

FROM LEAN PROJECTS TO LEAN ENTERPRISE: USING HOSHIN KANRI TO MAKE LEAN CONSTRUCTION STICK

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ABSTRACT

Lean Construction research has shown that project teams can achieve meaningful improvements in planning reliability, coordination, and performance. However, these gains often weaken once projects end, as teams disperse, priorities shift, and improvement routines are not consistently carried forward. This recurring reset highlights a key gap: while Lean Construction has been extensively studied at the project level, limited attention has been given to the enterprise-level governance systems required to sustain implementation over time in project-based firms. This paper addresses that gap by examining Hoshin Kanri (HK) as a strategic management system that may support long-term Lean sustainment. Using an exploratory, interpretive literature synthesis of Lean Construction, Hoshin Kanri, and organizational learning literature, the study identifies recurring implementation barriers and analyzes how HK governance mechanisms may respond. The analysis highlights three sustainment challenges: initiative overload, uneven adoption across projects, and weak cross-project learning. It then shows how HK mechanisms—priority focus, cross-level alignment, and structured review cycles—may help connect enterprise strategy with project execution and ongoing learning. The paper reframes Lean sustainability as an enterprise governance problem rather than a tool deployment issue and proposes propositions to guide future empirical research.

KEYWORDS

Lean Construction (LC), Hoshin Kanri (HK), enterprise-level implementation, policy deployment, organizational learning.

INTRODUCTION

Lean Construction (LC) has gained real traction in the construction industry to improve how projects are planned and delivered. Over the last few decades, practices such as the Last Planner® System, pull planning, visual management, target value delivery, and integrated forms of project delivery have shown that teams can make work more reliable and collaboration more predictable and coordinated when Lean principles are applied with intention.

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In practice, many contractors experience a recurring cycle. Lean practices may generate strong results on a given project—improving planning reliability, coordination, and production flow—but those gains often weaken once the project ends and the team disperse. Lessons learned do not consistently transfer to subsequent projects, and the continuation of Lean practices frequently depends on individual champions rather than on durable organizational routines. As a result, Lean implementation across projects can appear uneven and episodic rather than embedded in normal company operations. The research conversation mirrors this reality. Compared to enterprise-level, portfolio-level, and multi-year organizational learning, LC literature has focused much more on project-level methods and outcomes as opposed to enterprise-level strategy and deployment. Many companies are not failing because the tools do not work. They struggle because there is no management system that keeps priorities clear, connects improvement work to strategy, and sustains feedback and adjustment routines across projects as conditions, leadership, and delivery contexts change.

This is where Hoshin Kanri (HK) can help. HK is commonly defined as a structured approach to strategy deployment that aligns long-term organizational direction with short-term objectives and day-to-day management through systematic planning, alignment, and review (Akao, 1991; Tennant & Roberts, 2001). The term originates from the Japanese words *hoshin* (方針), meaning direction or guiding policy, and *kanri* (管理), meaning management or control, reflecting its emphasis on managing organizational direction in a deliberate and systematic way. In simple terms, it is a way to translate strategic intent into day-to-day execution, then check and adjust through feedback and review to ensure that the day-to-day execution succeeds in realizing the strategy. HK pushes an organization to pick a small set of priorities, align plans across levels and functions, solve problems together, and use PDCA as a routine practice, not a one-off event.

Evidence from industry sectors including manufacturing, healthcare, large-scale capital projects, and a construction company suggests that HK can strengthen the link between strategic direction and operational improvement. Research is also showing HK's value in complex project environments and large programs (Leth et al., 2019; Rodríguez et al., 2023). However, HK's role in construction, and specifically the potential opportunity it offers to support enterprise-level LC implementation across multiple projects over time, remains underexplored. Much of the existing construction discussion is based on isolated examples, leaving open questions about how HK could function as a governance and learning system that endures beyond any single project. Governance refers to the management system that sets priorities and defines metrics, allocates resources, aligns improvement efforts across projects, and sustains learning over time. It is not about control or compliance, but about how Lean is steered and reinforced at the enterprise level.

This paper addresses that opportunity by exploring how HK can help tackle persistent barriers to sustainable LC implementation at the enterprise level in construction companies. The intent is not to position HK as a replacement for Lean methods, but to examine it as an enabling management system that can connect Lean strategy to execution, support systematic learning from projects, and reduce dependence on individual project-by-project adoption.

This paper is exploratory by design. We start by laying out the recurring barriers that make Lean hard to sustain inside construction companies, then group those barriers into a small set of themes. From there, we look at how the HK approach could help and where it might fall short. Our aim is to make the conversation on enterprise Lean in construction more concrete and to set up future research that can be tested in real organizations.

ENTERPRISE LEAN CONSTRUCTION AND HOSHIN KANRI

LEAN CONSTRUCTION BEYOND THE PROJECT LEVEL

Within the LC community, there is broad agreement that Lean can deliver project-level gains when applied with discipline. Decades of research and practice have shown that when production planning, coordination, and learning routines are applied consistently, teams can significantly improve reliability, collaboration, and overall project performance (e.g., Ballard, 2000; Howell & Ballard, 1999; Koskela, 1992). For the purposes of this paper, these project-level benefits are taken as a given rather than something that needs to be re-established.

Less established is what happens to those gains once a project ends. Much of the LC literature treats the project as the primary unit of analysis, often examining implementation in isolation or under favorable conditions such as strong owner sponsorship or pilot settings (e.g., Jolayemi, 2008; Leth et al., 2019). Comparatively less studied is how Lean capabilities are governed, sustained, and built up at the enterprise level, across contractor's portfolio over time.

Construction projects are temporary by design. Teams form, deliver, and then disperse. Contracts change. Leadership rotates. In that environment, Lean practices are often mobilized as responses to local project needs and less so as part of an enduring organizational system. Research on temporary organizations and project-based settings has long pointed out that learning does not carry over by default. Unless insights from one project are deliberately built into everyday routines, standards, and management practices, they tend to stay where they were created (Scarborough et al., 2004; Williams, 2008). In many companies, the result is that teams end up solving the same problems repeatedly, even when those problems are already well understood and solved.

Our framing in this paper shifts the core question. The key issue is whether contractor organizations have management systems capable of carrying priorities, learning, and accountability from one project to the next, across changing conditions.

ENTERPRISE-LEVEL CHALLENGES IN LEAN CONSTRUCTION IMPLEMENTATION

If you zoom out from a single project and look at the company, the sustainability issue of lean thinking shows up fast. Most contractors are juggling several projects at once, and no two projects are the same. One is design-build with an engaged owner, another is hard-bid, another is a joint venture, and yet another is a fast-track project where everyone is just trying to keep up. In that mix, the people running the work day-to-day are usually the project teams, while the team—that set priorities, strategy, performance management, staffing, and incentives—at the company level sit somewhere else. When there is no reliable way to connect those layers, Lean tends to become a set of local practices rather than an enterprise-wide capability (Witcher & Chau, 2007; Rodríguez et al., 2023).

The pattern is familiar. Lean gets framed as “how we run this project better,” not as a strategic priority that leadership actively manages across a project portfolio. Leaders may sponsor a rollout, but attention can drift once the initial push is over or when the business gets busy. At the same time, the metrics that matter at the corporate level often live in a different universe from the numbers teams use to manage production on site. Financial outcomes get tracked centrally; production reliability gets tracked locally; and the two do not always match up with each other (Tennant & Roberts, 2001; Pheng et al., 2009).

Learning between projects is another place where opportunities get lost. Many organizations conduct a lessons-learned session at the end of their projects. Some even create good A3s. But the handoff from “we learned something” to “we changed how the company operates” is often weak. The result is that progress depends on a few people who know how to run Lean routines and keep them honest. When those people rotate, get promoted, or leave, the capability can drop quickly (Leth et al., 2019).

Lean tools can still work at the project level but sustaining them across the organization is more difficult. The problem is that, without a management system that keeps priorities aligned and learning loops alive, Lean is exposed to everyday new projects, new leaders, and new pressures, and it slips back toward whatever the local norms and received traditions have been.

HOSHIN KANRI AND ITS FIT FOR SUSTAINED LEAN CONSTRUCTION

If Lean is the set of routines you run on projects, organizations can use HK to decide which routines, and how they keep attention on them year after year. HK grew out of Japanese quality management, labelled policy deployment or strategy deployment. The label is less important than the practical idea: pick a small number of priorities, translate them into concrete work, then keep coming back to them through regular review and adjustment (Akao, 1991; Jolayemi, 2008).

One backbone of HK is catchball. Catchball is the part of HK that practitioners usually recognize immediately. Instead of leadership writing targets, emailing them out, and hoping they stick, the targets and the “how” get pushed back and forth across levels and functions until people can commit to them. It is a negotiation process: What is realistic not (or later)? What tradeoffs are being made? What resources are missing? What will count as success? (Tennant & Roberts, 2001; Witcher & Butterworth, 2001).

The other backbone is the review cadence. HK treats PDCA as a management beat: annual direction setting, monthly (or periodic) checks, and frequent operational conversations that identify gaps early. The goal is not perfect forecasting. It is to notice when things start to drift, learn quickly, and adjust before small misses in performance, coordination, or alignment compound into bigger problems (Hutchins, 2016; Pavlíčková et al., 2022). Evidence from manufacturing, services, and large program environments suggests these routines—such as regular strategy reviews, periodic performance check-ins, and structured problem-solving discussions—can tighten the link between strategy and improvement without prescribing a single “right” set of operational tools (Witcher & Chau, 2007; Leth et al., 2019).

Put simply, LC and HK speak to different parts of the same problem. LC has mostly built knowledge around project production—how planning and control routines improve flow and reliability on a project. HK is more about the organization around those projects: how priorities are chosen, how plans are coordinated across departments such as operations, engineering, and commercial teams, and how learning is carried forward when the work and the people change.

That distinction matters for “sustained Lean.” Many of the pain points construction companies run into—fragmentation, uneven adoption, and learning that stays stuck inside one project—are not really tool problems. They are management system problems. They show up when improvement work is not linked to strategy, when review cadence is inconsistent, and when there is no practical way to carry learning from one team to the next. HK complements Lean methods by offering mechanisms that may help close that gap between project-level Lean improvements and company-level priorities, learning, and accountability.

RESEARCH APPROACH AND SCOPE

This paper is exploratory. It looks at how HK might help a construction company sustain LC in a way that sticks across projects, across teams, and over multiple years. The motivation is simple: Lean practices are well covered in the project-level literature, but the “how do we keep it going as normal management?” question is still less clearly answered when we zoom out to the enterprise level.

This paper takes an exploratory perspective and focuses on conceptual connections rather than testing causal hypotheses or measuring performance outcomes. The goal is to pull together what existing research and documented practice already suggest about the role HK could play in making Lean less episodic and more business-as-usual.

The main research question is: What does the existing literature suggest about how HK can support sustainable (business-as-usual) LC implementation at the organizational level in a project-based company (as construction companies are)? In answering this question, the paper focuses on mechanisms and patterns described in prior work, and it is careful not to make causal claims.

ANALYTICAL METHOD

The study uses interpretive literature synthesis to examine connections between Lean Construction sustainment challenges and Hoshin Kanri governance mechanisms. Sources were screened for explicit descriptions of (a) enterprise-level LC sustainment challenges and (b) HK routines and governance mechanisms (e.g., catchball, cadence, executive diagnosis, deployment structures). These sources were primarily identified through searches of academic databases and conference publications using keywords related to Lean Construction implementation, Hoshin Kanri, and strategy deployment. Relevant text segments were coded into recurring themes and analytically clustered into the mechanism categories that will be presented later in this paper. Given the niche nature of the topic there is no single, standardized database that captures all relevant material. As a result, the sourcing is not limited to conventional academic repositories.

To reduce case-specific storytelling, claims were retained only when supported by at least two independent sources, or by one detailed construction case alongside one cross-industry HK source. Sources are drawn from three areas: (1) LC publications that discuss implementation beyond a single project; (2) strategy deployment, continuous improvement, and organizational learning literature relevant to project-based firms; and (3) studies and documented cases where HK has been applied in construction or closely related industries.

HK is used here as an analytical lens to interpret patterns in the literature rather than as an empirically evaluated intervention. The study looks at how common Hoshin ideas (e.g., aligning priorities, deploying goals, and running regular review cycles) connect to the long-term implementation challenges of LC, highlighted in the previous section. Insights are developed by comparing recurring themes across sources, especially around: (a) alignment between strategy and project execution, (b) embedding improvement into routine management, and (c) building learning loops that carry from project to project.

As a literature-based exploratory study, the outputs are interpretive. The contribution is conceptual clarification and a sharper agenda for future empirical research, rather than a validation of HK's effectiveness in construction organizations.

OPERATIONAL MECHANICS OF HK AND THEIR RELEVANCE FOR SUSTAINING LC

This section looks “inside the engine” of HK. Rather than treating HK as an abstract alignment idea (or reducing it to a single artifact such as an X-matrix), the focus here is on the detailed steps and routines that make HK operate as a management system over time. The core claim emerging from the literature is that HK matters because it creates a repeatable governance cycle that connects strategic intent to day-to-day management, while keeping learning active across years, not just within a single project (Jolayemi, 2008; Tennant & Roberts, 2001).

For LC at the enterprise level, this emphasis is important because the typical failure mode is not a lack of Lean methods, but weak “carryover.” Practices are piloted on one project, then drift or disappear when the team disbands, the client context changes, or leadership attention moves elsewhere. HK is repeatedly presented to prevent that drift by making priorities, follow-up, and learning part of normal management work.

DEEP STRUCTURE OF HK: STEPS, ROUTINES, AND GOVERNANCE

HK as a Closed-Loop Management Cycle (PDCA Embedded In Governance)

Across foundational descriptions, HK is built around a recurring Plan–Do–Check–Act logic. The “Plan” is not simply a strategic plan document; it is the discipline of selecting a small set of priorities, defining means and measures, and setting up the organization to execute and learn. The “Check” is not end-of-project reflection; it is a structured cadence of review that checks both results and the health of the management process itself (Tennant & Roberts, 2001).

This closed-loop framing directly addresses the enterprise-wide LC challenge: improvement tends to be episodic and personality-dependent. When leaders change, or when a wave of projects ends, the system loses memory. HK attempts to keep memory alive by requiring leaders to revisit priorities, inspect progress, and adjust course as part of routine governance.

Ten-step HK Process and What Each Step is Doing

A widely cited “Western-type” depiction of HK breaks the process into ten interrelated steps: (1) pre-planning analysis; (2) mission definition; (3) values articulation; (4) vision formulation; (5) long- and medium-term objectives; (6) annual planning; (7) deployment; (8) implementation; (9) monthly review; and (10) annual review (Jolayemi, 2008). While this ten-step depiction can be understood as an extended PDCA cycle, the literature emphasizes that HK applies PDCA at the level of strategy deployment and organizational governance, rather than at the level of individual projects or processes. Following prior literature, this paper draws on Western interpretations of HK that explicitly formalize deployment and review mechanisms for project-based organizations (Jolayemi, 2008; Tennant & Roberts, 2001).

Across the literature, HK is consistently described as a recurring governance cycle that links strategic intent to day-to-day management. Rather than emphasizing individual steps, authors highlight three core functions that matter for sustaining improvement in project-based organizations: (1) prioritization, through the deliberate selection of a small set of “vital few” objectives; (2) translation, through deployment mechanisms that convert enterprise intent into feasible commitments at lower levels; and (3) review cadence, through structured, recurring PDCA-based reviews that connect execution with learning (Jolayemi, 2008; Tennant & Roberts, 2001). This framing shifts attention away from the mechanics of planning and toward the routines that keep improvement active over time.

From LC perspective, the key takeaway is that HK operationalizes Lean at the enterprise level rather than replacing Lean as a philosophy. While Lean is widely understood as a way of thinking about how work and value are created, the literature suggests that organizations often struggle to translate that philosophy into consistent priorities, routines, and learning mechanisms across projects. In this sense, HK is less about “better goals” and more about building a disciplined management system for selection, translation, follow-up, and renewal that enables a Lean philosophy to be sustained in practice.

Catchball: the Translation Mechanism Between Strategy and Operations

One of the most distinctive parts of HK is catchball: an iterative dialogue that negotiates objectives, means, constraints, and resources across levels and functions. Rather than simply cascading targets, catchball surfaces feasibility issues early and builds ownership through mutual adjustment. In policy deployment terms, it shifts the process from “telling” to “agreeing,” while still retaining strategic direction from leadership (Tennant & Roberts, 2001).

Construction enterprises benefit from this kind of mechanism because performance is inherently cross-functional and project outcomes depend on coordination across departments that focus on estimating, operations, engineering, procurement, legal aspects, safety, and quality. Without a structured translation process, Lean priorities often become either vague slogans (“be more Lean”) or isolated tool rollouts that do not survive real project pressures.

Visual Logic and Artifacts (e.g., X-matrix) as Supporting Infrastructure

HK implementations may use a policy deployment matrix (often the X-matrix) or similar visual tools to connect long-term objectives, annual priorities, initiatives, owners, and measures. Literature and cases treat these artifacts as helpful because they make the logic explicit and auditable, but not sufficient on their own. In practice, the artifact becomes meaningful only when it is tied to an operating beat (regular review, escalation, and adjustment) and shared accountability for results (Tennant & Roberts, 2001).

For LC, this distinction matters because firms can easily adopt the visible parts of HK (a matrix, a template) without adopting the management behaviors that give those artifacts life.

Review Cycles and “Executive Diagnosis” as the Learning Engine

HK reviews are more than reporting status upward. Monthly reviews are intended to surface obstacles, identify gaps between targets and reality, and trigger countermeasures. Annual review adds a higher-level reflection: whether the organization selected the right priorities, whether deployment worked as intended, and whether leadership practiced the system consistently (Jolayemi, 2008).

Two details from the broader HK literature help clarify why these matters for project-based firms. First, HK is commonly framed as an explicit goal-deployment process: top management goals are translated into actions and measures down through the hierarchy, typically with a 3 to 5-year horizon broken into realizable parts (Pavličková et al., 2022). This makes “review” a governance requirement, not an optional management preference. Second, several authors describe an executive diagnosis / audit function: senior leaders periodically diagnose whether the organization is working on the right priorities and whether the management routines themselves are being practiced as intended (Jolayemi, 2008; Tennant & Roberts, 2001). That second part—checking the health of the management system—is precisely what is missing when LC is treated as a collection of tools rather than as a sustained operating system.

This is a sharp contrast to the common “lessons learned” pattern in construction, where learning happens late (after project closeout) and the feedback rarely informs the next project in time. HK’s review logic is designed to accelerate learning by making it concurrent with execution.

WHAT CONSTRUCTION-ORIENTED CASES REVEAL ABOUT HK IN PRACTICE

The construction cases show how HK operates when leaders use it as a practical management system. One of the clearest construction-oriented examples comes from Turner Construction’s New York Business Unit. Turner is a large U.S. construction firm, and the published case is useful because it describes HK not as an abstract idea but as part of a deliberately built management system that combines strategy deployment with A3 problem-solving and recurring review routines (Panchak, 2022). For this paper, the value of the case lies less in its performance claims than in the visibility it gives to the practical mechanics of enterprise alignment, leadership cadence, and problem-solving linkage in a construction setting.

Identity Shift: from “Doing Lean” to “Being a Lean Enterprise”

A striking element in the Turner Construction case is the explicit language of identity. As articulated by Turner Construction leadership, the intended shift was explicit. Doug Cooper, company’s vice president for Lean, Safety, and Active Caring, New York described this aspiration as follows: “We didn’t want to be just a construction company that was trying to be lean; we wanted to be a lean enterprise that also did construction” (Cooper, as cited in Panchak, 2022). That statement matters because it reframes Lean away from a project-level improvement program and toward an enterprise-wide way of operating.

Viewed through an HK lens, this identity shift is precisely what policy deployment is meant to support: translating a strategic aspiration (who we are becoming) into a small set of priorities, routines, and habits that are repeatedly practiced, reviewed, and strengthened.

Cadence and Multi-level Alignment: How the System Stays “on”

The Turner case also illustrates the role of cadence. A recurring management rhythm, monthly meetings where each level reviews and reports progress is described as the mechanism that maintains alignment and focus on top objectives (Panchak, 2022). This is not a minor operational detail; it is the core of sustainability. Without cadence, HK collapses into annual planning.

Turner’s description also emphasizes bidirectional information flow: strategy is not only pushed downward; information from the gemba informs priorities and plans (Panchak, 2022). This is consistent with the governance intent of HK and directly relevant to construction, where project site realities can quickly invalidate centrally designed initiatives.

Combining HK with A3: Anchoring Strategy in Real Problems

A further practical insight from Turner is the pairing of HK with A3 thinking. The case describes how dozens of frontline A3 efforts, taken together, contribute to strategic priorities, and how the management system reinforces problem-solving capability while keeping attention on the “top of the funnel” objectives (Panchak, 2022). In this model, HK is a Lean tool that provides the structure that helps organizations select the right problems, connect problem-solving to priorities, and keep learning visible.

A Project-Cased View: Culture, Visual Management, and “Few Vitals” on a Mega Project

A case from offshore oil and gas construction (Leth et al., 2019) provides a project-based perspective on HK in practice. In this case, HK functions not only as a lean project management method but also as a mechanism for deploying culture. Rather than emphasizing performance outcomes, the case highlights three underlying mechanisms: a deliberate focus on a small set of “vital few” priorities, integration of deviation handling into regular planning and review cycles to enable fast feedback, and the central role of culture and capability in making HK effective.

Although the case is limited to a single mega project rather than an enterprise-wide transformation, it is useful because it makes visible the behavioral assumptions embedded in HK—disciplined prioritization, transparency, rapid response to deviation, and intentional culture shaping—which are directly relevant to sustaining Lean beyond individual projects.

A Construction-organization View: Policy Deployment Committees, Quality, Cost, and Delivery (QCD) Focus, and Structured Reviews

Pheng et al. (2009) provide one of the few construction-organization-focused accounts that links HK to an existing management system (quality management/TQM). Their argument is not that construction needs “more tools,” but that enterprise improvement efforts tend to fail when management procedures for alignment, review, and people involvement are weak, and HK is positioned to provide that control and deployment mechanism (Pheng et al., 2009).

Two practice details align strongly with the “HK as governance” framing:

- They depict an HK management model organized around layered committees (e.g., executive steering, policy deployment, cross-functional, departmental, and project operations), with explicit catchball flows and an emphasis on QCD priorities (Pheng et al., 2009).

- They also describe regular review routines, monthly review meetings and site visits with top management, plus structured review tables that capture performance, deviations, and corrective actions (Pheng et al., 2009).

This case is helpful for LC sustainability because it shows HK not as a standalone Lean initiative, but to institutionalize review and cross-functional alignment inside an existing construction management system.

IMPLICATIONS FOR SUSTAINING LC AT THE ENTERPRISE LEVEL

Putting the literature and cases together suggests several practical mechanisms through which HK can reduce common failure modes of enterprise LC:

- Focus and prioritization. HK's "vital few" logic (operationalized through long-/mid-term objectives and annual planning) counters initiative overload and improves the chance that Lean investments are resourced and followed through (Jolayemi, 2008; Leth et al., 2019).
- Translation into feasible commitments. Catchball provides a structured way to turn enterprise Lean intent into operational commitments that reflect capacity, constraints, and project realities (Tennant & Roberts, 2001; Pheng et al., 2009).
- Improvement as normal management work. By embedding PDCA into governance and cadence, HK reduces the risk that Lean becomes a side program that competes with "real work" (Tennant & Roberts, 2001).
- Learning while projects are still alive. Monthly and annual review routines create learning loops during execution, not only after closeout (Jolayemi, 2008; Panchak, 2022; Pheng et al., 2009).
- Identity and culture reinforcement. The Turner case highlights that the deepest change is often identity—becoming a Lean enterprise—supported by disciplined routines that make that aspiration concrete (Panchak, 2022). The IGLC mega-project case adds that culture and capability are not "soft extras," but prerequisites for HK routines to work under real pressure (Leth et al., 2019).
- A reusable deployment architecture. Construction-oriented depictions make the deployment machinery explicit, committee structures, cross-functional integration, and formal review tables, helping explain why Lean improvements drift when governance is missing (Pheng et al., 2009; Pavlíčková et al., 2022).

Overall, literature positions HK as a managerial infrastructure for sustaining improvement across projects, functions, and time. That framing sets up the discussion section, where HK is used as an analytical lens to interpret persistent "sustainability" problems in enterprise LC without claiming a new framework or empirical validation.

DISCUSSION AND SYNTHESIS

This section brings the paper to a close by stepping back from the detailed arguments presented in earlier sections and reflecting on what they collectively suggest about the persistence of LC sustainability challenges at the enterprise level. Rather than introducing new concepts or prescriptions, the discussion here integrates the earlier material to clarify how these challenges can be understood, and why they continue to recur across construction organizations.

RECONNECTING THE ARGUMENT

Lean Construction can be learned, taught, and applied. We have plenty of examples of projects where Lean practices improved coordination, reduced rework, or made production more

reliable. And yet many companies still struggle to make those ways of working stick once the spotlight moves on.

Reading HK alongside this gap is useful because it shifts the question. Instead of asking, “Which Lean tools should we roll out next?”, it pushes us to ask, “What holds improvement in place when projects and priorities keep changing?”

SYNTHESIS: WHAT HK ADDS TO LC SUSTAINABILITY

HK contributes less by introducing new Lean practices and more by making the governance conditions for sustaining those practices explicit. In project-based firms, improvement tends to reset when priorities multiply, translation from enterprise intent to project commitments is weak, review cadence is inconsistent, and learning remains trapped inside individual projects.

HK addresses these recurring failure modes through a repeatable management cycle: selecting a small set of vital priorities, negotiating feasible commitments through catchball, and maintaining a review rhythm that treats learning as concurrent with execution rather than as a post-project activity.

PROPOSITIONS FOR FUTURE EMPIRICAL WORK

Based on this synthesis, we articulated four testable propositions:

P1. Enterprise-level LC persistence increases when improvement work is limited to a small set of “vital few” priorities revisited on a fixed cadence.

P2. Enterprise-level LC persistence increases when project teams participate in translating priorities into feasible commitments (catchball), rather than receiving cascaded targets.

P3. Enterprise-level LC persistence increases when review routines diagnose both performance outcomes and the health of the management system itself.

P4. Cross-project learning increases when review cycles trigger updates to routines and standards during execution, not only after project closeout.

These propositions do not claim that HK is sufficient on its own; rather, they specify observable mechanisms that can be examined across organizations and portfolios in future research.

BOUNDARIES, LIMITATIONS, AND CLOSING REFLECTIONS

The observations and arguments presented in this paper have limits. Most evidence regarding the implementation of Lean in construction is still project-based, so it is hard to see what builds persistence over years. The sources also lean heavily on Western accounts of HK, which often emphasize visible artifacts and may miss cultural or relational aspects. Finally, this paper is conceptual: it does not test causal claims or add new empirical validation.

Within these boundaries, the contribution of this paper lies in reframing the Lean sustainability challenge. The analysis suggests that Lean sustainability is most usefully understood as a question of how improvement is governed at the enterprise level. By offering this reframing, the paper aims to support future research that examines LC not only as a project delivery approach, but as an organizational capability that must be deliberately maintained over time.

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