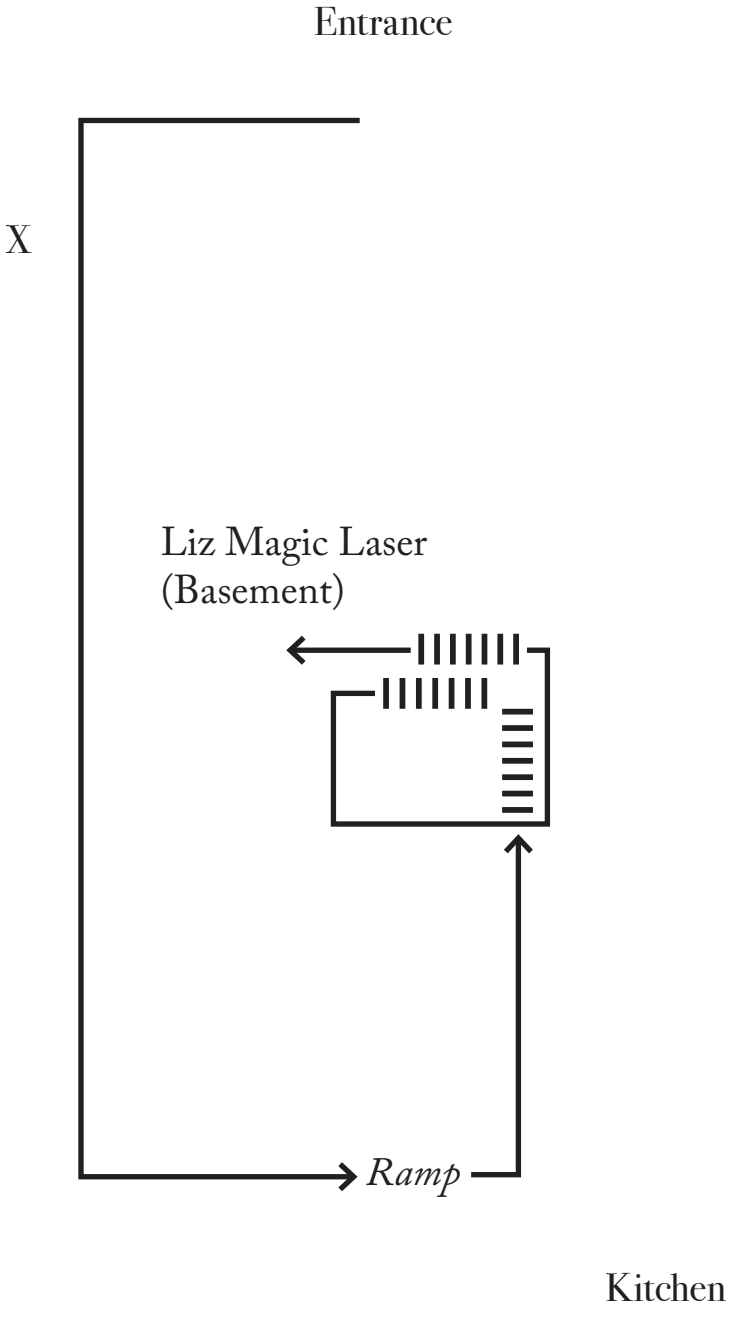
LIZ MAGIC LASER

November 15–December 1

In *Mine*, a video installation from 2009, Liz Magic Laser has a surgeon, not your regular human type surgeon but a da Vinci® Surgical System,* perform an autopsy on her purse. It is Lockheed-Martin-Abstract-Expressionism. It is that beautiful thing: a piece of art that causes some trouble, puts the subconscious hard to work, and provides morose delights—delights Freud could go half way up his flag pole about. For instance? Well, maybe it's better to not give it all away, but to say, very plainly, that to be pulled into moral and existential desolation by a piece of art is dearer to me than ten thousand ideas about why.

In dark times. Will there also be Funny Pictures?
Yes, there will also be Funny Pictures.
About dark times.

Dark times? Anxieties? What kind of anxieties? Anxieties about the social construction and deconstruction of privacy, and about the increasing corporate ownership of privacy, and about the effects such ownership may have on the nature of Western democracy. Anxieties about the annexation of interiority, and ubiquitous surveillance—not only State run surveillance programs, but our own relentless access to others—and theirs to us, and our ability to immolate ourselves, however tediously with our household technologies. Anxieties about the domestication of Un-manned Aerial Vehicles, and the moral and political consequences of technologies that reconfigure our sense of vision and monkey with our dimensional sense of self. Anxieties about America's avowed commitment to human rights being undercut by our technological advancement. Anxieties about the body, transformed by science and influenced by robotics. Uncanny anxieties. Torture anxieties. Economic anxieties. Mordant anxieties.



Liz Magic Laser (her name from birth) was born in 1981. She lives in New York City and is a graduate of the Whitney Museum Independent Study Program and Columbia University's MFA program. *Mine* was first shown in a hollow office building in downtown Manhattan as part of the Lower Manhattan Cultural Council's residency program, which is where I first encountered it.

*"HISTORY OF INTUITIVE SURGICAL®,"
LAST MODIFIED NOVEMBER 11, 2013,
HTTP://WWW.INTUITIVESURGICAL.COM/COMPANY/HISTORY

Hospital staff, patients, investors, in fact, most people who learn anything about da Vinci Surgery usually ask: where did the name come from and where did the technology originate?

The name "da Vinci" stems for the 15th century inventor, painter, philosopher and Renaissance man: da Vinci is widely known for advancing the study of human anatomy. He participated in autopsies, produced many extremely detailed anatomical drawings and planned a comprehensive work of human and comparative anatomy.

His study of human anatomy eventually led to the design of the first known robot in history. This design, which has come to be known as "Leonardo's Robot," was probably made around the year 1495 but was rediscovered in the 1950s. da Vinci was intrigued by mechanics and automation. He developed a number of mannequins including a mechanical knight.

The story of telerobotic surgery involves the union of two very different technologies and the emergence of a completely new approach to minimally-invasive surgery. The first of these technologies emerged in the 1940s and was called "telemanipulation" or "telepresence"—the sensation that you are in one location, while being in another.

In Robert Heinlein's 1942 science fiction short story, entitled *Waldo*, the lead character, Waldo Farthingwaite-Jones, was born frail, weak and unable to lift his own body weight. Heinlein describes a glove and harness device that allowed Waldo to control a powerful mechanical arm by simply moving his hand and fingers.

About eight or nine years after Heinlein's publication, these kinds of remote manipulators—popularly known as "Waldoes"—were developed in the real world. Using cable and linkages, they were used to move and manipulate hazardous materials and enter hazardous environments inhospitable to humans. The first telepresence robotic arm was developed in the 1950s for the same purpose.

Raymond Goertz, an early pioneer in the field of robotics, developed the first master/slave manipulator to handle radioactive material while working for the Atomic Energy Commission at Argonne National Laboratory.

Over time, this master/slave technology has been used in other hazardous environments such as the bottom of the ocean or in outer space. Significant progress in telepresence and robotic activity was achieved in the 1980s because of major advancements in microelectronics and computing.

At the same time, we were seeing significant advancement in the medical arena. The first laparoscopy (minimally invasive surgery) was also being developed and conducted. Specifically, an endoscope-like device (long, thin tube with a camera at the end) was developed and the emergence of the Charge Coupled Device—known as a CCD—needed for digital imaging, video electronics and display technologies began to revolutionize the field of surgery and led to laparoscopic techniques for minimally invasive surgery. This culmination of technological advancements in surgery led to the first laparoscopic cholecystectomy (surgery to remove the gallbladder) in 1987 by French physician Dr. Philippe Mouret.

Soon after this landmark surgery, laparoscopic technology and techniques boomed in the late 1980s and continued to gain popularity into the 1990s for simple surgical procedures. However, the uses for laparoscopic surgery began to stall in the 1990s.

Robotic presence was beginning to flourish at the same time laparoscopy was experiencing limitations. Many institutions recognized a potential opportunity to blend minimally invasive surgery (MIS) with robotics to overcome the limitations of laparoscopic surgery. The goal was to marry telerobotic technology with minimally invasive surgical techniques—a pairing that would ultimately influence the development of the da Vinci Surgical System.

In the late 1980s DARPA (Defense Advanced Research Projects Agency) funded several institutions to research the possibility of a remote surgery program targeted toward battlefield triage. Similar to the robotic drones available today and used in foreign conflicts, the idea was to replace human medics with robots and minimize human casualties. It turns out the idea of a robotic medic was flawed due to its vulnerability to tracking devices and changing policies about how and where wounded soldiers are treated.

However, as a result of the funding from DARPA, significant advancements were made toward telepresence at many institutions. For example, SRI was responsible for developing a "telepresence surgery system." The preliminary schematic drawing of this system eventually influenced the da Vinci design. Other notable achievements were the IBM-developed remote center technology and the MIT-developed cable-driven technology for low-friction manipulators which are also used in today's da Vinci System.

In 1995, Intuitive Surgical® was founded and secured licenses on the technologies developed by several institutions. Intuitive started the long process of turning ideas and innovation into a commercially available medical device.

In 1999, the first da Vinci System was introduced to market and in July 2000 the US FDA cleared da Vinci for laparoscopic surgery.

The first da Vinci System focused on overcoming the limitations of traditional laparoscopy by giving surgeons 3D vision inside the patient's body, EndoWrist® Instrumentation—the surgical instruments bend and rotate far beyond the abilities of the human hand, [SIC] and Intuitive® motion where the instruments move in the same direction as the surgeons [SIC] hands which [SIC] is [SIC] identical to the open surgery approach and the opposite of the laparoscopic approach which surgeons often describe as counter-intuitive. [SIC]

The original da Vinci System had very simple instruments that were not procedure-specific. In 2003, Intuitive Surgical offered the first major upgrade to the da Vinci System by offering a 4th instrument arm. This allows a surgeon to control their own retraction and move control from arm to arm.

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Curated by Robert Snowden

The exhibition would not be possible without our members, volunteers, The James F. & Marion L. Miller Foundation, The Andy Warhol Foundation for the Visual Arts, The Martin Family, The Henry Lea Hillman Jr. Foundation, Meyer Memorial Trust, Work for Art, The Foundation for Contemporary Arts, Vista Capital, Umpqua Private Bank, and Stephanie Snyder.