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## Creating the Heart of Clarian Health



Cardiovascular Center - 18 January 2002

Todd Buerger, AIA, BSA Design Inc.,  
Indianapolis

Eric S. Williams, MD, Indiana University School  
of Medicine, Indianapolis

Douglas P. Zipes, MD, Krannert Institute of  
Cardiology, Indiana University School of  
Medicine, Indianapolis

Barb Peters, RN, BSN, Clarian Health,  
Indianapolis

For most of the past decade, American hospitals have been merging, partnering, or consolidating services in response to shrinking reimbursements and growing pressures to control healthcare costs. At the same time, more and more patients in the U.S. have developed cardiovascular disease. This has increased demand for sophisticated cardiovascular diagnostic and treatment services, a demand that will continue to grow as the baby boom generation ages. Against this backdrop, Indiana's largest hospital system, Clarian Health Partners Inc., set out in 1998 to consolidate the cardiovascular inpatient, outpatient, and research operations of its separate hospitals into one cohesive unit. The intent was clear and compelling: to create one place that patients, physicians, nurses, researchers, and technicians could go for all cardiovascular needs. The logistics of the project, however, were anything but simple. BSA Design Inc., the Indianapolis architecture and engineering firm commissioned by Clarian Health, was challenged with finding an economical, fast track solution that would make use of existing space in multiple buildings. Further, the solution needed to create an identifiable center at Clarian Health, helping the organization compete with freestanding heart hospitals being built by other healthcare systems in its core central Indiana marketplace. The resulting Clarian Cardiovascular Center, which opened in mid-2001, has accomplished those goals. The \$30 million, 170,000-square-foot project offers valuable lessons to other design teams trying to help their hospital clients meet the challenges of an increasingly competitive healthcare market.

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Todd Buerger, AIA, BSA Design  
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Douglas P. Zipes, MD, Krannert Institute of Cardiology,  
Indiana University School of Medicine, Indianapolis

Eric S. Williams, MD, Indiana  
University School of Medicine,  
Indianapolis

Barb Peters, RN, BSN, Clarian Health, Indianapolis

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### Introduction

The facts about cardiovascular disease are alarming. The American Heart Association estimates that about 60 million Americans have one or more forms of the disease. Furthermore, it is the number one killer in the United States each year and costs society billions of dollars annually in increased medical expenses and lost productivity.

There's also another important fact that hospitals around the country are watching. Cardiovascular programs, already among their largest revenue-generators, are expected to become even more in demand as the baby boom generation ages. CACI Marketing Systems Inc., a national survey research firm, estimates double-digit increases in the over-45 population in the coming years. The firm says people in this growing age group are at the highest risk for developing some form of a heart or vascular medical condition.

It's imperative, then, that hospitals prepare for this increasing need for their services. Given the financial realities of today's healthcare market, that preparation also must be done as efficiently and cost-effectively as possible.

Clarian Health Partners Inc., Indiana's largest hospital system, set out to do just that in 1998.

Clarian Health had been formed a year earlier, in 1997, with the consolidation of Methodist Hospital of Indiana and Indiana University's two major hospitals, University Hospital and Riley Hospital for Children. The resulting entity today provides more than 1 million outpatient services and admits more than 55,000 patients each year, making it among the largest healthcare organizations in the country. As part of its commitment to the future—a commitment formalized in the agreement transferring the university-owned hospitals to private ownership—Clarian Health maintains strong ties to the academic medical community.

Clarian Health officials had successfully consolidated business and administrative functions of the three hospitals in the first year after the merger, which saved millions of dollars. As 1998 unfolded, the organization began planning the first major clinical consolidation, that of its cardiovascular services.

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## The Initial Landscape

Methodist Hospital, Indiana University (IU) Hospital, and Riley Hospital for Children are located within two miles of each other in downtown Indianapolis. IU and Riley hospitals are on the campus of Indiana University Purdue University Indianapolis. The university's world-renowned research center, the Krannert Institute of Cardiology, had been located in a separate building on the Indianapolis campus since the 1960s.

Early in the consolidation planning, Clarian Health administrators and physicians decided that pediatric cardiovascular services would not be part of the consolidation project. Those continue to be housed at both Riley and Methodist hospitals, each of which offers different specialized services for children.

Cardiovascular services for adults, however, would be consolidated on either the Methodist or IU campus. The vision was to establish one central location for outpatients and inpatients, five private and academic physician and surgical groups, and the hospital and university's cardiology research functions. This meant the end project would incorporate the entire gamut of spaces typical to medical environments: administrative offices, research labs, patient exam rooms, patient testing and evaluation areas, physician offices, research fellow work areas, and conference and meeting space.

In addition to offering one-stop shopping for patients, physicians, and researchers, Clarian Health officials estimated that the consolidation would save about \$15 million to \$19 million over a five-year period by reducing resource duplication and allowing physicians to provide more efficient care.

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## Location, Location, Location

BSA Design's first assignment was to examine both hospital campuses to assess the amount and location of open land and useful existing structures. Cost estimates and timelines were developed for a number of options.

While design teams were considering locations, Clarian Health physicians based at Methodist Hospital, and IU physicians and administrators, were debating the structure and philosophy of the end project.

In many parts of the country, including other healthcare organizations in Indiana, freestanding heart hospitals were becoming increasingly popular. One school of thought argued that Clarian Health needed a separate heart hospital to provide the highly specialized care cardiovascular patients require. Another, however, argued that these patients—who often are very sick with other diseases in addition to heart or vascular conditions—should be treated at an acute care teaching hospital where all of their medical needs could be quickly addressed.

After examining multiple building and renovation options, it was decided that the Clarian Cardiovascular Center would be integrated on the Methodist Hospital campus because it offered more square footage and land than the IU Hospital campus. More important, two buildings on the Methodist campus contained multiple vacant floors. If architects and engineers could figure out how to tie those disparate spaces together into a cohesive unit, using that space would allow the cardiovascular project to move ahead more quickly.



[Figure 1 - Site Plan](#)

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## Patient Focus

As designers and planners began thinking about the project, they quickly agreed that it needed to be as patient-focused and family-friendly as possible.

Clarian Health and BSA Design officials were aware of the growing body of research demonstrating that a more welcoming, caring, comforting hospital environment can help patients heal better and faster. Of particular inspiration were the San Francisco-based Planetree Model Hospital Project, in which hospital units have been reconstructed to increase patients' control over their environment; and the work of Jain Malkin, who teaches healthcare design at Harvard University and has written extensively about the design of healing environments and the role that family and friends play in patients' recoveries.

Owner and architect put these theories into practice with the first phase of the project, the construction of Clarian Health's Cardiac Comprehensive Critical Care unit. (Academy Journal 2000, "Designing for a New Model of Health Care Delivery," Donald B. Altemeyer, AIA, Chairman, BSA Design Inc.; Ann L. Hendrich, MSN, RN, Senior Vice President of Nursing and Patient Care Services, Clarian Health; Joy L. Fay, MS, RN, Director of Clinical Operations, Cardiac Comprehensive Critical Care, Clarian Health.) This 56-bed unit opened in 1999 and provides a home-like atmosphere and ample room for patients' families. The setting also helps reduce stress by virtually eliminating the need to transfer patients or repeatedly introduce them to new nurses and technicians who don't know their cases.

With patient and physician response to the CCCC unit overwhelmingly positive from the beginning, Clarian Health and BSA Design set out to incorporate that same patient-centered approach into the remainder of The Clarian Cardiovascular Center project.

## The Challenge

The Methodist campus space earmarked for The Clarian Cardiovascular Center presented several challenges to the project team.

First was how to lay out the spaces. The two primary buildings that were to be used for the project were the Noyes Pavilion, a virtually empty, seven-story structure built in the 1960s; and the Methodist Professional Center 2 (MPC2), a medical office building with one vacant floor. Neither building offered enough available square footage on its own for the program. Worse, the two structures were about 100 feet apart, at a diagonal across a small parking lot.

Second, the Noyes building presented a significant construction challenge because of its outdated mechanical and electrical systems and the abundance of asbestos abatement required in a structure of its age.

A third key challenge was the physical location of both buildings. The Methodist Hospital campus spans two city blocks east to west and five city blocks north to south. Both structures were in the interior of the campus,

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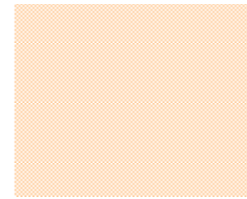
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surrounded by other hospital buildings and a four-story parking garage. How could they be made into a patient-friendly environment if patients couldn't even find them?

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## The Solution

To solve the first challenge, BSA Design architects designed a four-story-high, half-moon-shaped, 19,000-square-foot connector building to span the parking lot between the Noyes building and MPC2.



[Figure 2 - Exterior View from Northeast](#)

What from the exterior looks like the first floor of the building is actually a driveway, allowing emergency vehicles the necessary access and turning room to reach structures in the interior of the Methodist campus. Mechanical systems fill the second floor, while space on the third and fourth floors is home to the administrative and conference space of the Krannert Institute of Cardiology. (Building this part of the project new made it easy to incorporate the modern telecommunications and conferencing systems that were out of reach in Krannert's former 1960s-era quarters.)

To the southeast, the third and fourth floors connect to Krannert's research labs in the Noyes building. To the northwest, the fourth floor also leads into MPC2, where both academic and private practice physician groups have their offices and clinics. This allows physicians and nurses to move easily throughout the cardiovascular center, whether they're doing research, processing paperwork, or seeing patients.

The horizontal floor plates of the Noyes building made it ideal for locating research laboratories along its outside walls and support services along its interior. However, the building's 40-year-old wiring, plumbing, heating, ventilation, and air conditioning systems were anything but perfect for state-of-the-art medical research teams. The first four floors of Noyes, which became a public lobby area and Krannert Institute labs, were gutted. All interior systems were replaced. Significantly, by working after hours and in phases, workers accomplished this without disrupting services to the few other hospital departments with offices in the building.

Architects and engineers with experience in building scientific and medical laboratories were asked to design flexible labs for the Krannert Institute to accommodate changing needs and researchers. The solution: sinks, emergency showers and eyewashes, and service rails with support gases are fixed, and upper and lower casework is hung on wall-mounted rails so storage and countertops can be easily moved and reconfigured.

To finish the integration of the Noyes building into The Clarian Cardiovascular Center, all new windows were installed and the structure was reskinned with the same brick used on the connector building. From street level, the two structures look as one.

On the other side of the connector building, in the MPC2 medical office building, the design team faced two different challenges. They wanted to create a space that would welcome patients and be easy for them to reach and navigate. They also wanted the space to connect the five separate

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academic and private practice cardiology groups that were an integral part of The Clarian Cardiovascular Center concept.

To the west, in front of MPC2, is a four-story parking structure that faces a major interstate highway traveling through downtown Indianapolis. BSA Design created a two-story lobby on the third and fourth floors of the office building, and an entrance to that third floor area from the top floor of the parking garage.

To give The Clarian Cardiovascular Center visibility and identity from the interstate, a rotunda and fabric-covered shelter were constructed atop the garage. Signage on the rotunda identifies the area as the entrance to the cardiovascular center. The fabric structure spans approximately 50 parking spaces, providing close and covered parking for patients visiting their cardiologists, participating in clinical trials, or coming in for tests.



[Figure 3 - Preliminary Exterior View from Northwest](#)

The two-story lobby area of the cardiovascular center is the hub of the facility, with different hallways or spokes on both the third and fourth floors leading to the offices of the Krannert Institute or one of the physician groups. Where possible, doors instead of walls were placed between the offices of separate physician groups, allowing one to use the patient exam rooms of the

other on especially busy days. Exam rooms were fitted out with similar desk locations, storage, and patient dressing areas to make physicians and nurses comfortable moving between spaces.



[Figure 4 - First Floor](#)



[Figure 6 - Third Floor](#)



[Figure 5 - Second Floor](#)



[Figure 7 - Fourth Floor](#)

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## Pulling It All Together

The Clarian Health and BSA project team realized that creating a consolidated cardiovascular center required more than physically connecting separate spaces.

Unified interior finishes also were needed to convey the sense of being in one place, no matter which of the three actual buildings one was in. Additionally, the interiors needed to carry through the patient-friendly focus of the project, while at the same time communicating the world-class caliber of medical services and research provided at the center.

Highlights of the interior finishes include:



[Figure 8 - Third Floor  
Lobby View](#)



[Figure 9 - Fourth  
Floor Lobby View](#)

- A sunburst theme in the two-story lobby, where a central support column was given a decorative skin and coving in the ceiling radiates out from the column across the space in all directions. This helps draw patients' eyes up to the second floor of the lobby, where some of the physician groups and researchers have their offices. A terrazzo floor, wood paneling, glass and stainless steel stairs, and solid surface countertops convey a comfortable yet upscale image. Large windows and skylights fill the two-story space with natural light
- Easy-to-read wayfinding signs on both floors of the lobby and throughout the center make it simple for patients, physicians, nurses or researchers to get to their destination
- A color scheme of soothing blues and earth tones used in the paint, carpeting, wall coverings, and upholstered furniture in the lobby, physician offices, and research administration areas. This presents a calming atmosphere for patients and employees. It also unifies the space by making the transition from one building to the next seamless
- Economical fluorescent lighting in most areas, with double-level lighting available in exam rooms so patients don't have to sit under harsh, glaring lights

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## Lessons Learned

BSA Design and Clarian Health officials believe The Clarian Cardiovascular Center offers a number of lessons for other architect/client teams. Specifically:

- A patient-friendly approach to space planning, design, and interior finishes is crucial for today's competitive healthcare environment. Patients have become discerning consumers in every other part of their lives, and they exercise those same skills when choosing medical care. The hospital that shows it understands and responds to patients' needs will win over its competitors
- Involving all key constituencies throughout the process keeps the project on schedule and results in happier end users. While this project had its normal share of political struggles between different physician groups, administrators, or facilities planners, having every group represented in the decision-making process kept the project moving and the debate constructive
- Involving the contractor at the earliest possible stage also helps keep the project on budget and on schedule. The contractor's scheduling expertise was especially valuable in this case because of the fast-track nature of the project and Clarian Health's desire to use minority construction firms whenever possible. As a result, architects and the general contractor broke The Clarian Cardiovascular Center work into more than 20 separate projects, which all had to be carefully coordinated to keep the overall project on track
- Incorporating flexibility into the design of major projects is essential in today's fast-changing healthcare world. Designers and contractors can't predict how things will change; we only know that they will. Planning for that change-with such features as rail-mounted casework, interchangeable patient exam rooms, etc.-is part of providing the best service to our clients

## Conclusion

In a search for ever-greater operational and financial efficiencies, American hospitals will continue to merge, partner, or consolidate services in the coming years. At the same time, discriminating patients will continue to demand medical facilities that put their needs first, not the needs of healthcare workers or administrators.

As The Clarian Cardiovascular Center shows, healthcare design teams exercising creative problem-solving skills and sensitive awareness of patients' needs can produce facilities that accomplish both things. Today, and for the foreseeable future, healthcare architects must work to find the right balance between these two key trends in our industry and our society.

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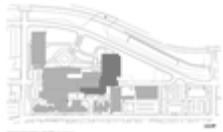
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[Figure 1](#)



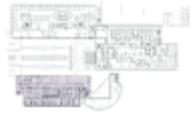
[Figure 2](#)



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[Figure 8](#)



[Figure 9](#)

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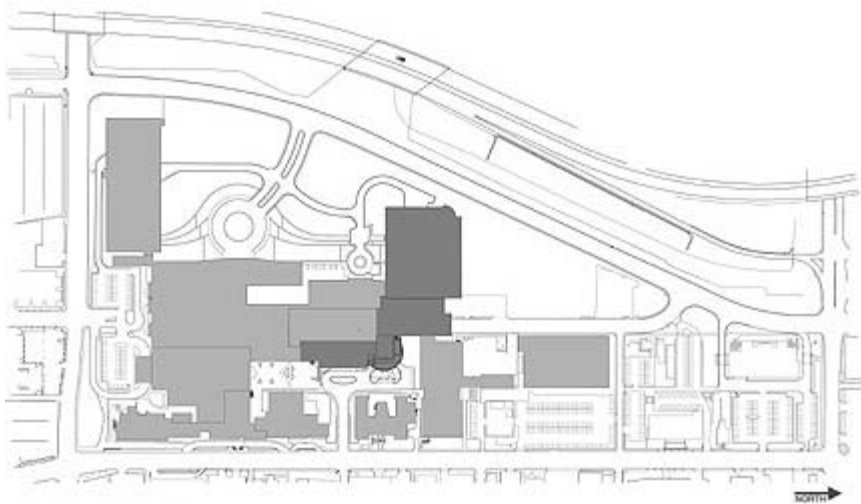
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Cardiovascular Consultation - 1 May 2000 (updated March 2001)

Figure 1: Site Plan

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Cardiovascular Consolidation - 18 January 2000

Figure 2 - Exterior View from Northeast

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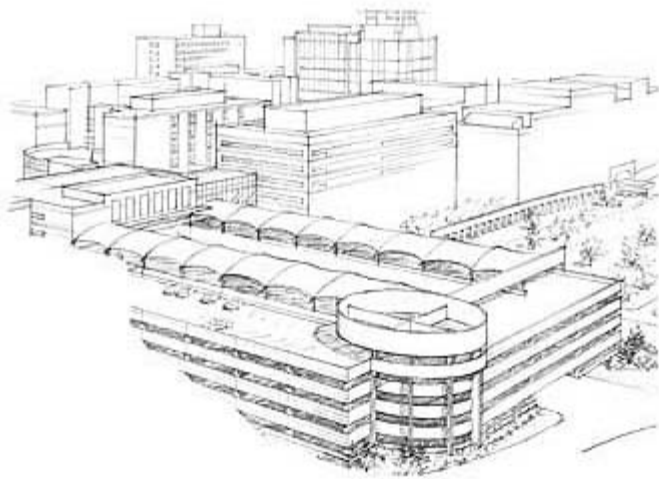
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Cardiovascular Consolidation - 9 February 2000

Figure 3 - Preliminary Exterior View from Northwest

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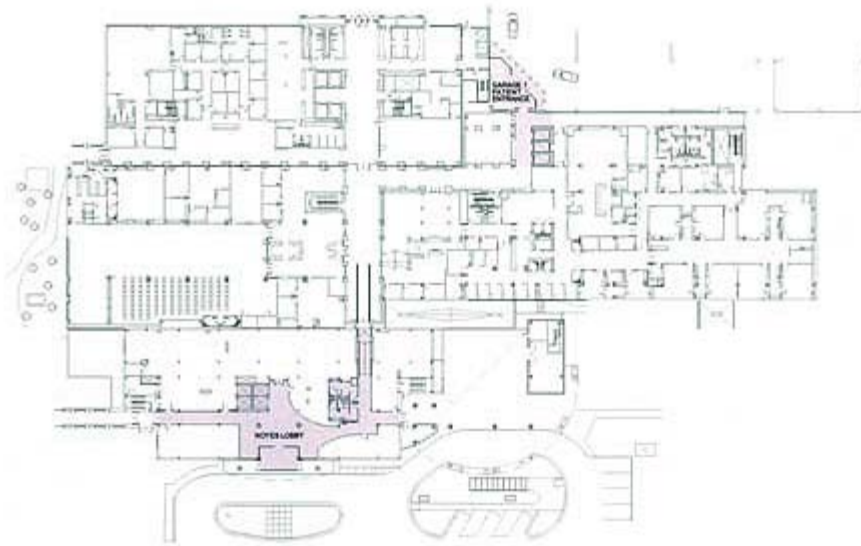


Figure 4 - First Floor



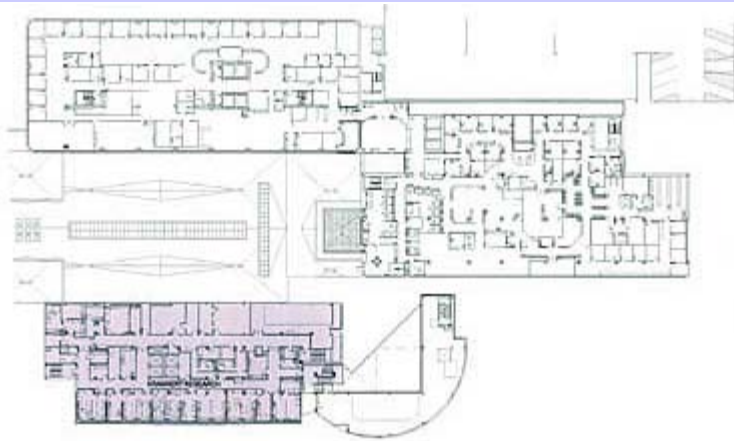
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Cardiovascular Consolidation - 1 May 2009 - 10:04:28 AM EDT

Figure 5 - Second Floor

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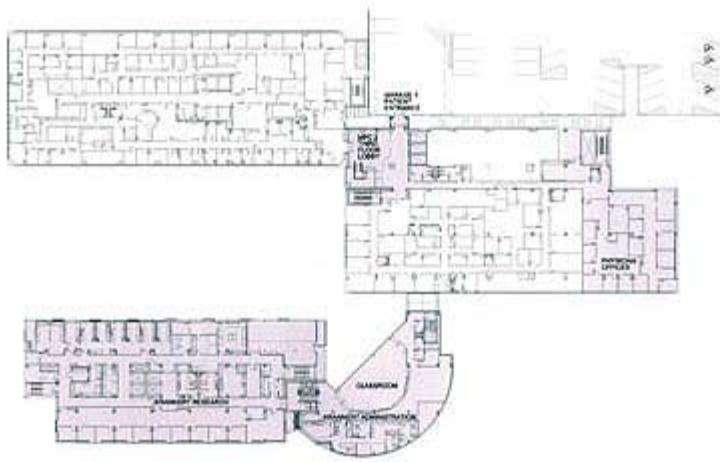
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Cardiovascular Consolidation - 1 May 2000 - Model (18 March 2001)

Figure 6 - Third Floor

Third Floor

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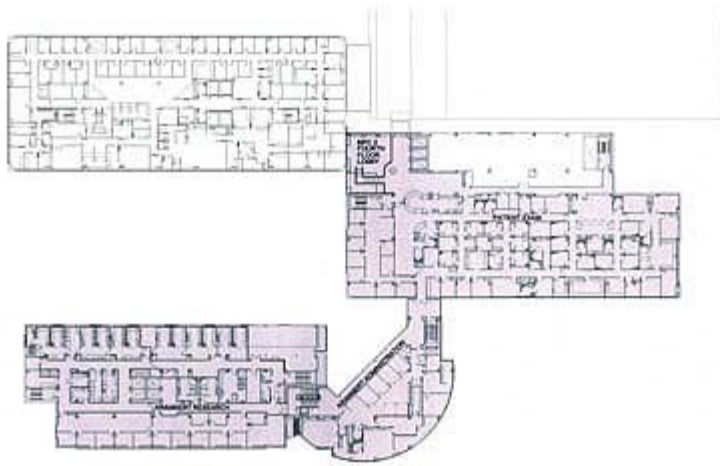
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Cardiovascular Consultation - 1 May 2000 - Volume 28 Number 1

Figure 7 - Fourth Floor



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Figure 8 - Third Floor Lobby View

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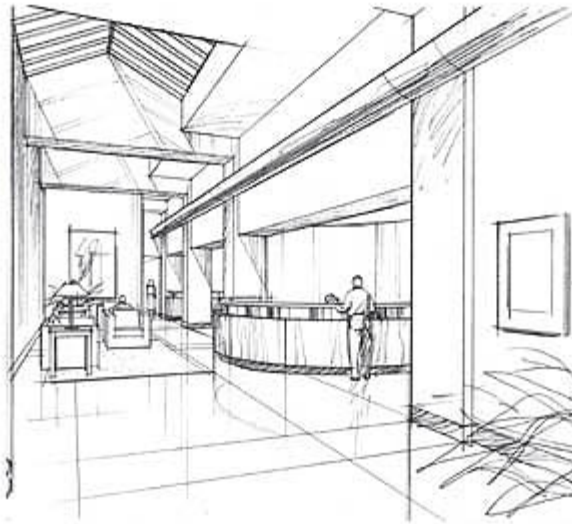
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Cardiovascular Consolidation - 1 May 2000

Figure 9- Fourth Floor Lobby View

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