

Sutter Health: Developing a Contracting Model to Support Lean Project Delivery

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Who is Sutter Health

Sutter Health is a not-for-profit, community based healthcare and hospital system headquartered in Sacramento, California. The Sutter system serves more than one hundred communities in Northern California. From its historical roots of being a small community-based hospital in Sacramento, it has grown to be one of the largest healthcare providers in Northern California, caring for more patients than any other network. Its affiliate-based system includes 27 acute care hospitals, over 3,400 physicians, 41,000 employees and recorded over 2.6 million outpatient visits in 2003.

Building Program

In 1994, after the Northridge earthquake caused significant damage to healthcare facilities in Southern California, the California Legislature enacted SB 1953 - the Hospital Facilities Seismic Safety Act. In summary, as currently applied, SB 1953 requires significant structural seismic upgrades to be accomplished by January 1, 2013. In reality, because of the nature of the required improvements, in most cases it is more cost effective to replace existing facilities, rather than seismically retrofit.

Sutter Health's building program, initially undertaken in response to SB 1953, was expanded to include a more comprehensive assessment of long-term facility requirements based upon community needs, community growth and healthcare trends. In addition to the mandate of SB 1953, Sutter Health made the decision to expand access to healthcare in the communities it serves by building ambulatory care centers, cancer treatment facilities, and medical office buildings. Each region developed proposals to create facilities that would meet the community's healthcare needs and improve the patient experience.

As currently contemplated, the program includes \$5.5 billion of design and construction to be completed by 2012. This includes acute care facilities permitted by California's Office of Statewide Health Planning and Development (OSHPD)(where permitting can take upwards of 20 months), non-acute outpatient facilities (surgery centers), medical office buildings, parking structures, as well as significant remodels of newer structures that do not require replacement.

From senior management's perspective, the overall program goal is to successfully traverse the risks associated with a program of this magnitude, reliably deliver these projects to their communities, and maintain Sutter Health's superb financial ratings. In support of these goals, an executive management team composed of Robert Mitsch (Vice President, Real Estate), David Chambers (Director, Planning, Architecture and Design), and David Pixley (Director, Project Management and Development) was tasked with expanding the Facility Planning and Development Department (FPD) to support the program and put systems in place to manage the task.

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In developing the necessary systems, FPD focused on increasing the reliability that projects – including some that would take upwards of five years to design, permit and construct – would be delivered:

- on time or early
- within budget or less
- without claims
- safely (without creating patients), and
- without burn-out of FPD staff²

In attacking these challenges, FPD developed internal "Standards of Practice," standardizing practices that worked well in the past, but also sought to innovate and adopt new practices to support its goals. As a result, Sutter Health has moved to implementing Lean Project Delivery.

Move to Lean Project Delivery

The Lean Construction Institute ("LCI") articulated the theory that projects can be characterized as "stodgy" (simple, certain and slow) or "dynamic" (complex, uncertain, and time sensitive). Within these classifications, LCI characterized various systems that operate within projects: Physics of work (how work gets done), Systems and Organizations (how the relationship among principal companies is structured), and Contracts (how the commercial relationship is structured). Historically, LCI and implementers of the Last Planner System™ have focused on the physics of the work and attacked the unreliability of project work flow in an effort to reduce project waste. The question has always remained, to what extent do the other systems operate to promote or constrain lean project delivery?

With the assistance of Lean Project Consulting, Inc., Sutter Health has developed an approach which strives to coherently address each level of the project delivery system. This approach has become known in the community as the Five Big Ideas³. The Five Big Ideas are summarized in the following graphic:

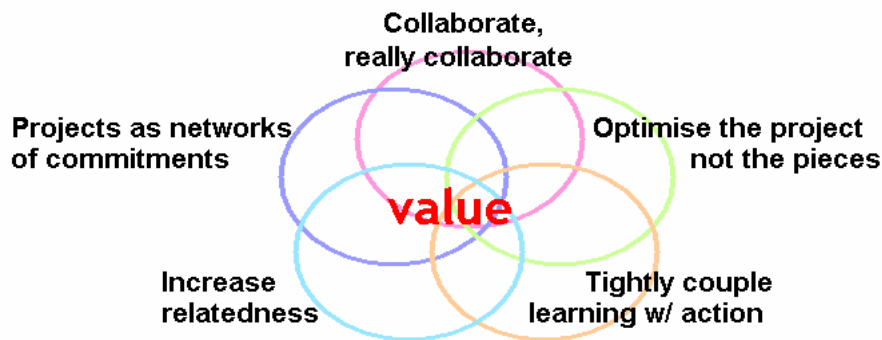


Figure 1: The Five Big Ideas

The Five Big Ideas form the framework for approaching all aspects of Sutter Health's Lean Project Delivery. The description that follows is taken from the manifesto that

² The combined demands of constructing healthcare, education and other public and private facilities has created a demand for design and construction services that is unprecedented in Northern California. One challenge facing Sutter Health and other owners will be assuring that its work is attractive enough for quality contractors and subcontractors in a time of heightened demand. This is coupled with a growing scarcity of qualified construction trades people to actually perform the field construction. The problem of a shrinking workforce is not limited to California but is prevalent throughout the western United States.

³ Adopted by Sutter Health as the foundation of its lean initiative, the *Five Big Ideas* were developed and brought to the Sutter Health community by Hal Macomber and Greg Howell.

has been signed by members of FPD and Sutter Health's design and construction community:

1. ***Collaborate; really collaborate, throughout design, planning, and execution.***
Constructable, maintainable, and affordable design requires the participation of the range of project performers and constituencies. Since abandoning the master-builder concept, and separating design from construction, we have been patching a poorly conceived design practice. Value engineering, design assist, and constructability reviews mask an underlying assumption – that design can be successful when separated from engineering and construction. Design is an iterative conversation; the choice of ends affects means, and available means affects ends. Collaborative design and planning maximizes positive iterations and reduces negative iterations.
2. ***Increase relatedness among all project participants.***
People come together on AEC projects as strangers. They too often leave as enemies. Healthcare facilities projects are complex and long-lived, requiring ongoing learning, innovation, and collaboration to be successful. The chief impediment to transforming the design and delivery of capital projects is an insufficient relatedness of project participants. Participants need to develop relationships founded on trust if they are to share their mistakes as learning opportunities for their project, and all the other projects. This will not just happen. However, we are learning that relationships can be developed intentionally.
3. ***Projects are networks of commitments.***
Projects are not processes. They are not value streams. The work of management in project environments is the ongoing articulation and activation of unique networks of commitment. The work of leaders is bringing coherence to the network of commitments in the face of the uncertain future and co-creating the future with project participants. This contrasts with the commonsense understanding that limits planning as predicting, managing as controlling, and leadership as setting direction.
4. ***Optimize the project not the pieces.***
Project work is messy. Projects get messier and spin out of control when contracts and project practices push every activity manager to press for speed and lowest cost. Pushing for high productivity at the task level may maximize local performance but it reduces the predictable release of work downstream, increases project durations, complicates coordination, and reduces trust. In design, we incur rework and delays. In the field, this means greater danger. We have a significant opportunity and responsibility to reduce workers' exposure to hazards on construction projects. Doing so can bring about greater than 50% improvements in the safety on the work site. As the leading community-based healthcare system in northern California we are committed to do all that is possible so that the people who build these projects are able to go home each night the way they came to work. The way we understand work and manage planning can increase that messiness or reduce it.
5. ***Tightly couple action with learning.***
Continuous improvement of costs, schedule, and overall project value is possible when project performers learn in action. Work can be performed in a way that the performer gets immediate feedback on how well it matched the intended conditions of satisfaction. Doing work as single-piece flow avoids producing batches that in some way don't meet customer expectations. The current separation of planning, execution, and control contributes to poor project performance and to declining expectations of what is possible.

While the focus of this paper is on the commercial strategies employed by Sutter Health in moving towards a "relational contracting model," that discussion cannot proceed without mentioning the other efforts undertaken in support of the initiative.

Sutter Health began by hosting the Sutter Lean Summit, a three-day event held during March 2004, in Concord, California. The first two days, attended by over 225 members of FPD and the design and construction community, focused on an introduction to lean principles structured around the Five Big Ideas. The third day convened company leaders to discuss the leadership challenges that would emerge during this effort.

The Summit was followed by:

- on-going training for FPD staff, including both formal workshops, weekly conference calls, and monthly initiatives
- implementation of the Last Planner System™ (LPS) on five projects of differing size and complexity. Implementation included Sutter Health sponsored two-day kick-off sessions which trained the project team in the tools of LPS and on-going project coaching to help the team put the concepts in action.
- a Sutter Health sponsored web-based portal, styled as a "wiki" – a community-based body of knowledge – for sharing information, tools and experiences.
- members of the design and construction community meeting with FPD staff in *Vendor Forums* for facilitated conversations on topics of interest to the community.
- Sutter Health formed a *Lean Executive Leadership Group*, a think-tank of leading industry executives participating in Sutter Health's program, to meet periodically and share information, successes, and challenges.

Through these efforts, Sutter Health has sought to develop a collective awareness and understanding of the concepts inherent in Lean Project Delivery, while also building a sense of community. This has served to provide new foundations for project-based collaboration and has increased the relatedness of the parties.

Applying Commercial Strategies

Team Selection

Sutter Health continues to look to the Five Big Ideas to inform its commercial strategy, seeking alignment between the goals of Lean Project Delivery and the commercial terms of its contracts. Following on its efforts to build a sense of community through the Sutter Summit and Vendor Forums, Sutter Health looks to build project teams from the Sutter Health "design and construction community." FPD is focused on forging an integrated project team, where there are no masters or slaves, but equal participants.

The selection process for Architects and Construction Managers/General Contractors (CM/GC) is a quality-based evaluation of responses to requests for proposal and follow-up interviews with short-listed firms. CM/GC selection proceeds immediately after Architect selection. Major subcontractors are also selected early, typically during the schematic design phase, to gain maximum participation and innovation when their efforts are likely to have the greatest financial impact.⁴

Creating a Collaborative Design Environment

Sutter Health believes that collaboration occurs best when the participants view themselves as equal participants in the process and when the initial collaboration centers on exploring and defining the problem, rather than commenting on someone's proposed solution. Sutter Health expects its design and construction partners to come to the collaborative meetings from a position of inquiry, rather than advocacy; hoping to learn something from someone else in the collaborative process that will spur a new understanding of the problem and a broadened range of possible solutions.

⁴ Sanvido, Victor E. and Konchar, Mark D. 1999. Selecting Project Delivery Systems: Comparing Design-Build, Design-Bid-Build and Construction Management at Risk, at p. 51.

In support of these efforts, Sutter Health anticipates that the CM/GC and trades will have a seat at the table throughout design. It expects that major portions of the project will garner the participation of design-collaboration or design-build subcontractors (Mechanical, Electrical, Plumbing, Fire, Curtain wall, skin). Again, the design process is structured to encourage the sharing of intermediate design documents, rather than just handing off large batches of drawings at extended intervals.

By involving the constructors early, Sutter Health requests that constructability and buildability be addressed throughout design, in essence being treated as a design criteria. Similarly, the team is expected to engage in design reviews with an eye toward value analysis and value engineering -- constantly exploring whether other construction options will better serve Sutter Health's value proposition.

While always having required over-the-shoulder pricing to inform design decisions, Sutter Health has recently moved to experimenting with Target Value Design.⁵ In support of the primacy of designing and constructing each project within budget, the design team accepts significant design-to-budget obligations, which cause the Architect and CM/GC to collectively focus on the quality of the documents available for pricing and the quality of the cost modeling that is developed by the CM/GC and its trade contractors.

Sutter Health also expects that the design and construction team will collectively create the *Conditions of Satisfaction*. The parties are expected to develop a joint site/existing condition investigation plan, proposing the level of investigation that the team recommends as prudent. In addition, the team jointly develops the scope for third-party consultants and collectively assess the resulting work product to evaluate it for completeness and sufficiency to inform design and construction.

Finally, in order to assure that a commercial strategy supporting Lean Project Delivery is carried through to all levels of the project team, Sutter Health reviews the subcontract terms to confirm alignment with Sutter Health's commercial and Lean Project Delivery policies. Similarly, because traditional project management bonus terms for CM/GC firms can motivate by local, rather than system-wide, optimization, Sutter Health's contract provides that for bonuses to be considered a Cost of the Work, they must be reviewed and approved by FPD's project manager. By way of example, the CM/GC might bonus based upon cash flow, which could cause work to be installed without regard to the LPS.

Joint Management of Financial Risk

Sutter Health's contracts attempt to create a system of shared risk, with the goal of reducing overall project risk, rather than just shifting it. The commercial terms also call for joint management of the contingency funds available to off-set those risks that are not eliminated.

As described above, Sutter Health pays for the early involvement of the project team in an effort to eliminate ambiguity in the documents and maximize the collective understanding of the project's conditions of satisfaction. Sutter Health also strives to raise the quality of design by insisting that design fees be supported by a resource loaded work plan. CM/GCs are uniformly compensated on a cost-plus fee, guaranteed maximum price basis, with some subcontractors being cost-plus GMP also. GMP proposals are generally submitted on drawings submitted for permit, reducing the need for added contingency.

⁵ Target Value Design is similar to Target Costing, but may be broadened to encompass additional design criteria beyond cost, including time, work structuring, buildability, and similar issues. For a discussion of Target Costing see Ballard, Glenn and Reiser, Paul (2004). The St. Olaf College Fieldhouse Project: A case Study in Designing to Target Cost. Proceedings of the 12th Annual IGLC Conference.

Sutter Health establishes separate contingency amounts for design development or estimating, permitting changes, construction, escalation, and overall project uncertainty. These contingencies are jointly managed throughout design and construction.

As a result of their early involvement, the CM/GC and trade contractors agree to a limited basis for change orders – material scope change, changed site conditions, or unforeseen regulatory or code interpretations. The traditional bases for many change orders -- lack of document or discipline coordination - are eliminated as a result of the coordination efforts during the design phase. Because Sutter Health, despite its lean ideals, does not expect perfection, the Construction Phase Contingency is made available to address work that was inadvertently omitted from the GMP estimate or results from coordination mistakes.

Sutter Health has also moved to eliminate the traditional “negligence” standard as the measure of the designers’ financial responsibility. Instead, Sutter Health negotiates a deductible as a percentage of construction costs for “errors & omissions,” even those resulting from negligence, that Sutter will fund out of the design contingency (E&O Contingency). Above that deductible, the parties negotiate a percentage for which the designer will be responsible without proof of negligence (“non-negligent cap”). Above these combined percentages, Sutter must show negligence in order to recover. This system allows that parties to establish an agreed level of quality and share the risk without being forced into an adversarial system that creates significant waste. With the level of quality established, the Architect is able to prepare its resource loaded work plan accordingly.

Throughout construction, the parties meet regularly to assess reasons for “extra work” and apportion financial responsibility. The team collectively assesses which of a number of predefined categories a supposed extra falls within. This collective assessment allows a full discussion of both the reason for the extra (e.g., design error, differing site condition or owner scope addition) and financial responsibility in light of the parties' performance obligations. For example, supposed extra work may be a by-product of both a design error and the CM/GC's failure to adequately perform its preconstruction services. In that case, an apportionment would be made between the Construction Phase Contingency and the E&O Contingency. If the parties are unable to agree, the issue becomes subject to the dispute resolution process discussed below.

Joint Management of Disputes

Sutter Health seeks to maximize the opportunities for party-controlled dispute resolution. In addition to the monthly change order review meetings, the contracts establish an escalating series of dispute resolution meetings. If a dispute is not resolved through informal negotiations, any party may request that it be elevated to the Project Manager level. Within 14 days a special meeting is convened at the project site, to be attended by representatives of Owner, Architect and Contractor.

If the project representatives are unable to resolve the disagreement, it is then elevated to the Senior Executive level. Here, senior executives from Owner, Architect and Contractor are to meet face-to-face within 14 days of an impasse being reached at the project level. The senior executive meeting is expressly for the purpose of exchanging and reviewing all pertinent documents and information related to the dispute, freely and candidly discussing each party's position, and "reaching agreement upon a reasonable compromise resolution of the Claim."

If the dispute is not resolved within seven days of the Senior Executive meeting, the Owner has the right to appoint an independent expert to review the dispute and issue a recommendation. The Independent Expert's recommendation is non-binding, but should

help inform the parties' negotiations by providing an informed, objective view of the facts and circumstances surrounding the dispute.⁶

If these earlier efforts have been unsuccessful, the agreements call for mandatory mediation, with the cost to be shared equally by the parties. The mediation must occur within 30 days, unless all parties agree otherwise. Failing resolution, the parties may resort to the litigation process, with the prevailing party recovering attorneys' fees and costs.

These dispute resolution procedures are designed to encourage the parties to freely share information and negotiate a resolution at the lowest level possible. It is also sensitive to preserving the on-going relationship between project personnel and contracting companies, since most project participants are performing on multiple projects within the system. The goal is to resolve disputes, while preserving the relationships.

Developing an Incentive Program

Historically, Sutter Health has not used a "shared savings" mechanism, instead having all project cost savings revert to the owner. A number of Sutter Health's vendors have requested that it reconsider this position. In assessing whether to implement an incentive program, Sutter Health has concluded that any such program must be fashioned to support the Five Big Ideas and balance between the different behaviors and results called for by those concepts.

From Sutter Health's perspective, the purpose of the incentive program is to encourage superior performance based upon Sutter Health's goals for Lean Project Delivery and to reward the design and construction team for successfully achieving superior performance and successfully exceeding the project expectations and benchmarks. The program must provide a basis for continually monitoring and reviewing the project team's performance, providing the team with periodic performance information to allow corrections or modifications *during* project performance to improve the quality of the services provided. Also, the team must participate in the pool so that it supports the creation of one, unified team focused on overall project performance.

Too often, projects are completed without capturing the learning; "lessons learned" are discussed at project completion to be applied on the "next" project. One of the Five Big Ideas is to "Tightly couple learning with action." If periodic project reviews are not performed, then the opportunity for improvement over the life of a multi-year project is lost. Moreover, the existence of financial incentives provides added motivation for individuals and organizations to stretch beyond their current levels of performance or ways of doing business and may help overcome the inertia and resignation that often exists on projects.

As preliminarily conceived, the incentive program would be funded with project savings as evidenced by both contingency preservation and reduction in the project's Costs of the Work as compared to the amounts contained within the GMP. These savings would create the "incentive pool" which would then be paid based upon evaluation of performance against other performance criteria. For example, Sutter Health envisions that the team would establish performance goals in at least the following areas: cost, quality, safety, schedule, planning system reliability, innovative design or construction processes. The team's goals would be expressed as a range of outcomes from "business-as-usual," to "stretch goals," to "ideal performance." Performance would be monitored

⁶ Sutter Health has successfully used the Independent Expert procedure to produce a negotiated solution to a significant design-related claim. The assessment of the Independent Expert helped inform the Owner's position, resulting in a negotiated settlement and payment in excess of \$100,000 to settle a claim.

and rated, with the overall portion of the incentive pool to be paid to the team based upon performance on the non-cost performance criteria.

Challenge to Sutter Health's Vendors

Sutter Health has challenged its vendors to learn the skills needed for Lean Project Delivery. It has also requested that its major vendors develop and share with Sutter Health their internal implementation strategies, which include strategies to measure progress along the way. Vendors have been asked to demonstrate a commitment to continuous improvement and exhibit a willingness to share their learning in the Sutter Health project community. So far, a number of vendors have met these challenges and have begun to learn alongside the Sutter Health project management staff.