HEALTHCARE DESIGN

VENTURA CONSULTING GROUP

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THE MANY ADVANTAGES OF PARTNERING

How builders bought off, and benefited from, Ventura Consulting Group's Partnering Program at St. Joseph Hospital Patient Care Center

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A healthcare icon in Orange County, California, St. Joseph Hospital celebrated its 75th anniversary in March 2004 during the groundbreaking of the hospital's new Patient Care Center. This momentous occasion kicked-off the master facility plan for the medical center and marked a major milestone in the organization's history.

The new Patient Care Center project entailed construction of a four-level, 248,000-square-foot hospital tower featuring an expansive main entrance and lobby, 150 critical care and medical surgical inpatient beds, 14 operating room suites, a central sterile and supply department, and a freestanding central plant.

The project team was charged with building this state-of-the-art facility, as well as setting a positive example for future projects in the campus and St. Joseph Health System facility master plans. Furthermore, the Patient Care Center project was expected to uphold St. Joseph Hospital's seven-decade-long reputation for patient care and community service. Meeting the challenges of minimizing impact to the nearby facilities while maintaining all existing services was no small feat because of the nature of the project, as well as its tight site surrounded by the existing St. Joseph Hospital facilities, Children's Hospital of Orange County (CHOC), businesses, and residences.

The St. Joseph Hospital Patient Care Center offered numerous challenges, all met through a fully integrated partnering approach. Through this strong commitment to partnering, the new Center was built on time, within the original project budget, and without any claims. The team's success is further highlighted by a recordable safety incident rate of *zero*.

Project background

The project team for the Patient Care Center had to coordinate with two hospitals that surrounded the site, and connect them to the new facility. To complicate preconstruction further, just four months before construction was to begin, the

general contractor stepped down and McCarthy Building Companies was hired.

To start building trust and collaboration among the group, the hospital voluntarily initiated a professionally facilitated partnering program. The project team agreed that the time investment in a partnering program, along with incremental cost of one that was professionally facilitated, were time and money well spent considering the potential benefits. To kick off the program, the team held three week-long partnering sessions that brought everyone up to speed quickly and seamlessly. These sessions successfully turned the somewhat disparate groups into a unified team firmly on-track for achieving success.

During the first partnering workshops, the team discussed what was working and what was not. The team then came up with nine major areas of focus, which were deemed the project's “Big Hairy Audacious Goals” (BHAGs)—a term coined by authors Jerry Porras and James Collins in their book *Built to Last: Successful Habits of Visionary Companies*.

Photograph courtesy NBBJ © Tim Griffith

The project's BHAGs were formalized on a Partnership Charter and included:

- Substantial completion including all changes to date no later than the approved Prime Contract Change Order date.
- Project completion at CV + maximum 16%.
- Project wins an ASHE Award for teamwork (still in process).

- Recordable incident rate less than one and zero lost-time accidents.
- All issues resolved at the project level.
- Punch list complete no later than 30 days after substantial completion and close out.
- Office of Statewide Health Planning and Development (OSHPD) issues resolved within two weeks. OSHPD design write-ups resolved within 30 days.
- Patients, staff, and neighbors involved, informed, and minimally impacted by noise and parking. Zero early incidents because of mistakes.
- Transition plan executed on time and with zero last-minute user changes.

During partnering meetings, the team initially identified the project Strengths, Weaknesses, Opportunities, and Threats (SWOT). On 1-to-10 scale (where 1 = poor and 10 = excellent), the items were individually scored and then team-ranked/aggregated. If the identified item scored between 1 and 3, it was flagged as an issue that could derail the attempt to achieve the BHAG and a subgroup was formed to resolve the issue. Subgroup meeting dates were immediately arranged so the issue could be resolved as soon as possible after the partnering session. The issue would then be revisited at the next partnering session and the team would score it again, with subgroup meetings continuing until the issue was resolved to the team's satisfaction.

One of the project's partnering goals was to resolve all disputes at the team management level with a representative from St. Joseph Hospital Design and Construction, NBBJ, and McCarthy. In the rare instances an outstanding cost issue had the potential to go to claim, the management team held a special meeting, typically including the applicable subcontractor(s), and worked through the issue until a mutually satisfactory agreement was reached. This proved extremely successful resulting in zero claims on the project.

Take, for example, Mechanical/Electrical/Plumbing systems coordination, a complex work activity that doubled the time allotted and added additional materials to the project. The first analysis of additional manpower and materials added close to $3 million in extra value to the project. The team agreed to break each trade's systems down individually and analyze the additional cost with proper backup from the subcontractors, and determined that if each member provided all the proper information and analysis, the cost resolution would not be delayed. Through a series of meetings, fair and appropriate valuation was assessed, and all cost issues were resolved and paid in a timely manner, eliminating any risk of project claims at the project close out.

Involving everyone in partnering, from the crafts workers to the project executives, end-users, and even the jobsite neighbors and local community, ensured that the goals were met and that all stakeholders would be pleased with the process and end result.

At project completion, Jim Eisenhart, the team building facilitator from Ventura Consulting Group (see "Healthcare Project Partnering: The Five Key Elements," *HEALTHCARE DESIGN*, February 2008, p.22) stated, "What made this project team particularly unique was not only did their teamwork scores improve dramatically over the course of the project, but they achieved all of their initial partnership goals. I challenged them in the initial workshop to set measurable goals that called for nothing less than world-class performance and world-class teamwork. Most of our partnerships usually hit 70 to 90% of their goals, but this team nailed every one."

Partnering charter

The partnership team had multiple meetings in 2006: January 25, March 29, June 14, and December 4. A Partnering Charter was prepared tracing and evaluating the project goals every couple of months through an electronic survey system created by Ventura Consulting.

One of the project goals developed during the initial Partnering Session was to achieve a recordable incident rate of less than one and a lost-time accident rate of zero. As it turned out, with more than 175 workers during the project's peak and a total of 700,408 man-hours, the project boasted a *zero* recordable safety incident rate and a *zero* lost-time rate.

The subcontractors were challenged by McCarthy to go above and beyond their existing safety policies, and many implemented additional safety regulations for their crafts workers. All major meetings and daily meetings started by addressing safety, so safe work practices and accident prevention was constantly on the minds of everyone on the project. Some of the specific techniques used to ensure a safe work environment on the Patient Care Center Project were:

- Safety meetings, safety lunches, and monthly merchandise awards were instituted to encourage employee participation in safe work methods, correct on-site conditions, and celebrate major achievements and milestones.
- All new hires were identified by wearing red hard hats for the first three months so seasoned employees (in white hard hats) could mentor them while working on-site. In addition to new hires, any employee identified to be in an area where the danger of being struck by equipment or overhead

loads was required to wear high-visibility clothing to aid in constant awareness.
- A comprehensive job site safety inspection program was implemented, with scheduled and surprise inspections conducted regularly to identify potentially unsafe conditions and to provide immediate correction.

Partnering and budget control

The projected budget for the project was $203.7 million, and the budget forecast at completion is currently under $195 million. The partnering process helped maintain the project budget goals by identifying issues early in the partnering meetings and resolving all issues at the project level.

Additionally, the team's decision to have an expert from every construction specialty on-site at all times was possibly one of the most significant cost- and time-saving approaches of the entire project. The effects of this decision were countless, far reaching and, in the end, were greatly responsible for bringing the project in under budget.

Also, through partnering, a solid foundation of trust among the project team and a proactive approach by the facility, the team achieved an early buyout of core construction materials, such as steel and concrete. This was an important cost-saving mechanism, as it enabled the team to secure reasonable prices early on and avoid any escalating costs of building materials, which at the time were rising rapidly.

Partnering and maintaining schedule

The first partnering goal was to complete the project including all changes no later than the approved Prime Contract Change Order date. The project took 38 months to build and was substantially completed on June 26, 2007, meeting its goal for on-time completion after additional scope had been added.

Meeting this goal was no small task, especially since the project was delayed 35 days because of saturated site conditions resulting from several days of rain. The rains occurred near the beginning of construction and created a massive pool of water in the newly excavated hole. If this difficulty hadn't been resolved, the rains would have cost the team a half-million dollars and a 45-day scheduling setback. However, the team mitigated the damage and immediately recovered 21 days by working through selective overtime and conducting a schedule impact analysis that identified the delayed construction activities that could push the total

schedule past the contractual end date, thus allowing McCarthy to focus the teams' efforts on those specific activities. The rest of the time and money was made up through teamwork and commitment to the partnering goals during the course of the project.

Another time-saving solution was localizing the Construction Administration team on-site. This laid the early groundwork for success and cut the review process for architectural and engineering field directives and RFI responses from the typical three weeks to a short five days. In addition, communication lines were always open, which kept the project running smoothly, even when changes arose.

For example, when a foundation concern surfaced on the north side of the building, the geotechnical engineers and structural engineers were immediately called and able to solve the problem within a couple of days. Without the engineers on-site, that section of the project could have been delayed for weeks, depending on how long it took the engineers to travel to the site, assess the problem, and develop and communicate a solution. In addition, the on-site team was available to meet with the State of California OSHPD field staff on a regular basis to address field conditions quickly.

Additional goals achieved

Additional partnering goals contributed to completing the project on schedule. These included partnering commitments to resolve all issues at the project level, complete the punch list no later than 30 days after subcontractor completion and close out, resolve OSHPD issues within two weeks and OSHPD design write-ups within 30 days, and execute the transition plan on time and with zero last-minute user changes.

Involve all stakeholders

Craft workers were extremely important to the success of this project and the partnering program. The subcontractors' foremen participated in the partnering meetings, and then the foremen would meet with their craft workers to relay the partnering goals and strategies when necessary. Input from the craft workers was also obtained for discussion at each partnering session. For example, when McCarthy challenged the subcontractors to institute a safety program above and beyond their current program, the craft workers came up with ideas to create safer work environments and then carried the ideas into action and monitored one another to ensure compliance.

The field crews were also responsible for implementing efficient material procurement and installation means and methods to achieve cost and schedule

goals established in the Partnering Charter. When a proposed change order was drafted by the owner or design team, the field management and craft workers would have a meeting, review the proposed change, and provide timely feedback defining the impacts on the job of implementing the proposed design revision. If they saw a negative effect from the proposed change, they would provide material and installation solutions to the owner and design team that would achieve their design intent but minimize the cost or time impact on the overall project.

The major subcontractors and specialty trade subcontractors were also an integral part of the of project team responsible for meeting the partnering goals. They participated in all of the partnering sessions and helped to establish the goals in the Partnering Charter. The subcontractors also participated in the evaluation surveys and provided input related to their specialty, all of which helped to achieve the project goals.

Partnering leads to innovation

Every innovative idea on this project was supported by the goals and spirit established through the partnering process. Some of the innovative ideas developed through the course of the St. Joseph Patient Care Center project included helping to fund Zone Four seismic compliance under the California Senate Bill 1953. An unfunded mandate, the Bill became effective in March 1998 and requires all hospitals to withstand the maximum potential earthquake and continue to be operational immediately afterwards. To help offset the cost of building a seismic compliant facility to house inpatient beds, the team conducted service-line assessments for the hospital that evaluated and designed capacity in the new Patient Care Center for service (business) growth in surgical services. These studies led to the decision to add 150 patient beds (figure 1) and 14 operating suites (figure 2) to increase the hospital's capacity and service capabilities. The increased revenue from these services will pay the debt on the new building.

One of the 150 new patient beds at St. Joseph Hospital's new Patient Care Center

Photography by RMA Architectural Photographers

One of the 14 new operating suites at St. Joseph Hospital

Photograph courtesy NBBJ © Tim Griffith

The mechanical, electrical, and plumbing systems (figure 3) on this project were challenging and could have resulted in lost time and an increased budget if not coordinated and implemented correctly. The existing utilities were in the path of the new construction and exact design and coordination was needed to successfully adjoin the utilities to the new hospital building without damaging or

interrupting the existing infrastructure. As a result of partnering, constant communication and coordination among the design and construction teams, the MEP challenges were successfully overcome and resulted in no additional funding needed.

The M/E/P systems on the St. Joseph project were challenging

Photography by RMA Architectural Photographers

One of the Patient Care Center's unique challenges was building the panelized curtain wall with three-story graphics composed of ceramic frit within the glass assembly (figure 4). McCarthy worked with the glazing supplier and subcontractors to develop a solution to ensure that the graphic etchings on 247 glass panels, varying in size from 2′ × 5′ to 9′ × 5′, were aligned correctly so that the design matched perfectly.

One of the Patient Care Center's challenges was building the panelized curtainwall with three-story graphics composed of ceramic frit within the glass assembly

Photograph courtesy NBBJ © Tim Griffith

There was no formal commissioning plan for the project, so the team implemented its own process. From generating a start-up schedule months in advance, to developing a detailed testing verification book prior to start-up, the team was able to successfully commission the project and obtain a final OSHPD sign-off with no delays.

Outside communications

Because of the proximity of the Patient Care Center to two high-volume hospitals, a parking structure, an office building, an elementary school and residential buildings, it was important to keep a positive relationship among all parties. Therefore, one of the partnering goals was that “patients, staff, and neighbors should be informed and minimally impacted by noise and parking.” The team created a comprehensive communication plan, which continually relayed pertinent and timely information to all parties and provided everyone with a personal contact who was available at all times to meet in person, listen to feedback, and discuss any concerns.

Before construction, the project team held week-long Visioning Sessions with the neighboring children's hospital to develop the most effective plan for working together throughout construction. Similar meetings were held with the Sisters of St. Joseph Hospital, the nearby residents, and businesses and school administrators. Quarterly Community Forums also were held to discuss construction progress and upcoming work, and members of the team went through the neighborhood several times, answering questions one-on-one with community residents. In the end, the construction phase of the project had *zero* delays because of community complaints or interferences, and the neighboring hospitals remained 100% functional during construction.

Another important aspect of the project was to mitigate construction noise, vibrations, and/or effects on traffic and throughways. The team held weekly meetings with the hospital facilities team to communicate upcoming construction activities and to alleviate any concerns. In addition, extensive planning and make-ready work was completed ahead of major construction activities to ensure access for staff and patients to all parts of the existing hospital. A detailed site-logistics plan was also developed to mitigate traffic; it included road rerouting, providing off-site staging areas for construction materials, resourceful scheduling of construction deliveries, and providing convenient pick-up and drop-off areas for patients.

Partnering and quality construction

McCarthy established a multiple-staged Quality Control and Inspection Process:

Step #1: Subcontractors send McCarthy a Quality Control report stating that they have completed their work.

Step #2: McCarthy completes a secondary Quality Control list in the rooms that the subcontractors have reported complete.

Step #3: After the subcontractors have completed work per the Quality Control list, McCarthy submits a final in-wall inspection to the Inspector of Record (IOR) for final corrections and sign-off, and then closes up walls.

This process was conducted for both in-wall and overhead close-up and was completed per the schedule completion dates.

The project team also implemented a Quality Control program including:

Trade-specific pre-installation meetings. The general contractor, designer, trade-specific contractor and inspectors meet to review the contract documents

(plans and specs) to make sure that everyone understood each other's expectations from a design intent and means and methods of installation perspective. This would also provide a forum for Q & A by the field management team as it related to all 16 divisions of specifications before building materials were bought and installed.

First-installed field visits and analysis. The project management team would conduct an early punch list on each building system the first time it was installed in the field to make sure that baseline quality was established at each step of construction. After the first-installed meeting, the results would be communicated to the balance of the trades so that they all understood intent of the final product.

Field mock-ups. Each major room, redundant building system, and exterior enclosure system was completed in a expedited manner so that all trades could establish a sequence of installation and standard of quality and the designer and owner could see the final product of the repetitive building systems rooms' high-end finishes. This allowed early adjustments to be made by the craft workers along with the designer and owner so that the final product met everyone's expectations, and corrections did not delay the overall project.

Fabrication plant visits. The general contractor, inspectors, owner, and design team traveled to all major equipment and material fabrication plants to ensure that the products being produced from raw material were meeting the standards and quality that was intended in the plans and specifications, both aesthetically and functionally.

The *true* test of quality, though, is the approval of the people who are using the facility after it is built. Patsy Brandenburger, a long-time Critical Care Services RN at St. Joseph Hospital, shared her excitement about the new hospital: "The new Patient Care Center is phenomenal. The amount of space and the [space plan] flow in the patient care units has created an excellent environment for critical or intensive patient care. The integration of the latest technology along with the thoughtful healing design of the building has given us [the caregiver] and the patient the best tools for healing."

Chuck Coryell, St. Joseph Hospital director, design and construction, summed up the importance of partnering to the quality of the project: "The project team was highly collaborative at every stage of the construction process. They started strong and finished strong with consistent performance throughout the 38-month project. The team provided resources with the right skill set at each level of the field operations for both the new Patient Care Center [hospital tower] and the supporting central utility plant [Facilities Services Building]. From the project executives to the jobsite foremen, each staff member displayed a genuine

interest in their role at meeting our goals of high-quality facilities delivered on time."

Partnering develops ongoing relationships

The project team has created strong relationships with one another through developing skills they learned during team building and partnering sessions that will carry with them long into their next endeavors. At the start of the St. Joseph Hospital Patient Care Center project, relationships had to become synchronized very quickly because a new general contractor was brought on board late in the preconstruction process after another general contractor left the team. However, after the partnering sessions began, a process was created to form trust and respect among team members that helped streamline procedures, expedite the schedule and achieve project goals.

As a result of this effective partnership, St. Joseph Health System, NBBJ, McCarthy, and many of the subcontractors and other project team members are continuing to work together on new projects, with prospects for several more in the future. The St. Joseph Health System has contracted McCarthy and the applicable subcontractors for four additional large-scale construction projects.

TCV

For more information on St. Joseph's Hospital, visit http://www.sjo.org. Contact C. Patrick Peterson, Project Director, McCarthy Building Companies, Inc., at 949.851.8383 or nb@mccarthy.com, or visit http://www.mccarthy.com. Contact John Pangrazzio, FAIA, FACHA, Partner, NBBJ, at 206.223.5555 or seattle_office@nbbj.com.

Sidebar

Team Building and Motivational Activities

Team building and motivational activities were an important part of forming a cohesive project team capable of bringing this challenging project to a successful completion. Some of these activities included:

- An initial partnering session.
- The design team studied and read The Compassionate Presence, a book documenting and illustrating the Sisters of St. Jospeh's 78-year history. This book became an important tool throughout the design process and, through partnering meetings, the information from the book was instilled into the mindset of the project team.

- Weekly meetings between the client and project team to keep the communication lines open.
- A barbecue with the project team and the hospital staff and caregivers with 250 people attending.
- Project team baseball games and lunches. These offered the team a relaxed environment in which to share diverse viewpoints, build common ground, and ensure that everyone's voice was heard.
- The trades nominated individuals from other trades for a crafts worker of the week award, and a T-shirt was given to the worker that best exemplified good craftsmanship and/or safety.
- McCarthy gave monthly safety awards to its employees whenever there were no jobsite accidents during the month.
- Stemming from the project's safety challenge, several of the subcontractors stepped up and added new safety requirements and gave incentives to their employees similar to McCarthy's incentive program.
- McCarthy had golf and other team building outings with the owner, architect, and mechanical engineer.
- At each partnering workshop, the partnership voted and acknowledged the “best partner” or the individual who in the preceding three months had been the best team player.
- The project team developed and implemented a Patient Activity Program for the Children at the neighboring children's hospital that overlooked the construction site. The program included several architecture- and construction-themed activities, and donating construction related toys to the hospital play rooms. The project owner, architects, engineers and subcontractors all volunteered and assisted with this program, which was implemented quarterly for two years.
- The project team provided volunteer services and donations to the neighboring Ronald McDonald House and supported St. Joseph Hospital in its efforts for the American Heart Association by participating in “Go Red for Women Day” and raising more than $150,000 during two Orange County Heart Walk events.
- In support of the construction industry, the project team shared its project expertise with the industry by providing numerous jobsite tours for OSHPD office and field personnel, students participating in the ACE mentoring program, architects and engineers.
- The team engaged an outside team building facilitator in January 2006, who worked closely with the team during the entire final year of construction.

Sidebar

Innovative Construction Techniques

Developed through partnering with subcontractors, who initiated their ideas on this project, they included:

- Changing the Cast In Place (CIP) basement walls to Shot Crete, which shaved 30 days off the entire project schedule and saved money. This benefit was realized because the means and methods of installing a Shot Crete basement wall system are much more efficient and takes less manpower than a formed CIP wall system.
- Using deck inserts to support MEP systems.
- Changing to a PVC roof system, which was superior in quality to the initial roof specified and also easier to work around. To do this, McCarthy proposed taking money budgeted for a temporary roof and investing it in a more durable PVC roof system. The substrate of this roof system can act as a temporary roof system and the finish product is a higher-grade product, both in material, maintenance, warranty, and long-term durability. The owner, designers, and contractor maximized the design intent, construction logistics, and product for the end-user without increasing the overall project budget.
- Using blue-board (mold resistant) for drywall areas allowed for early installation of interior walls to start before the entire building was protected from weather or moisture (i.e., dried-in). With this early build-out, the project either accelerates or builds float into the schedule, thus benefiting the overall project schedule.

Sidebar

Recruitment Draw

The new state-of-the-art Patient Care Center has already become a great recruiting tool for St. Joseph Hospital. The building design is an integral part of their marketing tool kit, and the special attention to staff amenities and patient centered care have received high remarks from new recruits and current staff. When St. Joseph Hospital held their “sneak peek” recruiting fairs, which gave attendees an opportunity to experience the quality of the new facility first-hand, they were astounded by the response. Hundreds of recruits turned out for the two events and 91 new employees were hired, making these the hospital's most successful recruiting fairs to date.

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For More Information on Ventura Consulting Group's Project Specific Approach to Partnering:

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