

Cancer Center New Construction

Tips from an architect on working with your design team

by Doug Infelt, AIA

Many cancer programs today are seeking ways to minimize technology's impact on the patients' healthcare experience and create an environment where healing can begin. For cancer program administrators, one of the questions to be addressed in building or renovating a cancer center is how will the facility meet a patient's physical and emotional needs?

There is no single cookie cutter cancer center solution. For this reason, it's critical to do your homework before embarking on new cancer center construction or renovations:

- Know what you want to accomplish.
- Recognize what's realistic in terms of your hospital's strategic business plan.
- Pay close attention to neighboring facilities and their service offerings.
- Determine what portion of the market you can feasibly expect to capture.

Of course, it's equally critical to find a design team that has cancer center experience. Community cancer centers have a unique set of requirements, the intricacies of which must be understood in order to create an efficient, functional design.

Establish the Right Teams

The lion's share of decisions required to design and construct a cancer center should be made by those who will provide daily services. Along with facility owners and administrators who will comprise an executive committee that directs financial decisions, cancer programs should create a steering committee comprised of physicians, nursing staff, and technicians. Included in this committee should be a group of cancer survivors. These individuals who have gone through or are going through cancer treatment services can let you know what's important from the patients' perspective in terms of care, facility features, etc.

Communicate Early and Often

With the proper committees established, the team is ready to discuss key issues with the design team including:

- The design construction process
- Timelines and schedules
- Project milestones
- Project requirements and a process for meeting these requirements.

This early communication is critical because many cancer centers, whether small or large, do not know what an architect does or what a building program entails.

Typically a community cancer center can be broken down into five separate areas: 1) radiation oncology;

2) medical oncology; 3) public waiting and reception areas; 4) support areas; and 5) administration offices.

Larger cancer centers, of course, offer more specialized departments such as surgical oncology, gynecological oncology, women's breast center, and research and education components.

The steering committee's initial primary goal is to define the facility's scope and program. For example, the steering committee will need to identify what spaces are needed in the new cancer center. This group will also answer critical questions such as: *Will it be a stand-alone facility or tied to an existing hospital? How should spaces be organized? What is the most cost-effective, efficient, patient friendly circulation path?*

Staff and Patient Input

The process needs to be participative, with each phase setting the stage for the next phase. Once a large facility overview is established, the team can focus on specific room details, such as identifying how rooms will be organized and what the exteriors will look like. Staff members should have an opportunity to explain to the design team their job functions and how they feel that function should dictate design. While each individual's design input cannot always be used in its entirety, it is incorporated as much as possible to enable the design team to create flexible spaces that achieve staff goals.

In the design process, patients should also be afforded the opportunity to share their needs and wishes. It's critical to look at spaces from the patients' perspective to understand their definition of an "ideal encounter" and what is required from cancer center design to make that happen.

If the stakeholders believe the facility will ultimately expand, the time is now, in the early planning stages, to discuss future facility needs. Does cancer center leadership foresee additions down the road? If so, how will the facility accommodate that growth? How will circulation expand? These early decisions help designers specify the placement of rooms and systems for cost-effective expansion. In some cases, depending on current costs and future cost predictions, the decision to create "shelled" space may be the most fiscally sound choice.

Recognizing how spaces will be used and how often they will be used impacts critical design decisions. For example, a cancer center could choose to build separate rooms to accommodate patient education, consultations, conferences, or grieving families. In reality, these rooms are likely to be used only for short periods. A better choice might be one multi-purpose room conveniently sited to accommodate diverse needs.

Other cancer centers may choose to create a space that



Infusion area at McCreery Cancer Center at Ottumwa Regional Health Center in Iowa.



CT simulator at McCreery Cancer Center at Ottumwa Regional Health Center in Iowa.



Nurses station at McCreery Cancer Center at Ottumwa Regional Health Center in Iowa.

Top Four Design Obstacles

You may want to treat cancer in a Taj Mahal, but do you really *need* a Taj Mahal? The key to designing and building a successful cancer center is developing a realistic set of goals that address specific needs, recognizing what is or isn't possible, involving the right teams, and letting them participate to create a facility that can meet the community's needs for years to come. Community cancer programs contemplating new construction need to be cognizant of the top four design obstacles:

1. Cost
2. Not having the right people involved
3. Ignoring community members
4. The inability to separate wants from needs.

The challenge was that the facility, as specified, couldn't accommodate the desired functions and projected volumes. The facility needed to be resized. Given early communication, the facility was able to secure additional funds by the time the project broke ground.

Design Challenges

Without question, early and ongoing communication positively impacts the design and construction of a cancer center. Challenges, however, will still present themselves. One such constant challenge involves the ability to balance human needs against technological requirements. Today, many cancer centers attempt to "soften" large high-tech equipment and make the treatment environment less intimidating. Incorporating soothing colors, warm woods, art glass on ceilings, natural lighting, healing gardens, and relaxing water features can help ease patient fears. The community of one of our client cancer centers volunteered to plant a garden in the facility's courtyard. That courtyard lies at the heart of the circular facility, offering natural daylight into exam rooms, the staff lounge, and patient intake areas.

Balancing patients' privacy needs with an open floor plan presents other challenges. At times, patients want to talk to other patients who may be undergoing treatment at the same time. At other times, patients may be feeling poorly, and want to be alone. The answer is to create flexible spaces that can accommodate both needs.

Look to the Future

For years, linear accelerators have required up to six-foot-thick concrete walls to contain dangerous beams of radiation. Now a variety of materials, such as lead bricks, reduce shielding thicknesses. New doors are also available that can eliminate the need for long shielded corridors or mazes. While these materials are more costly, they can reduce the amount of space needed.

At some point in the future, pharmaceutical advances may eliminate the need for treatments such as chemotherapy. Clearly, such advances will impact current facilities. Your cancer center may want to consider developing a plan to adapt its facilities to accommodate ever evolving technologies. 📍

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meets more than just the community's healthcare needs. Recognizing that its small town had limited spaces for community gatherings, one of our client hospitals opted to design a waiting area that could double as a community gathering space. More and more facilities are opting to create flexible spaces that can serve multiple purposes.

Be Realistic about Project Costs

Setting and communicating expectations early on helps both sides—the design team and the cancer center— understand needs relative to costs. For example, we worked with one hospital board that envisioned spending \$5 million to design and construct a 10,000-square-foot cancer center.