

MEMORIAL SLOAN-KETTERING CANCER CENTER

SURGICAL DAY
HOSPITAL &
CENTER FOR
IMAGE GUIDED
INTERVENTION

Healthcare Design for Evolving Science, Medicine & Technology

JEFFREY BERMAN | ARCHITECT

Surgical Day Hospital & Center for Image Guided Intervention

As part of a continuing commitment to provide its patients with the latest medical and technological advances in cancer treatment, Memorial Sloan-Kettering Cancer Center (MSKCC) has created a new cancer treatment center where minimally invasive surgery, interventional radiology, interventional endoscopy and radiation oncology can be practiced together. The mission of the new Center is to study and evaluate novel and evolving technologies and, ultimately, to translate them into practical clinical applications. This minimally invasive, multidisciplinary and image guided approach promises to decrease costs, reduce operating room time, shorten hospital stays, minimize risks and complications, improve patient outcomes and treat diseases resistant to traditional therapies.

The creation of a facility of this complexity requires the services of a firm with a proven track record in the design and construction of facilities that house highly advanced medical technology. For Memorial Sloan-Kettering Cancer Center, the clear choice was Jeffrey Berman Architect (JBA). Over the past 15 years, the firm has worked with Memorial Sloan-Kettering on numerous projects including an expansion of the Radiology Department to support an interventional therapy program and greatly expanded diagnostic capabilities both on and off campus; the development of a prototype OR for their MIS program; the design of their integrated intra-operative MRI-OR; and the construction of the animal research components for these programs in their Zucker Laboratory facility.

This 50,000 square foot \$100,000,000 project contains the Surgical Day Hospital and the Center for Image Guided Interventional & Minimally Invasive Therapy. From the Reception and Waiting Areas to the Private Pre- and Post-Op Rooms which feature private rooms with doors and quiet spaces that provide opportunities for private encounters and consultation, the emphasis on the quality of the whole patient experience is immediately apparent.

The Surgical Day Hospital consists of seven OR's and support systems that allow it to function as an independent outpatient facility. Utilizing state-of-the-art interventional imaging and therapeutic tools, the center can support interventional endoscopic and minimally invasive surgical options as well as image guided procedures with real time guidance and feedback. By working closely with both the Radiology and Peri-operative Departments, Jeffrey Berman Architect was also able to design a common workflow and patient experience that met the needs of the surgical and interventional program without disrupting their abilities to work alone or in composite procedures. Consensus building, broad cooperation and collaboration across subspecialty boundaries was key to the successful design of the Center and is vital to its efficient operation.

All MSKCC OR's have implemented an OR integration and image management system with standardized systems, controls and common menus and protocols compatible with all rooms and procedures. This system creates a common experience for staff, regardless of their location, and allows them to move easily from modality to modality or from the OR to an interventional room without additional training.

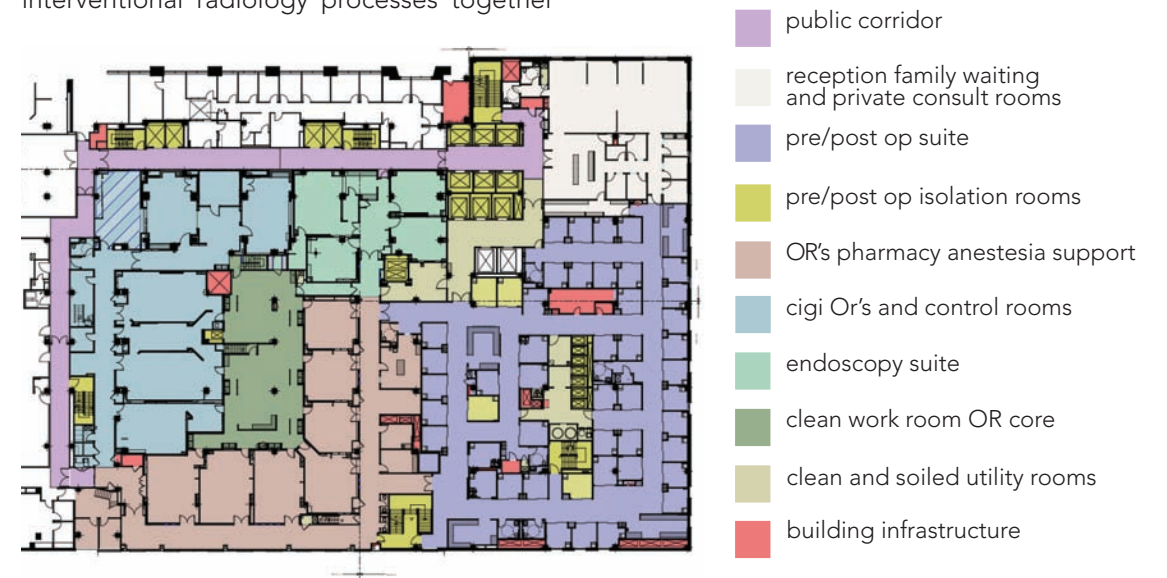
The design of a Hybrid OR with essential equipment for interventional and combined procedures poses particular challenges for the architect. The layouts and the room sizes must be designed to maintain sterile fields and work areas while also accommodating the equipment infrastructure. GE Healthcare, MSKCC and JBA worked collaboratively to transform the Department's standard imaging and diagnostic equipment so that it could be used in sterile OR interventional rooms. Jeffrey Berman Architect added infrastructure and integrated the components where required to make these new work environments compatible with the MSKCC standard OR protocols.

The creation of the Surgical Day Hospital and the Center for Image Guided Intervention was possible because Memorial Sloan Kettering Cancer Center evolved together with technology. As new technologies became available, the institution was able to test and integrate them into their general practice. By bringing surgeons, endoscopy practice and interventional radiology processes together

in sterile OR environments, MSKCC provides an opportunity for these disciplines to work collaboratively to develop new tools and procedures in each of their practice areas as well as composite procedures which transcend the boundaries of a single specialty and allow treatments that require collaboration of multiple disciplines in a specialized environment.

The ability to join image guided intervention and minimally invasive surgical treatments with other cancer treatments puts Memorial Sloan-Kettering Cancer Center in a unique position to develop ground-breaking minimally invasive cancer therapies which are faster, less costly and safer than ever before.

Jeffrey Berman Architect is proud to have had the opportunity to design the environment that makes these outcomes possible.



ENTRANCE TO RECEPTION WAITING AREA

Private Consult/Interview Rooms
Waiting Area
Entrance to Reception



The entrance to this facility was placed close to the front door of the hospital. It contains quiet spaces for waiting and private rooms for consultations, meetings and interviews between patients and staff.



Entrance to Reception Area



Waiting Area

PRE/POST OP PATIENT ROOMS

Pre/Post Op Private Patient Rooms



The Pre and Post Op area contains private rooms with views and abundant natural light for each patient. The area was planned to minimize patient movement during a visit and provide privacy for discussions between patients and staff.



Pre/Post Op Private Patient Rooms



PRE/POST OP CLINICIANS STATION OR CLEAN CORE AND WORK ROOM



In this ambulatory care setting where patients walk to their procedures often accompanied by family members in the Pre and Post Op area, special attention was given to the design of work areas that provide quiet and privacy for the staff as well as opportunities for oversight and access by the patient.



Pre/Post Op Clinicians Station



OR Clean Core and Work Room

ANGIO CT 3T MRI

3.0T Interventional MRI OR

1.5T Wide Bore
Interventional
MRI OR



Diagnostic and interventional systems were integrated into standard MSKCC OR environments with common controls and information displays.

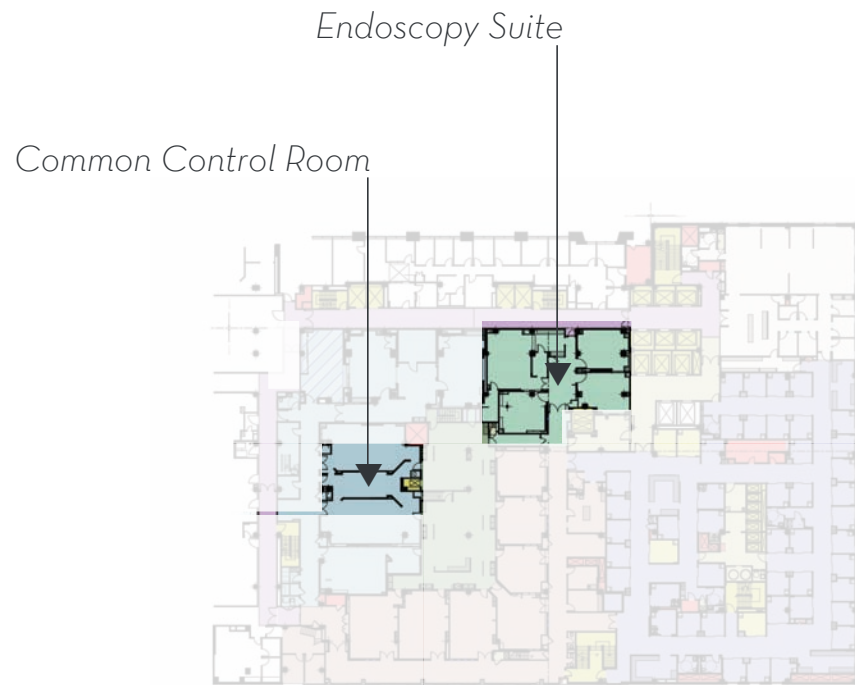


Angio CT



3.0T Interventional MRI OR

CONTROL ROOM ENDOSCOPY ROOM



Common control areas are planned for consistent interface and control orientations. Similar rooms are always planned to minimize differences and reduce errors.



View to Angio/CT OR2 from Common Control Room



Endoscopy Room

CYTOSCOPY OR TYPICAL MIS/GENERAL OR

7 OR's including MIS/ General OR
and Cytoscopy OR



OR's are designed to a MSKCC common standard. Equipment is always integrated within the standard work environments and interfaces remain consistent throughout 38 OR's on two floors.



Cytoscopy OR



Typical MIS/General OR

PET/CT HYBRID OR



PET/CT Hybrid OR



PET/CT Hybrid OR

The OR sterile environment and systems are adapted to provide OR interventional support and the standard working process for staff for diagnostic equipment such as the latest model GE PET/CT and MR.

JEFFREY BERMAN | ARCHITECT SELECTED CLIENTS

Animal Medical Center, New York
Cardiac Imaging Group
Columbia University
Concorde Medical Group
Doctors' Hospital of Staten Island
Elmhurst Hospital
General Electric
Kips Bay Endoscopy Center
Long Island College Hospital
Long Island Digestive Disease Center
Memorial Sloan-Kettering Cancer Center
Montefiore Medical Center
NYC Health and Hospitals Corporation
New York Methodist Hospital
New York-Presbyterian Hospital
Our Lady of Mercy Medical Center
Saint Claire's Hospital
Saint Vincent's Catholic Medical Centers of New York
Staten Island University Hospital
SUNY Downstate Medical Center
Westchester Medical Center
Veterans Administration Health Care System

JEFFREY BERMAN, AIA, ACHA

PRINCIPAL



Jeffrey Berman has built a firm based on the design of specialized and technically complex projects for a broad range of governmental, institutional, and private clients.

Since founding the firm in 1988, Mr. Berman has designed projects for many clients throughout the New York City area, including the American Museum of Natural History, Memorial Sloan-Kettering Cancer Center, New York Presbyterian Hospital, Concorde Medical Group, The Mount Sinai Medical Center, SUNY Downstate Medical Center, Liberty Science Center, Wildlife Conservation Society at the Bronx Zoo, National Organization for Industrial Trade Unions, and General Electric Medical Systems. The projects for these facilities include the design of research, medical, office and exhibition areas, as well as facility and space planning services.

Mr. Berman's practice of architecture specializes in the design, planning and programming of facilities requiring technologically advanced systems and equipment, including state-of-the-art medical diagnostic imaging centers, operating suites, data processing centers, and office renovations with special environmental control systems, as well as communications and security needs.

As a healthcare design and facilities planning specialist and one of the few Board Certified members of the American College of Healthcare Architects, Mr. Berman is involved with the

design of major renovation and modernization programs for several area hospitals. His work at The Long Island College Hospital involved the master planning, redesign and rebuilding of their medical campus. This extensive modernization program included the design of new construction, complete gut renovations and the design of newly acquired properties. This program included the renovation of the Psychiatric Emergency Department and Psychiatric Department's Offices, new parking facilities and major departmental re-sitting.

A testament to his longstanding working relationship with the Memorial Sloan-Kettering Cancer Center, Mr. Berman was selected to work on the Master Planning and design of Memorial Sloan-Kettering Cancer Center's Radiology Department, Radiation Oncology Department and Nuclear Medicine Department. His work has also included long-term strategic planning and specialty technology consulting.

Mr. Berman's work at the American Museum of Natural History includes the museum's permanent exhibit, entitled *The Hall of Human Biology and Evolution*, two molecular biology research facilities, and the renovation of 200,000 square feet of gallery space to include air conditioning and climate control systems. He has also designed state of the art storage facilities for the Entomology and Anthropology Departments at the Museum; and prepared feasibility and planning studies for renovations and expansions to the Anthropology Department's

Collection Management facilities, Archives, and Conservation Laboratories. Recently completed departmental renovations include the Ornithology, Ichthyology, Mammalogy, Construction and Exhibition Departments as well as the Anthropology Department's Collection Management facilities, Archives, and Conservation Laboratories.

Most recently, Mr. Berman oversaw the master planning and design of a state-of-the-art, 50,000 square-foot new facility that will join minimally invasive surgery, interventional radiology, Endoscopy and radiation oncology into one cancer treatment center. Currently, he is designing the next group of OR's for MSKCC as well as the renovation and expansion of the LEED Silver Certified quarantine building for the Wildlife Conservation Society at the Bronx Zoo.

Mr. Berman is a board-certified healthcare specialist, certified by the American College of Healthcare Architects to which he was inducted in 2000 as a founding member. He is currently a member of the New York State Department of Health, the Office of Health Safety Management's Construction Standards Advisory Group, and a past chairman of the Health Facilities Committee of the American Institute of Architects, New York Chapter.

Mr. Berman is a licensed Architect in New York, New Jersey, Connecticut, Pennsylvania, Massachusetts, Vermont, and Missouri. He also holds NCARB certification. He received his degree from the Massachusetts Institute of Technology in 1980.

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