Envisioned as a place of discovery and healing, the Hess Center for Science and Medicine (CSM) is shaped by its translational mission and its urban context. Located in Upper Manhattan, the 420,000 sf facility integrates clinical and basic science research with an ambulatory care center and imaging facility. The building unites scientists, clinicians and educators in a unique and collaborative way.

The primary objective was to create an environment that would be functional and inspiring for researchers and clinicians as well as gracious and calming for the patients who motivate and benefit from their work.
Located on the edge of Spanish Harlem and the Upper East Side, the Mount Sinai Campus is situated on the fault line between some of the poorest and wealthiest New Yorkers. The campus extends from 98th to 102nd Street and is bracketed by Central Park to the west and low-income housing projects along Madison Avenue to the east.

While Mount Sinai’s medium-scale brick campus is dominated by a 31-story modern research tower of cor-ten steel. It is the buff-masonry and heavy, punched-window aesthetic of I.M. Pei’s hospital pavilion that has influenced subsequent Sinai buildings and established, in the Institution’s eyes, “a campus style.” The design team responded to the mixed nature of the neighborhood by creating a contextual building that comfortably mediates between the two different worlds that meet at its doorstep.

Mount Sinai’s request that the CSM be an integrated campus building with a sense of “quiet dignity” and free of ostentation, led the design team to a process that distilled the building to its most basic and essential nature.
CAMPUS COMPATIBILITY

Within its urban campus context, the Hess Center sits comfortably among its institutional and residential neighbors. The building is a respectful response to its client’s wishes for a “quiet and dignified” building – using the prevalent campus brick and punch-window aesthetic. However, its openness at the ground floor is a marked departure from campus precedents. This transparency and engaging attitude towards the street better reflects the institution’s place in this economically and socially challenged community.

A new residential tower was built to finance the Hess Center and the two buildings were developed in an integrated fashion. By locating much of the Center’s MEP equipment in the base of the tower, the Center minimized expensive excavation and maintained the context’s height datum. The tower benefitted by having all units raised above the same datum, providing unobstructed views of the City and Central Park.
Viewing the building as the latest evolution of the campus language, the exterior envelope is a masonry solid that articulates both the 2-story sectional organization and plan modulations of the interior. The rhythm established in the window placement is an outward expression of the rigorous planning modules established for the laboratories, exam rooms and offices. In detailing the exterior, the vertical stacked brick bond serves to reinforce the building geometries and the system of pre-cast panels with half-brick facing responds to concerns of cost and schedule.
Street level in context – The Hess Center engages the street with a grand public room on Madison Avenue and expands the public realm.
“Cancer today is all about translation: the ability to go from bench to bedside and back again is truly extraordinary. Our clinical setup provides multi-disciplinary care right in the building: radiation, infusion, imaging, and genomics will be there. We can share ideas with the cardiovascular institute, imaging, neuroscience, genomics and child health – and be near the patients. This is spectacular.”

Steven Burakoff, MD and Director of The Tisch Cancer Institute
A MULTI-DISCIPLINARY APPROACH

Recognizing that many of tomorrow's important scientific breakthroughs lie along and across the boundaries of scientific disciplines, the new 420,000-square-foot, eleven-story CSM contains six different, but thematically-linked, programs:

1. The Tisch Cancer Institute, which consists of specialty outpatient care and clinical research space for clinical trials, outcomes research and policy studies. Radiation therapy is supported by two linear accelerators.

2. The Friedman Brain Institute is dedicated to neurological disease research, head, neck, and spinal cord injury.

3. The Cardiovascular Research Institute, striving to expand the human knowledge of cardiovascular pathology and eradicate the spread of cardiovascular disease;

4. Genomics and Multiscale Biology which is at the forefront of large-scale generation and integration of biological data.

5. The Child Health and Development Institute will explore the unique biology of infants, children, and adolescents.

6. The Center for Translational and Molecular Imaging, which incorporates both hot and cold diagnostic imaging including MRI, PET and SPECT for patients and research test subjects.

The co-location of clinical and research space within the CSM facilitates intermingling of disciplines and the “bench-to-bedside” concept and aims to accelerate the advancements that will most benefit patients.
A COLLABORATIVE ENVIRONMENT

The bench-to-bedside translational model is embedded in the overall section of the Hess Center.

The building is organized vertically into a series of two-story “neighborhoods.” In order to foster interaction and collaboration between these neighborhoods and their diverse collection of researchers, clinicians and educators, the design team created a vertical “interaction network” of formal and informal spaces. The network is composed of three parts:

- Atrium (multi-purpose lobby with café, conference/education center and patient waiting areas)
- Interaction Spine (convenience stair with adjacent lounges, pantries and conference rooms)
- Rooftop Pavilion and Rooftop Garden (potential future phase)
PATIENT-CENTERED CARE

As a continuation of the translational model at the Center for Science & Medicine, Both The Tisch Cancer Institute and the Imaging Center and Radiation Oncology Center are co-located within the Hess Center.

The Tisch Cancer Institute occupies the 3rd and 4th floors and provides an outpatient facility where the latest oncology treatments can be applied and evaluated. Clinical programs reside alongside a chemotherapy pharmacy that will produce both conventional and experimental products. The facility provides a research continuum that connects the laboratory to the bedside, which is the sin qua non of translational research.

The institute comprises 48 exam rooms and 54 infusion bays. The large waiting areas overlooking the atrium space provide a comfortable environment for the patients, and easy patient flow into the exam and infusion suites.

Located in the subcellar, The Radiation Oncology suite, with two linear accelerator vaults and adjacent CT Simulator provides a cutting-edge outpatient treatment experience.

By incorporating the full spectrum of radiation therapy components in direct adjacency the patient experience is streamlined, wait time is reduced, and medical staff gain workplace efficiencies.

The linear accelerator vaults features LED chromatography ceiling panels that are customizable to each patient’s preferences for color therapy during treatment session.
Nursing Touch-Down Area

Linac Control Corridor

Patient Check-In Area

PET / CT room in Imaging Center
While the design creates ideal conditions for both clinical and research activities, most importantly, it emphasizes the connection between the two. By highlighting the ties between the patients and the researchers exploring cures to their diseases, the Hess Center creates a profound sense of immediacy.
FLEXIBLE RESEARCH FLOORS

Linear Equipment Room

Principal Investigator Office

View Into Lab

Lab Space
CONFERENC E & EDUCATION CENTER

Easily accessed from the Atrium, the second floor Conference and Education Center will be a hub of learning and interaction. The facility will be suitable for continuing education for staff and health-related community outreach as well as clinical and research-related seminars. From its generous pre-function space overlooking the building entry, users will be able to access two large re-configurable seminar rooms and a 144-seat auditorium that incorporates facilities for distance learning.
The CSM will be the first sustainable and LEED certified building on Mount Sinai's campus. The building, targeting LEED Silver Certification, has already managed to impact the energy efficiency of the overall campus. The original plans for the CSM to have a stand-alone chiller plant (chillers, pumps, cooling towers, etc.) were reconsidered following a comprehensive analysis of the existing campus systems. The MEP team’s analysis revealed that for similar cost to a stand-alone CSM plant, the existing campus chiller plant (chillers and pumps only) could be replaced. The new chiller plant is now much more efficient and results in energy savings for the entire campus. Another noteworthy strategy involves the use of radiant heating and cooling in the four-story atrium - allowing the CSM’s signature space to be conditioned in an efficient manner.

With this building, Mount Sinai will strive to be a community leader and respectful public steward by minimizing pollution, emissions, and its own carbon footprint, while providing a soothing and healing environment with enhanced indoor air quality, better temperature control and lighting for researchers and patients.

The design of the CSM is targeting LEED Silver through the following sustainable features and strategies:

**Site**
- Compact Site
- Brownfield Site
- Access to Mass Transit
- No New Parking
- Heat Island Effect, Roof
- Heat Island Effect, Non-Roof
- Water-Efficient Landscaping

**Architectural**
- Exterior Wall Efficiency
- Green-label Carpet
- Regional Materials
- High-Recycled Content Materials
- Low-Emitting Materials

**Systems**
- Upgrade to Central Plant
- Optimized Energy Performance
- Radiant Heating/Cooling of Atrium Slabs
- Displacement Air Heating/Cooling
- Light from Skylight
- Occupancy Sensors
- Water Use Reduction, 20%
- Improved Trending/ Tracking through BMS
- Use of VAV System
- Automated Fume Hood Sash Closure System
- Heat Recovery System for Laboratory Spaces
- Air Side Economizers for Non-Laboratory Spaces

**Methodologies**
- Construction Waste Management
- LEED Educational Signs
- Certified Wood
- Recycling Program
- Commissioning, Measurement and Verification
“The Hess Center will serve as the focal point of Mount Sinai’s research and clinical programs. The combination of world-class faculty and state-of-the-art equipment and facilities will expand our ability to understand and treat the most challenging medical problems in areas such as cancer, heart disease, and brain and nervous system disorders.”

Kenneth L. Davis, MD, President and Chief Executive Officer of The Mount Sinai Medical Center