical construct, this document functions as a practical, actionable blueprint designed to stabilize the inherently chaotic nature of rapid interior renovations. By integrating these disparate "bits and pieces" into a unified whole, the SOP transforms an unpredictable, ad-hoc endeavor into a predictable, repeatable rhythm of high-reliability execution, providing practitioners with a reliable mechanism for achieving consistent, high-quality results.

Jump Start

This approach was significantly enhanced by the guidance of fellow researchers and industry practitioners. The thesis relied on continuous feedback from 64 construction professionals in Makati and Taguig, enriching the SOP with expert comments and practical validation, which allowed the study to confidently transition from theoretical framework to actionable research.

B. Expert Feasibility Validation and Methodological Framework

Instead of using software-based simulations, this study validated the feasibility of the 'housing factory' model through empirical evaluation. By collecting structured feasibility data from 64 purposively selected industry practitioners—including project managers, site engineers, and contractors in Makati and Taguig—the research transformed theoretical concepts into a

validated SOP. This expert-driven validation provided the necessary empirical evidence to confirm that the 50-item protocol is operationally viable in the high-density residential sector. The feedback gathered from these professionals served as the primary instrument for 'simulating' and vetting the 2-day fit-out process, ensuring the SOP is grounded in real-world application rather than abstract modeling.

IV. GET PEER REVIEWED

This step was critical for the validation of the Streamlined SOP for 2-day studio fit-outs. The research manuscript underwent rigorous evaluation by an expert panel, including my adviser, Dr. Jocelyn A. Rivera-Lutap, and the thesis evaluation committee, whose critical feedback ensured the academic and operational integrity of the proposed 50-item protocol. Furthermore, the study's validity was strengthened by the active participation of 64 purposively selected industry practitioners—including project managers and site engineers from Makati and Taguig—who provided empirical validation of the proposed strategies. My colleagues and fellow construction professionals also provided continuous feedback throughout the process, enriching the findings with expert comments and practical insights that transformed the framework from a theoretical model into a vetted, actionable industry standard.

V. IMPROVEMENT AS PER REVIEWER COMMENTS

The evolution of this research from a theoretical exploration into a validated industry standard was fundamentally driven by the iterative peer-review and rejoinder process. The critical evaluations provided by the thesis committee, led by my adviser, Dr. Jocelyn A. Rivera-Lutap, were instrumental in shaping the academic rigor of the study. These evaluations forced a deeper examination of the core theoretical underpinnings—specifically the synthesis of Lean Construction, HRO, and the Theory of Constraints—ensuring that the final framework was not only logically consistent but also academically robust enough to meet graduate-level standards.

Beyond the academic panel, the study underwent a transformative refinement process through the active

engagement of 64 purposively selected industry practitioners and various construction colleagues. This empirical validation was essential, as these professionals scrutinized the draft 50-item protocol against the harsh, day-to-day realities of site conditions in high-density urban centers like Makati and Taguig. By incorporating their practical insights, site-specific roadblocks, and field-tested feedback, the theoretical model was polished into a highly responsive, site-ready framework that bridges the gap between abstract management theory and the unpredictable nature of actual construction.

Consequently, this study has successfully transitioned from a preliminary exploration into a vetted, actionable industry standard for the Philippine residential sector. The final Standard Operating Procedure (SOP) stands as a testament to this comprehensive refinement process, offering a high-reliability operational blueprint that is ready for industrial application. By harmonizing academic theory with real-world empirical validation, the resulting model provides developers and contractors with a clear, standardized pathway toward achieving radical schedule compression, ensuring that the 2-day fit-out is no longer an aspirational goal but a repeatable, reliable operational reality.

VI. CONCLUSION

This study has successfully established a validated, 50-item Streamlined Standard Operating Procedure (SOP) that transforms the radical 2-day studio unit fit-out from an ambitious aspiration into a repeatable, high-reliability performance standard. By synthesizing Lean Construction, High-Reliability Organization (HRO), and the Theory of Constraints (TOC), the research bridges the gap between traditional administrative friction and the precision required for rapid production.

Crucially, the finality of this research was solidified through an extensive peer-review and rejoinder process. The critical evaluations by the thesis committee and the empirical validation provided by industry practitioners were instrumental in refining the initial framework. As detailed in the formal response and rejoinder, these iterative critiques acted as a polishing mechanism, ensuring that the SOP is not

only academically rigorous but also operationally resilient against the logistical and bureaucratic bottlenecks of Philippine high-rise environments. This study stands as a vetted, actionable blueprint for systemic operational reform in the residential construction sector, offering a scalable model for repeatable, high-quality project delivery.

APPENDIX

Instrument

The research utilized a comprehensive three-part survey instrument titled the 'Studio Unit Fit-out Efficiency Survey,' specifically engineered to benchmark and validate the operational strategies required for a 2-day studio unit fit-out. Part I of the instrument establishes the demographic and professional baseline of the study by capturing detailed respondent profiles, including years of professional experience, primary roles within the construction industry, and the volume of fit-out projects managed. This ensures that the data is derived from practitioners possessing the necessary 'job competence' to provide reliable assessments. Part II serves as the primary quantitative engine, utilizing a 5-point Likert scale to evaluate the feasibility of 43 distinct streamlined strategies. These strategies are methodically categorized across the project lifecycle—Pre-Construction, Construction, and Post-Construction—to ensure comprehensive coverage of both technical and administrative variables.

Part III of the instrument shifts the focus toward qualitative exploration, allowing respondents to provide critical feedback and identify additional innovative practices not captured by the structured strategies in Part II. This section is vital for understanding the 'work-as-done' reality, as it invites expert participants to offer specific criticisms, feedback on operational roadblocks, and suggestions for procedural improvement. By integrating both structured Likert-scale evaluations and open-ended feedback, the survey instrument functions as a powerful tool for empirical validation, effectively bridging the gap between theoretical lean construction models and the practical, high-velocity demands of the Philippine residential construction sector. This dual-method approach ensures the resulting SOP is

grounded in both rigorous expert consensus and real-world site experience.

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