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The Environment of Cancer Care Fast-Tracking a Patient-Focused Radiation Therapy Center



Mark Balasi, AIA
Vice President
Phillips Swager Associates
Naperville, Illinois

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Designing and constructing any building project on a fast-track schedule is a challenge. Doing the same for a hospital addition to house sophisticated radiation treatment equipment from start to finish in just 12 months requires a dedicated team approach with a plan of action that builds consensus and provides the basis to make informed decisions.

The new Mary Brown Stephenson Radiation Oncology Center at Midwestern Regional Medical Center near Chicago is the result of just such a team effort. The owners and their consultants undertook the challenge to take the project from space program to reality in one year by planning the work and then working the plan to manage expectations and identify opportunities. In the process the team designed a facility that focuses on the patients' emotional as well as medical needs and creates an environment of comfort and hope for those receiving state-of-the-art cancer care.

Beginning with a predesign process that explored a wide range of issues and turned the team's focus into goals, a big picture and its feasibility were established. With clear goals, and a detailed schedule of anticipated activities, the team was equipped to manage the process and bring it to a successful conclusion.

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Introduction

Fast-tracking a building project is a balancing act. It requires the understanding that when you start the construction of a building before the design is complete there will be benefits and probable compromises in the final outcome. The challenge is to achieve a balance between the need to complete a project in the shortest feasible time and the desire to develop the best solution. If owners and their consultants undertake the challenge with a team approach and a proactive plan of attack, managing expectations and identifying opportunities, it can be a successful and rewarding project experience.

The new Mary Brown Stephenson Radiation Oncology Center at Midwestern Regional Medical Center in Zion, Illinois, is a case in point. Designed and constructed in just 12 months, it was a collaboration between owner, architect/engineer, contractor, and vendor. The new treatment center, located halfway between Chicago and Milwaukee, is affiliated with Cancer Treatment Centers of America (CTCA), a healthcare organization founded in the early 1980s that has been a pioneer in the development of a comprehensive, holistic, patient-focused approach to the treatment of cancer. With a strategic commitment to provide radiation treatment services at its Zion facility by November 1998, CTCA met with the architect to confirm program and project goals in November 1997. Basic design began December 2, 1997, and by March 1998 construction began. The owner took occupancy on October 30, 1998, and opened for business on November 20, 1998.

The new addition to CTCA's Midwestern Regional Medical Center was designed to convey an atmosphere of comfort and hope for those receiving state-of-the-art cancer care. The CTCA staff worked with the architects and engineers to create a synthesis of advanced medical planning, architecture, and furnishings that melds healing with medical technology. The addition was designed to enhance the cancer care environment. The design was formed by CTCA's practice of using patient focus-group input, an approach that is fundamental to the development of all their facilities.



[Figure 1](#): Exterior of entry at night

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This building project involved the construction of a new addition to an existing hospital to house the 8,000-square-foot first phase of a new radiation oncology service. The new facility accommodates equipment that is among the most technologically advanced of its kind. It includes a treatment vault for a new 18 MEV linear accelerator with intensity modulated radiation therapy (IMRT) capability. The IMRT accelerator delivers a highly regulated, pinpoint-focused dose of radiation to the site of a patient's tumor. Associated support equipment includes a new combination Computed Tomography/Simulator x-ray machine.

In addition the facility has a treatment vault for high-dose-rate brachytherapy equipment. A dedicated outpatient entry and family waiting area, patient exam rooms, treatment planning rooms, subwaiting areas, and space for staff offices, support, and storage complete the addition.

Although the owners' timetable was a primary driver of the development and design process, there were other notable aspects to the project. Wanting state-of-the-art equipment, the owners had not selected a vendor for the radiation therapy equipment at the start of design. A patient-focused care approach involved developing the design with patient-focus group input. The addition had to be an institutional occupancy, be situated to integrate the existing imaging/radiology department, provide for future horizontal expansion of the department, provide a new dedicated entry from below grade, and be planned to accept up to five floors of vertical expansion. The project had to go through a local municipal permitting process, a county watershed development permitting process, and a state department of health design approval process. The final program and design had to fit within the limits of Illinois' Certificate of Need (CON), which established the maximum allowable size and project cost of the addition.

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[Figure 1](#)
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[Figure 2](#)
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The Mary Brown Stephenson Radiation Oncology Center Midwestern Regional Medical Center, Chicago



Figure 1: Exterior view at night. Photo: Mark Ballogg, Steinkamp/Ballogg, Chicago.

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- | | | | |
|-------------------|-----------------------|------------------------|---------|
| 1. Lobby | 7. Office | 13. HDR Treatment Room | PUBLIC |
| 2. Family Waiting | 8. Patient Waiting | 14. HDR Control | MEDICAL |
| 3. Business | 9. Linear Accelerator | 15. Treatment Planning | STAFF |
| 4. Conference | 10. Linac Control | 16. Staff Lounge | SUPPORT |
| 5. Nurse Station | 11. CT | 17. Mold/Block Room | |
| 6. Exam Room | 12. CT Control | 18. Dark Room | |

Figure 2: Site Plan

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Figure 3: Vault construction. Photo:Phillips Swager Associates, Naperville, Illinois.

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Figure 4: Lobby and family waiting area. Photo: Mark Ballogg, Steinkamp/Ballogg, Chicago.

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Figure 5: Corridor. Photo: Mark Ballogg, Steinkamp/Ballogg, Chicago.

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Figure 6: Linear vault. Photo: Mark Ballogg, Steinkamp/Ballogg, Chicago.

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