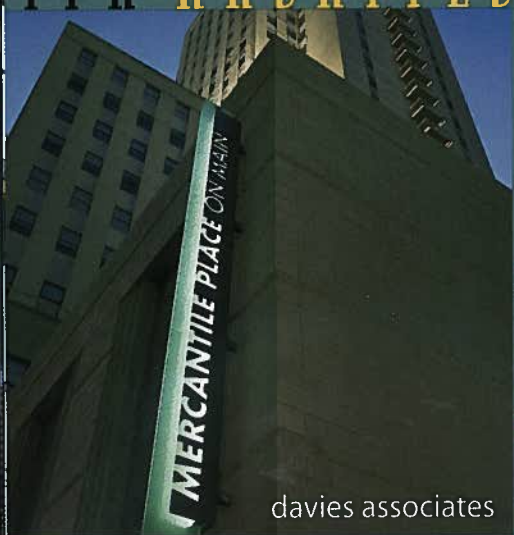


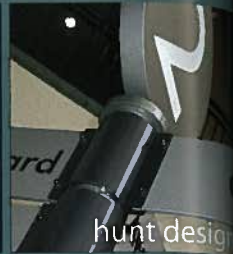
# TFN ARCHITECTURAL SIGNAGE



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## designer spotlight

name: Harry Mark  
studio: RSM Design  
where: San Clemente, CA



Harry Mark, RSM Design principal, brings the best of both worlds to the Studio: an impressive background with some of the world's leading architectural firms and a hands-on knowledge of international architecture and graphic design. Harry is involved in the development of all projects from conceptualization through fabrication. Learn more about Harry and the rest of his studio at [www.rsmdesign.net](http://www.rsmdesign.net).

“We have worked with TFN for years and their quality and attention to detail is fantastic. But it is TFN's unique commitment to designers like ourselves that consistently keeps them on our recommended fabricators list.”

- Harry Mark, Redmond Schwartz Mark Design

The terrorist attacks of September 11, 2001 endure as indelible visions of chaos, destruction, and unimaginable loss. About 2 billion people—one-third of the world's population—watched the day's tragedies as they unfolded live on television and online.

While the world watched in the days and weeks afterward, two architects in New York City began to draw.

“It was my way of getting it out, what was seared in my memory,” says Frederic Schwartz, principal of Frederic Schwartz Architects and longtime SoHo resident. He began by drawing the collapsing towers and over time, “I started to redraw the skyline. I started to draw what should happen,” he says.

A couple of miles away in his home on the Lower East Side, Michael Arad, two years out of architecture school and employed at the New York City Housing Authority, began to sketch “a pair of twin voids tearing open the surface of the Hudson River. This inexplicable, enigmatic image seemed to capture a sense of rupture, loss, and persistent absence and stayed in my imagination.”

A decade of consequences and contemplation have passed and those early drawings by Schwartz and Arad have transformed from paper musings into the two most profound memorials to the victims of September 11th: Arad's National September 11 Memorial at the World Trade Center and, across the Hudson River, Schwartz' New Jersey 9/11 Memorial in Liberty State Park. Both were dedicated and opened to the public on the 10th anniversary of 9/11.

The purpose of modern memorials is two-fold: to commemorate the grief of victims' families today and to convey the gravity of their loss to future generations. It is a daunting assignment to design for both of these intimate and immortal roles, and even more challenging to do so within the vortex of political, social, and cultural distress unleashed by these attacks.

Both Schwartz and Arad entered this vortex through public competitions. For the 2003 WTC site memorial competition sponsored by the Lower Manhattan Development Corporation, Arad submitted his concept for the twin voids, named *Reflecting Absence*. After six weeks of deliberations by the 13-member jury and some modifications to the concept, his design was chosen as the winner among the eight finalists.

In 2004, Frederic Schwartz Architects submitted a memorial design entitled *Empty Sky* to the New Jersey 9/11 Memorial Foundation public call for entries. The concept, a pair of steel walls framing the view of where the towers once stood, was unanimously selected by the foundation's Family & Survivor Committee. →

## REMEMBERING

# 9/11

Two architects, two visions, and two memorials commemorate loss and foster healing. BY LESLIE WOLKE

Leslie Wolke, SEGd (leslie.wolke@gmail.com) is a consultant who specializes in wayfinding technology and interactive donor recognition systems.



# Intimacy and Immortality

Arad's vision honors individual loss and creates a "latticework of human meaning."



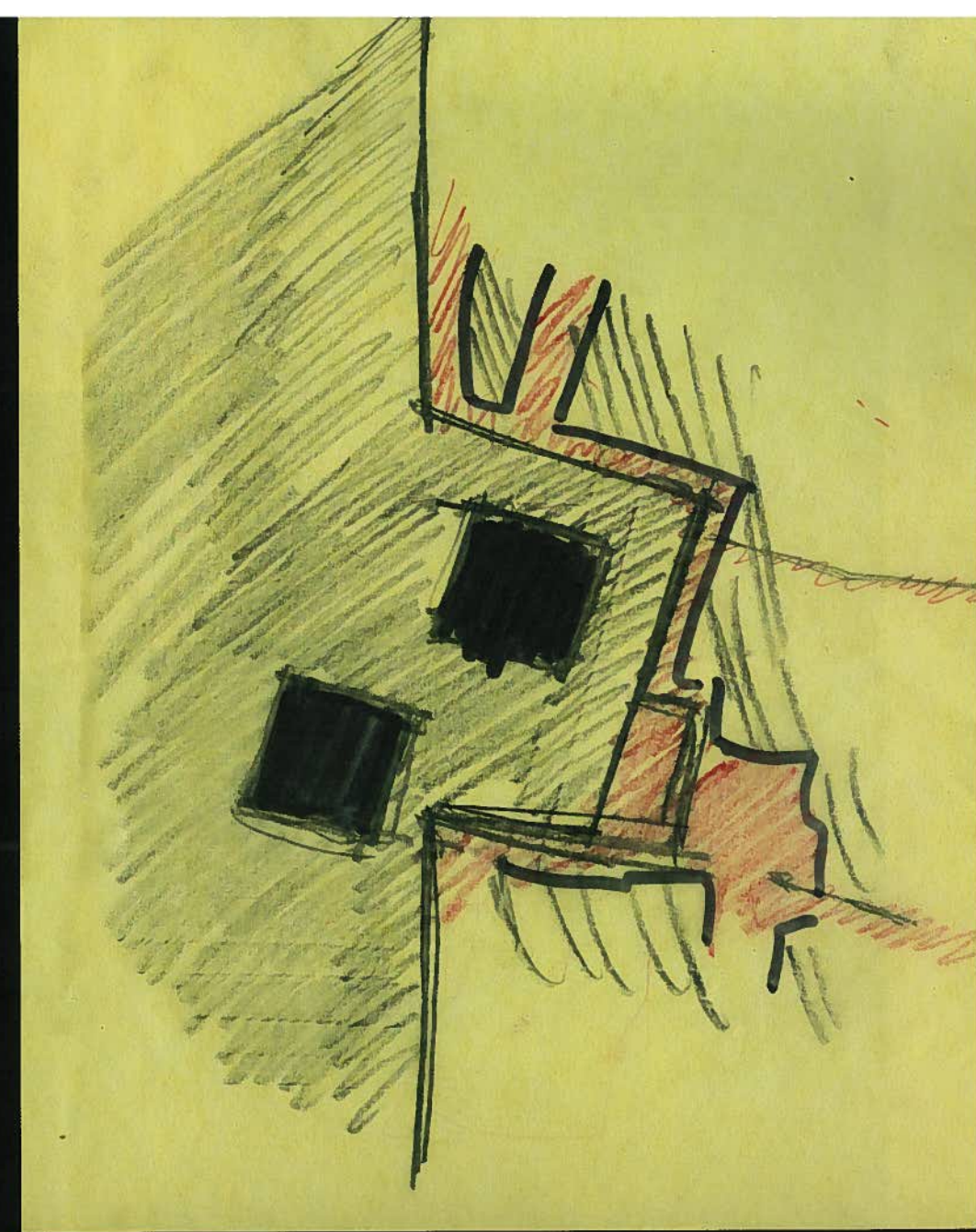
**F**rom his earliest sketch to the fully realized incarnation, Michael Arad envisioned *Reflecting Absence* as a plaza framing the two sunken pools that articulate the footprints of the towers. Streaming down the granite-clad walls from each side is a curtain of water, bathing the plaza with the constant sound of rushing water. From the bottom of the waterfalls, the water drifts toward the center, where it drops into what appears to be a bottomless chasm.

Outlining each tower's footprint is a bronze parapet, angled outward and bearing the names of the 2,983 victims—including those of the three attacks on 9/11 as well as those from the 1993 bombing of the World Trade Center. The organization of these names presented the most charged and complex challenge of the entire project. Arad remembers asking, "How could we arrange the names of the victims to reflect this terrible and enormous toll, while still honoring the individual and unique aspects of each and every loss?"

Early on, Arad and his design team dismissed common patterns of categorizing names on memorials: date of death, as in the Vietnam Veterans Memorial, did not apply in these tragic

circumstances. Another standby—alphabetical listings—would not honor the individuality and singularity of each person. Knowing that 40 percent of the victims' families had no remains to bury, Arad grasped that this memorial would be used as a gravesite for grieving and remembering. The act of scanning an alphabetized column, such as one that would include the three people named "Michael Lynch," would diminish that sense of intimate connection to a single person.

In his effort to achieve a "deep, personal, particular meaning in the arrangement" of names, Arad created the concept of "meaningful adjacencies." Following the wishes of the families, the names would be collected in nine groups: the two towers, the four flights, the Pentagon, the 1993 victims, and the first responders by department/division. Victims in the north tower would be recognized on the north pool panels, and victims in the south tower at the south pool. Within each group, names would appear to be randomly placed in staggered lines across five rows. The randomness paralleled the indiscriminate and arbitrary killing of these individuals.



Above: Streaming down the granite-clad walls of the reflecting pools are curtains of rushing water that drop into what appears to be a bottomless chasm. (Photo: Joe Woolhead)

Top left: Just two years out of architecture school on 9/11, Michael Arad drew this sketch of a pair of twin voids where the World Trade Center towers had been. For the memorial foundation, his concept captured the sense of rupture, loss, and absence the tragedy evoked. (Image: Handel Architects)

Left: An aerial rendering shows how closely the realized site resembles Arad's initial vision. The wedge-shaped building is Norwegian architect Snøhetta's Memorial Pavilion. Landscape architecture was by Peter Walker and Partners. (Image: Squared Design Lab)

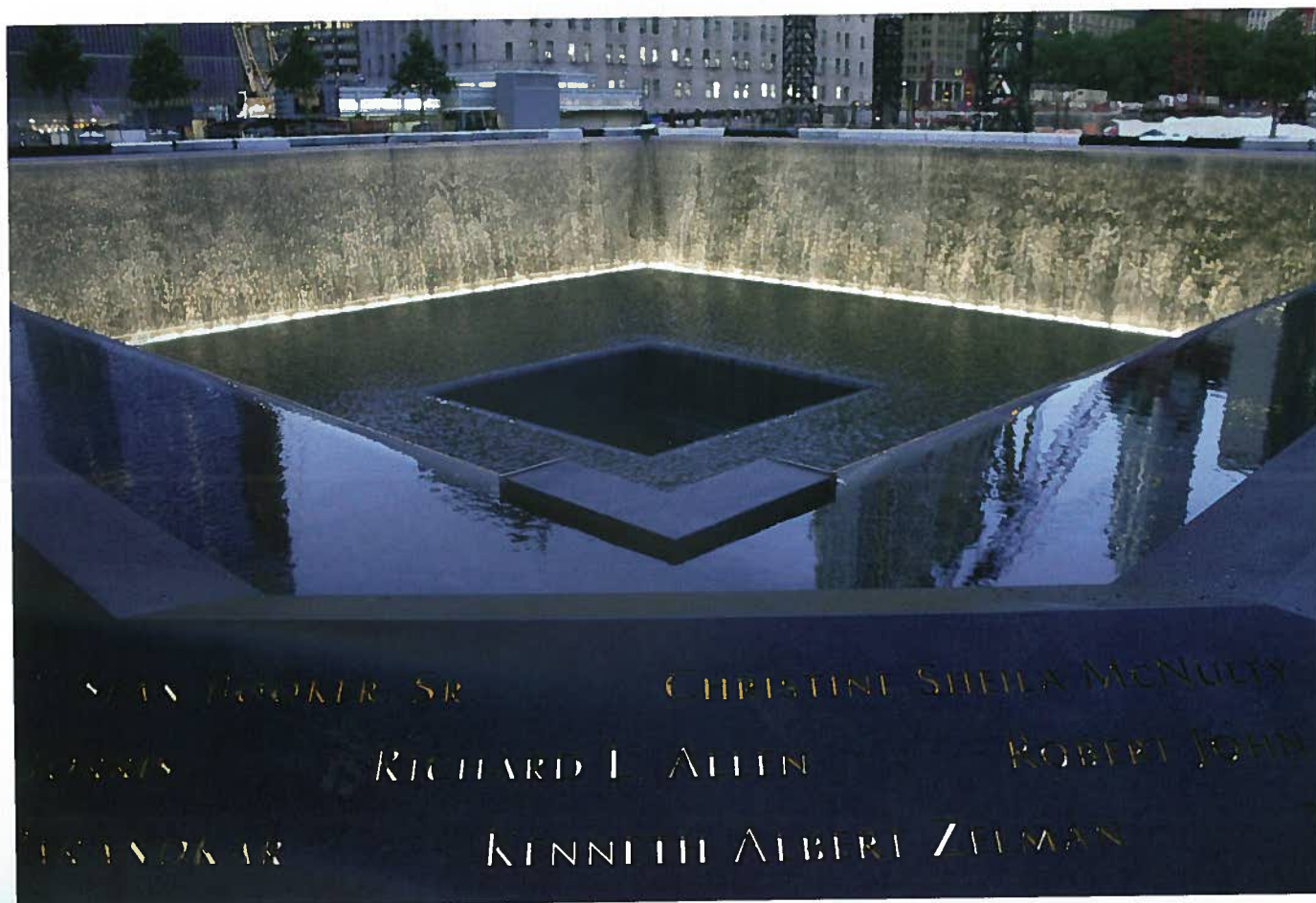


Knowing that 40 percent of the victims' families had no remains to bury, Arad grasped that this memorial would be used as a gravesite for grieving and remembering.



A statistician hired by the memorial foundation concluded that there was zero chance of completing the puzzle to everyone's satisfaction.

Below: Outlining each tower's footprint is a bronze parapet, angled outward and bearing the names of the 2,983 victims. Arad chose Optima Medium Standard as the font for victims' names. The names are cut through 1/2-in. bronze panels illuminated from below. (Photo: Joe Woolhead)



But within this seemingly haphazard arrangement, Arad wanted to create a more intimate narrative for those who grieved the most. "I decided that we should reach out to family members of the deceased and ask if they wanted the names of their loved ones to be arranged adjacent to other victims that the deceased had known during their lives."

**"A latticework of human meaning"**

In 2009, with Mayor Bloomberg's help, the wishes of the families were collected; more than 1,600 requests poured in. Requests to connect brothers, fathers, and daughters, fiancés, friends, colleagues, and strangers who tried to help each other on September 11—hundreds of stories and personal relationships to be honored.

At the time, no one knew whether it was logistically possible to accommodate all the requests, especially within the nine groups as already defined. A statistician hired by the memorial foundation concluded that there was zero chance of completing the puzzle to everyone's satisfaction.

That's when Jake Barton, founder of Local Projects (New York), got a call from the foundation. His media design firm was

already working with Thinc Design (New York) on the exhibits for the National September 11 Memorial Museum that will open in 2012, directly beneath the memorial plazas (see sidebar). His expertise in storytelling, digital media, and complex content qualified his firm to address the name-adjacency challenge, and his team took on the project with conviction. It was their task to render an undifferentiated list of names into what Barton described as "a latticework of human meaning."

Local Projects created a complex algorithm that sorted the victims' names by affinity: police officers near other police officers, victims in the South Tower with their co-workers, passengers on the flights, etc. A drag-and-drop software tool tracked each request and maintained a tally of how close any composition came to fulfilling every adjacency request. Users of the tool could "pick up" a name, place it in a new location among the rows and panels, and see whether a given move improved or reduced the percentage of met requests.

With a deadline to complete the memorial by the 10th anniversary—and without knowing whether 100 percent of requests could indeed be fulfilled within the geographic and physical constraints of the design, Arad and Barton undertook

**NATIONAL SEPTEMBER 11 MEMORIAL**

**PROJECT AREA** 8 acres  
**PROJECT COST** \$575 million  
**CLIENT** National September 11 Memorial & Museum  
**LOCATION** New York  
**DESIGN TEAM** Handel Architects LLP (design architect): Michael Arad (designer/partner in charge); Gary Handel (principal); Amanda Mangold-Sachs, David Margolis, Robert Jamieson, Cristobal Canas, Garrett Brignoli (design team)  
 Peter Walker and Partners (landscape architecture), Aedas (associate architect), Snøhetta (Pavilion architect)  
**CONSULTANTS** Local Projects (names arrangement software, mobile app, Memorial Guide), DEW Inc. (fountain design), Fisher Marantz Stone (lighting designer), Lord Cultural Resources (museum planning)

parallel high-tech and low-tech sprints. "It was a tremendous gamble," Arad remembers. Having expressed his intentions to the families, "we became engaged in months and months of hard work" to make it all happen.

On the high-tech route, foundation members and Arad's team used Barton's software tool to program the North Pool. At the same time, Amanda Mangold-Sachs, an associate at Arad's firm Handel Architects, began to compose the South Pool by hand by herself. Using quarter-scale cards that included the person's name, group, and adjacency requests, she spent months shifting and sorting the arrangements on 2-1/2 ft. racks. "It was a labor of love that took patience and perseverance," Arad remembers.

Both the high-tech and low-tech efforts succeeded in fulfilling all the requests; the composition was as complete as what Arad called "an endless ribbon with a regular grain, or visual density." The names are cut through 1/2-in. bronze panels illuminated from below at night. Arad selected the font Optima Medium Standard and his designers modified it into a stencil to accommodate the counters (the enclosed negative space within letters like "a" and "b") with discrete pinned supports. Group names are CNC-milled as raised and attenuated prismatic letters.

To find an individual's name, visitors to the memorial can get directions from the Memorial Guide website and mobile app designed by Local Projects, as well as from several onsite kiosks that use Local Projects' interface design.

Beyond their role in name arrangement and wayfinding for the memorial, Barton and his firm have taken on the role of storytellers and archivists of September 11. In partnership with StoryCorps, the nonprofit national oral history project, Local Projects has developed what Barton describes as "storytelling engines—participatory interfaces that are open and dynamic, that correspond to the fluid and interdependent nature of storytelling." Their efforts to record, catalog, and publish stories about the events are to serve a universal mission: "tell the enormity and diversity of the tragedy—to dimensionalize each individual and their story." People will interact with this living archive, and add to it, on websites, apps, and in the museum when it opens next year. [X]



In a project full of challenges, one of the most complex was finding a meaningful way to arrange the 2,983 victims' names. Arad committed to a system of "meaningful adjacencies," and he worked with victims' families to ensure names appeared within affinity groups such as the 1993 WTC bombing, Flight 93, the North or South Towers, or first responders. (Photo: Joe Woolhead)

Local Projects created a complex algorithm that sorted victims' names by affinity. A drag-and-drop tool tracked each request and maintained a tally of how close any composition came to fulfilling every adjacency request. (Image: Local Projects)



Local Projects' mobile app allows users to search for victims' names and listen to stories about some of the victims. (Image: Local Projects)