



## Accelerated Delivery:

A Case Study on the Impact of **Federal Health Care Reform** on the Design and Construction of a Physician-Owned Surgery Hospital

### CLIENTS

Methodist Health System  
Private Physician Consortium  
SRP Medical  
Medica Development

### PROJECT SIZE

108,500 SF  
7 Operating Rooms  
32 Patient Beds (including 4 ICU)  
Diagnostic Imaging Suite



Rogers-O'Brien Construction



## Introduction

North Texas is home to many regionally and nationally recognized surgical specialists. Conventional hospitals must serve a wide variety of patient needs, from emergency care to elective surgery. Far too often, patients seeking surgical treatment for orthopedic ailments or injuries find themselves at the mercy of hospital operators who, due to emergency procedures, must reschedule elective surgery at the last minute, causing frustration and anxiety for patients and loss of revenue for surgeons.

In 2008, a loosely organized group of orthopedic and ENT surgeons from a number of North Texas hospital systems came together for the purpose of creating a special surgery hospital. Central to their common goals were improved patient outcomes, greater control over surgery scheduling, and more highly specialized nurses and staff. In addition, they sought access to state-of-the-art facilities and equipment, including larger operating rooms to accommodate the apparatus used in orthopedic procedures, and convenient, on-site imaging equipment.

Sprawling metropolitan growth caused Methodist Health System to begin investigating ways to increase their outreach, which happened to coincide with the group of physicians initiating discussions about building a hospital of their own in far north Dallas or Addison.

## The Business Case

Methodist administrators were pleased to investigate the possibility of a new suburban hospital.

“The fact that there would be a physician ownership component was an important consideration in Methodist’s willingness to build the hospital,” said Michael Schaefer, CFO of the Methodist Health System, who has dealt with financial reality of managing health care services for more than 25 years.

“Patients come from physicians, and this group of physicians wanted a place they could use that would operate in a manner that was a little more responsive to their desire for how a surgery hospital ought to operate,” Schaefer said. “They provided a ready-made medical staff and their own informal leadership.”

Utilizing information provided by the physicians, a financial model was constructed around the volume of inpatient and outpatient surgeries, an optimal payer mix, and projected revenues.

Tom Dwyer, principal in charge of health care for BOKA Powell, translated those statistics into a building program that established the need for seven operating rooms and 32 patient rooms, and a diagnostic imaging suite including CT and MRI in a facility totaling 108,500 SF. Rogers-O’Brien Construction formulated a construction budget based on the programmed areas and comparable quality expectations established by a Methodist hospital project in McKinney, Texas, already under construction. Developer Bill Persefield with Medica Development and project financier Scott Wilson with SRP Medical investigate the cost of construction and financing options, including their fees. The numbers yielded a favorable outlook for the project in the near and long term.

“We had very detailed pro formas of how we thought the financial picture was going to look based on the volumes that the physicians told us they could bring,” said Pamela Stoyanoff, COO of Methodist Health System. “Even with an economic downturn looming, the numbers were still so healthy that we felt they could withstand it,” she said.

Methodist Health System remained faithful to their community outreach goals by sponsoring a hospital that would attend to the needs of Medicare and Medicaid patients. At that time, uncertainty about federal health care reform, including a prohibition on physician-owned hospitals, led Methodist and the physicians to engage in discussions about best and worst case scenarios. If they could not include physician ownership, Methodist felt they needed to ensure they could preserve the physicians' commitment to utilize the new surgical hospital in other ways.

An ideal ownership structure, "Plan A," was developed in which Methodist Health System would own 51 percent, and the physicians would be the majority minority owner along with Nueterra, the hospital's management company.

"Plan B" evolved to incentivize the physicians in other ways in the event that the physicians could not have ownership.

### **Project Financing and Real Estate Challenges**

Solicitation of project financing began in the fall of 2008.

"We started this project at the end of 2008, probably the worst economic time to be trying to pull together construction financing," said Scott Wilson, managing director for SRP Medical, the project financier. "This was a fantastic project with great backing, but it didn't matter to a lot of the financial institutions that had pulled out of the market and really just couldn't make construction loans."

Due to financial headwinds, national banks were unable to tackle the loans required for the project's sizeable \$60 million budget. A consortium of local and regional banks was formed to allow each to commit smaller pieces of the total financing needed to move forward.

Challenges also emerged in the land acquisition process. A site was tentatively chosen, and architect BOKA Powell began conceptual design that would lead to zoning changes and the granting of entitlements by the Town of Addison. The site's expansive frontage on the Dallas North Tollway, one of the area's busiest highways, would provide excellent community visibility.

Proximity to a private K-12 school would present several challenges. Concern for traffic safety, emergency vehicles, exposure to back-of-house functions, and surface parking lots led to zoning stipulations for screening and curb cut restrictions.

Once the new site was properly vetted and entitled, SRP Medical went to market to secure financing for acquisition. But due to the economic slowdown, many REITs were forced out of the market. Instead of relying on traditional sources for equity and debt financing, SRP Medical was able to get a group of private investors together, including Methodist Health System and many of the physicians engaged in this project, to invest the necessary equity to acquire the land for the hospital.

### **Design and Construction**

Hospital design is inherently complex — much more so than other traditional buildings. To that end, the team agreed at the outset to use a state-of-the-art, three-dimensional, virtual design and construction

process called Building Information Modeling, or BIM.

“Clients rely upon architects to provide the latest in technology,” said Tom Dwyer, principal in charge of BOKA Powell’s health care practice. “BIM requires more of the architects up front time and effort, but pays back during the construction administration phase by reducing the time associated with mechanical, electrical and plumbing system fabrication and fewer contractor queries.”

John Carver, senior vice-president with Rogers-O’Brien, in his 25 years as a hospital administrator, provided unique insight into the best means to achieve the ultimate goal.

“Increasingly, hospital owners recognize that as complex as a hospital is, it requires a higher level of coordination than a traditional office building and the investment of –human resources and human capital to allow decisions to be made more quickly, and right the first time, is far more valuable to them, than the few additional dollars required to do it,” Carver said.

While Revit (BIM software) worked well for the architectural, civil and structural drawing, the mechanical, electrical and plumbing (MEP) engineers fell behind in their documentation process due to software limitations, which were favorable for structural coordination, but not for fabrication.

“It became clear that MEP engineering drawings needed to be taken only to the point of avoiding structural conflict,” said Carson Coleman, project manager for Rogers-O’Brien. “The subcontractors have to redraw everything for fabrication and automation.”

Rogers-O’Brien hired Brandt Engineering, a subcontractor, to complete the MEP drawings using their proprietary fabrication software. Under that methodology, the MEP construction documents progressed rapidly toward completion and were inserted into the final construction documents.

Construction on the hospital began in July 2009. But in a span of three months, 57 rain days caused delays in the schedule. However, BIM started paying dividends through the use of GPS technology.

“We were able to save 25 to 30 days on underground work thanks to the subcontractors’ off-site prefabrication of pipe and fittings and use of GPS technology to locate MEP slab penetrations into partitions,” said Rogers-O’Brien Construction Superintendent Donnie Tidwell.

### **Physician-Ownership Prohibition Forces Early Completion**

Four months into a 14-month construction schedule, the physician ownership prohibition became reality. Immediately, the ownership group and Rogers-O’Brien brought the team together to discuss the feasibility of accelerating the schedule to complete 10 months of remaining work in six months. If the facility were not certified by the Centers for Medicare and Medicaid Services (CMS) by Dec 31, 2010, physician ownership would not have been possible.

“Failure was not an option,” said Schaefer. “We met with the real estate team, including the general contractor, and asked what had to happen in order for this to get done.”

“We had to see if it was feasible to take a schedule with a thousand different variables and compress it

enough to say that we can meet or beat the deadline,” Wilson said. “We needed the team to assess was there really any feasible way that physically the project could be completed in time to not just be done my Dec. 31, 2010, but delivered in time for the tenant to occupy the building, to get set up as a hospital, bring all their people and equipment in, get patients in the door, see a certain number of patients, have the Medicare inspection company out to inspect the hospital, have them give it the stamp of approval or enable it to get its provider number all before the end of the year.”

“And that’s when you know if your partners are good or bad partners,” said Stoyanoff. “We had to sit down with Rogers-O’Brien, BOKA Powell and our other constituents and say, ‘you’ve really got to move quickly.’ It put a large onus on Rogers-O’Brien more so than BOKA Powell because BOKA Powell had done a lot of their work already. By that point, Rogers-O’Brien was having to build the hospital, and they were going to have to move at lightning speed.”

Styoanoff said the management company, Nueterra, also had to move quickly to respond to the new deadline.

“They had to make sure we got all the equipment, they had to hire people, they had to get a CEO, they had to develop a medical staff, and they had to create bylaws and policies and procedures and all of the infrastructure that goes into opening a hospital – and they also got shorted four months,” Stoyanoff said.

Rogers-O’Brien worked with subcontractors to determine the probable cost to expedite the delivery of materials and completion by dual shifts, and then shared that information with the ownership group.

“The architect and general contractor presented options and what they knew about pricing and we choked a little bit,” said Schaefer. “But when we looked at the overall project and projections from a financial perspective, we said it’s not so much that we can say no.”

With a green light, team members committed to meet the new deadline. Rogers-O’Brien and BOKA Powell moved extra staff on site, including experienced BIM architects and operators and project management staff, to coordinate construction and respond to subcontractors’ questions quickly.

“Being on site, we were able to turn the general contractor’s questions into responses in minutes rather than days,” said Michael Crowe, project manager for BOKA Powell. With such high stakes, accuracy was key, and immediately the level of detail in the BIM models became a huge asset.

“There was no time in the schedule for redos. Work had to be done right the first time,” said Carson Coleman, project manager for Rogers-O’Brien.

The construction schedule had to be revised to ensure materials were delivered well ahead of the original schedule and were available on site when they were ready to be installed. Using the BIM information, MEP subcontractors were able to fabricate whole sections of piping and ductwork in controlled conditions off site.

“Everything fit,” said Rogers-Obrien MEP Coordinator Jon Walls. “It was amazing to see an offset in-

stalled before everything was installed around it, and you're thinking, why did they do that? And all of a sudden the pieces got filled in and you could see why they did it."

### **Schedule Achieved**

When construction was complete, Stoyanoff said she expected a long list of punch list items, as is customary with such a complex project.

"In the end when we had our inspections by the city and state, we thought we were going to have a big list of things that were missed because we built so quickly and we were going to have to ramp up and quickly take care of those issues," she said. "In reality, it was a nominal list. There was nothing major, and things that were on the list were easily resolved. We place a lot of that credit not just with Rogers-O'Brien for building it well, but with BOKA Powell for drawing it well and for using that BIM process that helped us avoid all of those deficiencies in the end."

The certificate of occupancy was issued Sept. 30, 2010, four months ahead of the original scheduled completion. Staff occupied the building on October 11, 2010, and patients began arriving Nov. 1, 2010. By Nov. 3, 2010 the hospital had seen the required 15 inpatient and 5 outpatient cases to be eligible to be surveyed for Medicare/Medicaid provider certification. Methodist Hospital for Surgery received its provider number on Dec. 29, 2010. It was the last physician-owned hospital in Texas to receive CMS certification.

Management company Nueterra played a key role once the building was open, said Stoyanoff.

"Nueterra really did a great job in helping us to get this open. If they had not had everything in place, including supplies and people, even if the building was delivered in October, we would not have been able to open to take our first patient in November. So they only had one month to move in and provide everything once Rogers-O'Brien completed construction. Typically you have at least two months," she said.

"With the right set of motivations or things at stake, you can accelerate a project considerably," said Schaefer. "But it takes a Herculean effort by everybody, and I would think that not every builder can do it. Rogers-O'Brien certainly demonstrated that they can do it."

Wilson said it took great faith in the team for Methodist and the physicians to move forward despite the risks.

"It's a great credit to Methodist and the physicians that they assessed the risk and they had confidence in the entire project team," Wilson said. "They had the confidence in Rogers-O'Brien to physically make all of the thousand moving pieces physically come together, BOKA Powell to make sure that on the fly drawings could be finalized or revised in time to get things done and to oversee that project."

BIM added to the good and bad drama, Wilson said. At first, there was nervousness that BIM was a cutting-edge technology and there were questions about whether the team was assuming risk as a result of doing something unconventional that could negatively impact the project. However, looking back on how the project unfolded, had the drawings been done conventionally, Wilson said, it would have led to the conventional coordination shortcomings, which the BIM process virtually eliminated.

### **Reflection and Lessons Learned**

“This really was a success story of a partnership,” Stoyanoff said. “It was a monumental feat. I don’t know of anywhere – anywhere –I’ve seen somebody do something like this ever nationally.”

Reflecting upon the finished facility, team members said there were many lessons learned.

“One of the most exciting things about that project was that there was never a weakness,” said Wilson. “It was a real team effort. Everyone around the table did not only what they were contractually expected to do, but they did more in the spirit of cooperation.”

The BIM process and collaboration were invaluable tools, said John Carver.

“BIM makes the general contractor’s job easier, the project goes more smoothly and it can be completed more quickly with far fewer field issues,” Carver said. “Concerns are addressed in the office ahead of time.”

But, Carver said, “success depends on the team, more than technology.” “BIM is a great tool, but the willingness to make it happen is far more important,” Carver said.

“We were very pleased with this process, as was our board of directors,” said Stoyanoff. “Even though we had some major challenges, it was seamless to folks on our end of things. I want to remind everyone that this was a Herculean effort – truly monumental.”

The project team’s unwavering commitment to meeting the accelerated deadline was the ultimate saving grace that made the project a success for Methodist and the physician owners.