

John Middendorf

Portfolio of selected creative works

Application for Harvard Graduate Design School 1999

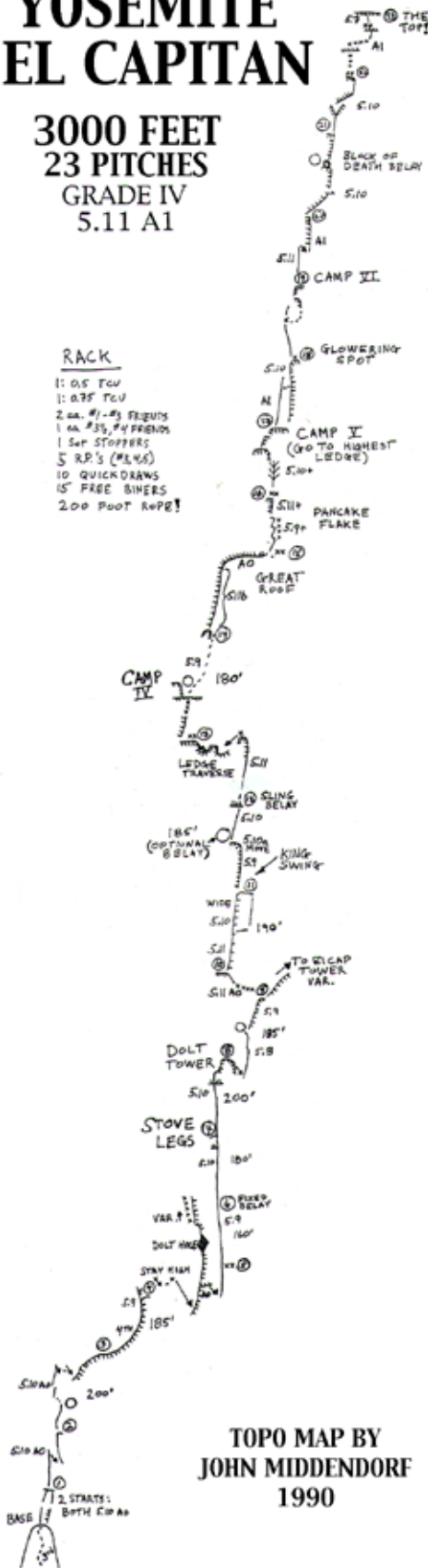
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Climbing is in itself a type of design process. From mapping out new routes on big rock faces to planning the committing logistics of multi-day climbs, every aspect of a big climb needs to be considered creatively for success. In addition, each section of rock often requires clever problem solving abilities in order to ascend.

YOSEMITE EL CAPITAN

3000 FEET
23 PITCHES
GRADE IV
5.11 A1



Left: Climbing map of the Nose Route on El Capitan.

Right: Line of Middendorff's new 18-day route on Great Trango Tower in Pakistan. Photo from the American Alpine Journal, 1992.



Above: Australian Newspaper Article about Middendorff during a six month climbing tour in 1981.

After graduating from Stanford University with a degree in Mechanical Engineering in 1983, I began a full time climbing career. I climbed every day of the year and made my living by working on YOSAR (Yosemite Search and Rescue) and rigging climbs for films and commercials.



Left: Several local northern California newspapers published stories on Middendorff and other members of YOSAR and of their daring rescues of stranded hikers in Yosemite.



Left: Dan Mannix in position several thousand feet up on the face of El Capitan during the filming of Rock and Road. Middendorff was the chief rigger for this film, which won an Emmy for its footage.

Climbing 1984-1999

After years of climbing, my skills and climbing opportunities advanced to the point at which I became one of the finest climbers of the era. My image was used in a variety of publications.



Above: Spring 1989 PATAGONIA catalog photo. "John Middendorf on 'The Tripod', El Capitan Meadow, Yosemite."



Above: Rock and Ice ad 1998. "John Middendorf crossing the Braldu River, Pakistan."

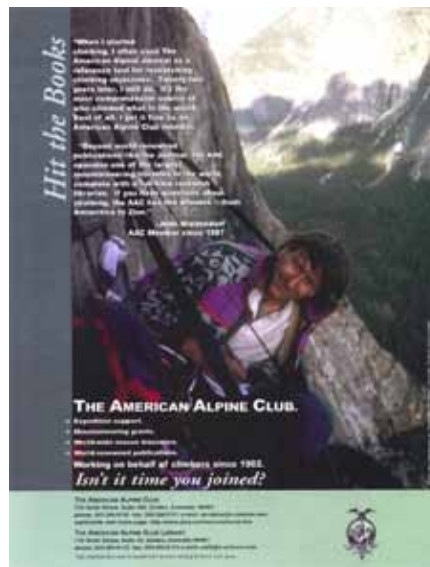


Above: Summer 1993 PATAGONIA catalog photo. "John Middendorf cleaning house on 'Wyoming Sheep Ranch,' El Cap."

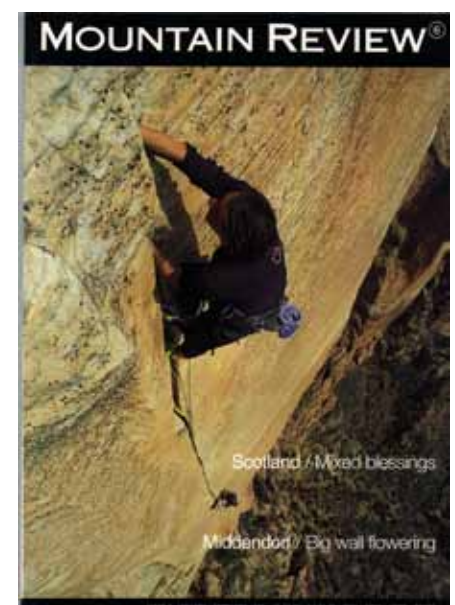


Above: Article on Middendorf in Outside magazine, September, 1995. Comparisons to Dean Martin were made.

My creative approach to climbing and developing innovative equipment has brought me international credibility and acclaim. In recognition of my contributions to the climbing world, I have been the subject of feature articles in Outside, Climbing, Mountain Review, and other international climbing periodicals.

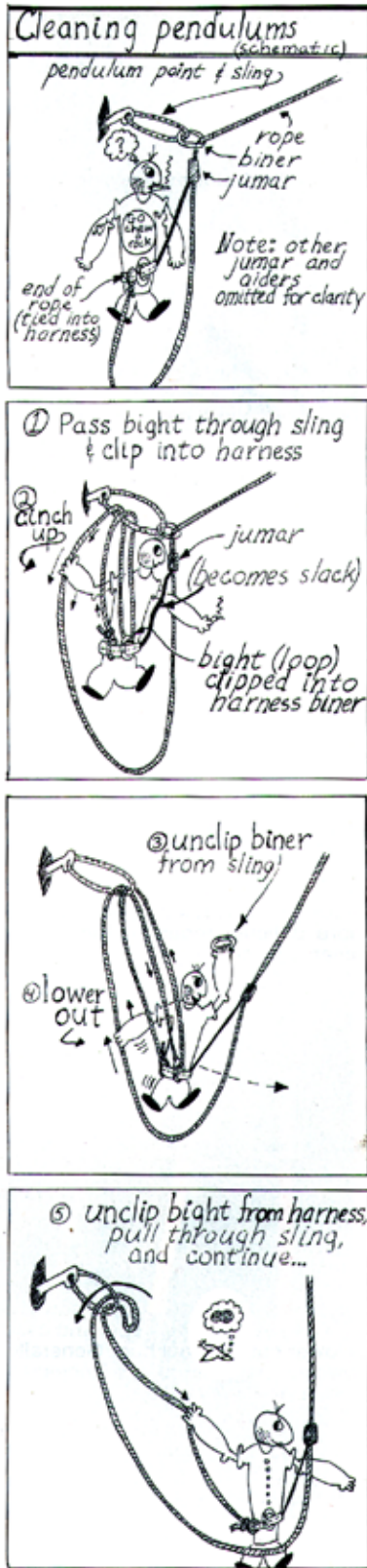


Above: American Alpine Club ad. "John Middendorf on 'Tribal rite', El Capitan." From a 6-day climb in 1991. In the photo Middendorf is taking notes on equipment design while suspended several thousand feet above the ground.



Above: One of the several profile articles on Middendorf in the 1990's. This one included the cover photo of the international climbing periodical, Mountain Review, January 1994.

After mastering the complex sport of big wall climbing, I had the desire to share my knowledge and experience with others, and began writing informational articles and books. Over the years, I have had the privilege of writing for a variety of publications from around the world.



Above: Middendorff illustration for "Big Walls: Modern Tools and Methods," *Climbing* #100, February 1987.



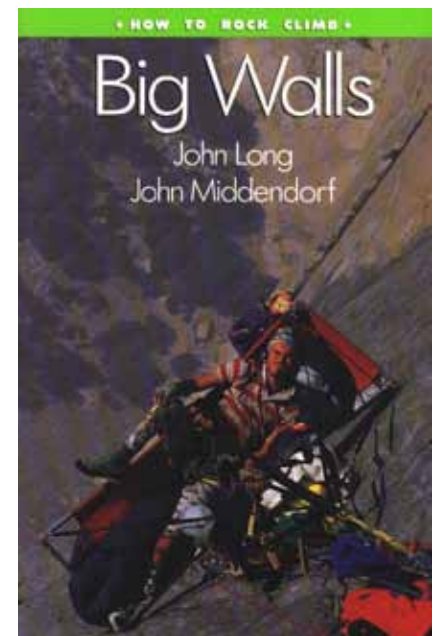
Above: Middendorff's first published writing: an article on the tools of big wall climbing (4000 words). From *Climbing* magazine, December, 1986.



Cover of the 1988 Middendorff self-published "Big Wall Tech Manual", the original modern reference for the tools and techniques of big wall climbing.



Above: "Garbology 101," an article written by Middendorff imploring climbers to keep the mountains clean, with techniques on garbage maintenance. He wrote this piece for *Climbing* in 1995 after an expedition to India where he came upon abandoned basecamps littered with trash.



Cover of the 1994, *How to Rock Climb, Big Walls*, by John Long and John Middendorff. This standard reference for climbers has sold over 15,000 copies.

Writing 1986-1999



Above: Pages from Middendorff articles in international journals: Iwa to Yuki (Japan), Vertical (France), and Mountain Review (United Kingdom).

THE MECHANICAL ADVANTAGE Tools for the Wild Vertical

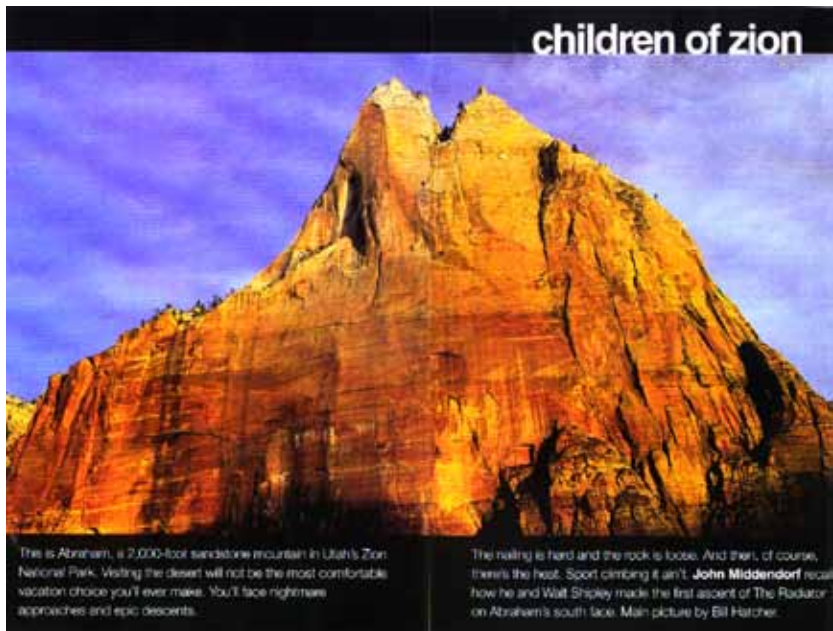
John Middendorff

The world's most advanced climbing gear was developed in the 1980s by a former military officer, now an 18-year-old mountain climber, a 1980s rock climber, and a 1980s rock climber. With gear that is better than anything else on the planet, the 1980s saw a revolution in climbing. The 1980s saw the development of the modern climbing gear, which is better than anything else on the planet. The 1980s saw the development of the modern climbing gear, which is better than anything else on the planet. The 1980s saw the development of the modern climbing gear, which is better than anything else on the planet.



Above and Left: Cover of Ascent 1999, and the first page of a 26-page article by Middendorff on the tools of climbing. The article tracks the evolution of climbing since 1492 in relation to advances in technology. Ascent is mountaineering's most prestigious journal.

Writing as a process follows the elements of design. It is the creation of form with words as the raw material. The building blocks of writing--organization, structure, and sequence--are also components of design. My experiences with writing have benefited my design skills by enhancing the ability to highlight the essential and cull the inconsequential.



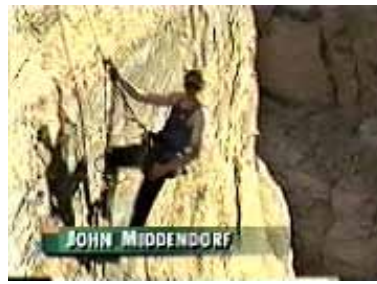
Above: Opening spread of a Middendorff story on a climb in Zion National Park, Utah. From Mountain Review, 1993.

Adventure Film Directing 1997

In 1997 I directed and hosted a one-hour film on the sport of Canyoneering. Together with professional cameraman Mike Graber and his wife Diana, we created a film in 10 days of shooting in the canyons of the Southwest. The show was produced by American Adventure Productions and has aired multiple times.



TITLE SHOT: PAN DOWN TO MAJESTIC VIEW OF ZION NATIONAL PARK.



INTRODUCTION WHILE RAPPELING INTO THE GRAND CANYON.



REVIEWING THE EQUIPMENT NEEDED FOR CANYONEERING.



INSTRUCTION ON ROPE SKILLS.



DISCUSSING CANYONEERING WITH CHIEF RANGER, DAVE BUCCELLO.



CHECKING THE ROUTE ON THE MAP.



LOOKING INTO A DEEP SLOT CANYON PRIOR TO A RAPPEL.



SHADOW OF A RAPPELER.



IN THE SLOT CANYON.



COMING UP: ROCK, RAPPEL AND SWIM.



A BREAK TO VISIT MIDDENDORF'S DESIGN ROOM TO DISCUSS HIS LATEST INNOVATIONS IN WATERPROOF PACK DESIGN.



BACK IN THE CANYON, THE NEW TECHNOLOGY WAS PROVEN DURING A SWIM.

Right: Modified storyboard from the To The Edge Outdoor Life Network series, "Canyoneering with John Middendorf". In addition to the canyon adventures, Middendorf's designs were discussed on nation-wide TV.



NEAR THE END IS A CLIMB.



THEN MORE BEAUTIFUL CANYON.



THE EXIT FROM THE CANYON.

Web Sites & Slide Shows 1986-1999

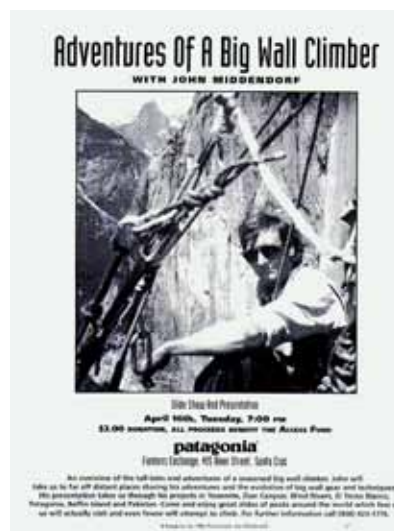


My big wall web page, at www.bigwalls.com, is popular with climbers from all over the world. Originally designed and published using raw HTML in 1994, I have retained a simple and efficient layout to this day.

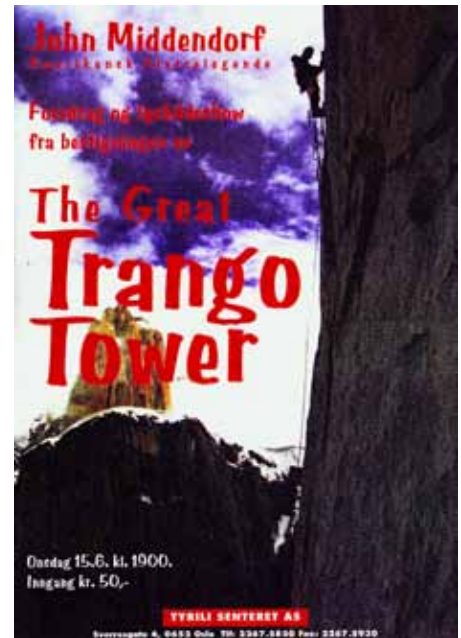


Above and left: Pages from Middendorf's Big Wall Web Page, which received a Lycos top 5% review with an overall rating of 84 out of 100. Text of the Lycos review follows: *The "big walls" that Webmaster John Middendorf is talking about are the huge vertical rock faces that require a little bit of gear and a lot of guts to ascend. People who do such things can appreciate that much of his site pertains to the technical side of the gear and the routes taken on walls in Yosemite and Zion Parks, or in the wilds of Pakistan and India. Most of us who can only gasp at the beauty of the mountains and the bravery (or foolishness) of the teams that climb them, never really comprehending the compulsion of climbing. But Middendorf makes sure that even flatlanders get a feel for the danger and excitement, relating several of his adventures in exciting narrative detail. His stories of his climbs are truly compelling and suspenseful, and read like thrilling short stories. By all means, check out "The Grand Voyage" (up the Trango Towers in Pakistan) and "Rescue on Half Dome," a nail-biting tale of Middendorf's near-fatal trip in Yosemite.*

Slide presentations offer a creative way to tell a story. Over the years I have lectured over a hundred times to a variety of audiences and have learned some of the finer points of description and perception. Good slide show design is essential to capture the suspense, drama, humor, and excitement of an actual event.



Above: Middendorf Slide show flyer from 1993.

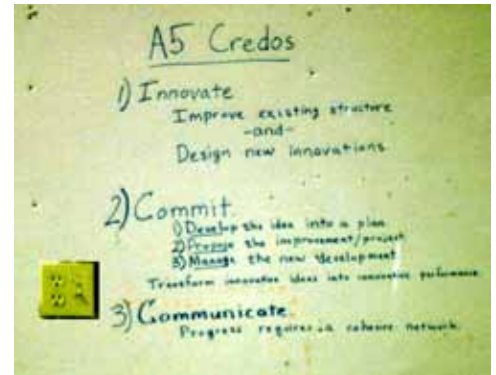


Above: 1995 poster from a slide show in Norway reads, "John Middendorf, American Climbing Legend."

In 1987, I started up A5 Adventures and began manufacturing climbing equipment. My intent was to revolutionize existing standards of equipment design, so I learned how to sew and design fabric products, put my engineering degree to work, and spent the next ten years learning how to run a company in the business of innovation.



Above: The A5 Team, 1995.



Above: Middendorf's "Credos" in the A5 shop, 1987.



Above: Before reliable and portable vertical shelters were developed by A5, climbers often used hammocks that required two suspension points.

One solution to the hanging bivouac system was to improve the lightweight hammock. The A5 "T-Bone hammock" is suspended from a single point. Single point hammocks were traditionally cramped; here the comfort problem was solved by adding a lightweight frame to which the hammock is suspended.

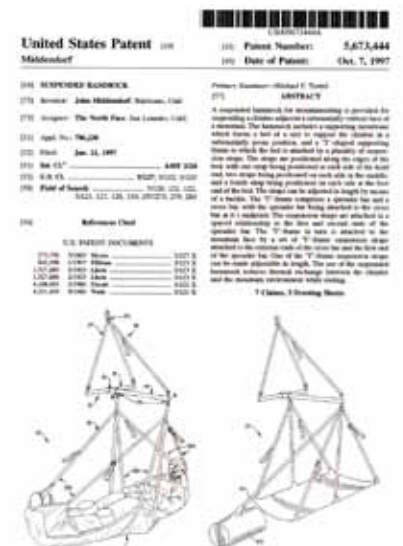
Before A5 portaledges, climbers resorted to a variety of systems for spending the night on large rock walls. In Yosemite climbers would often bring wood platforms or steel rigid framed cots. In more remote places, where weight is an issue, climbers sometimes relied on hammocks, which did not offer adequate protection from the elements. Big wall standards were limited severely by the lack of an adequate and versatile bivouac system.



Above: The T-Bone single point suspended hammock. Right: US Patent for the T-Bone system awarded to Middendorf in 1997.



Above: An example of a rigid, non-packable portaledge modified from a submarine cot purchased from a Navy surplus store.



Suspended Tent Design 1987-1998

A good big wall bivouac system needs to be lightweight, compact, easy to set up, and weatherproof. Using my mechanical engineering skills, the first of the A5 innovations was a lightweight aluminum frame system that was strong and quick to deploy.



Above: Middendorf with one each of his compact one-and two-person portaledges.



Above: A 3-person custom ledge at the A5 shop, 1989.
Above right: In action in Antarctica.



Right: the A5 portaledges introduced new levels of ease of use. Setup of the innovative design from packed to fully deployed takes less than a minute.



Above: the two person "Big Wall Condo" 1988.

Another innovation was the sheltering system. The sequence shows the deployment of the fly. A5 innovations in weatherproof ledge systems allowed for a rise in international big wall standards.



Fly packed and ready.



Quick and easy deployment.

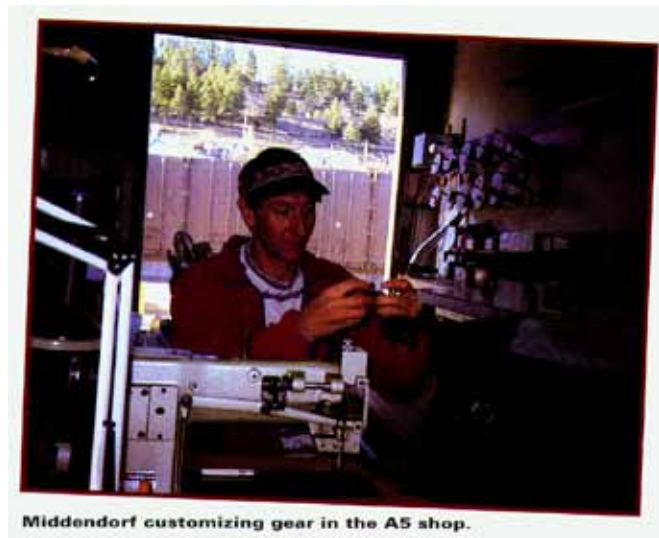


Completely weatherproof hanging shelter.

During the years I was innovating portaledge design and manufacture, I would have the opportunity to field test my designs in severe situations on the big walls of the world. During each trip, I would take copious notes on designs and improvements that would be implemented upon my return.



Above: Middendorf taking notes in his portaledge on El Capitan. During this ascent, it rained or snowed every day.

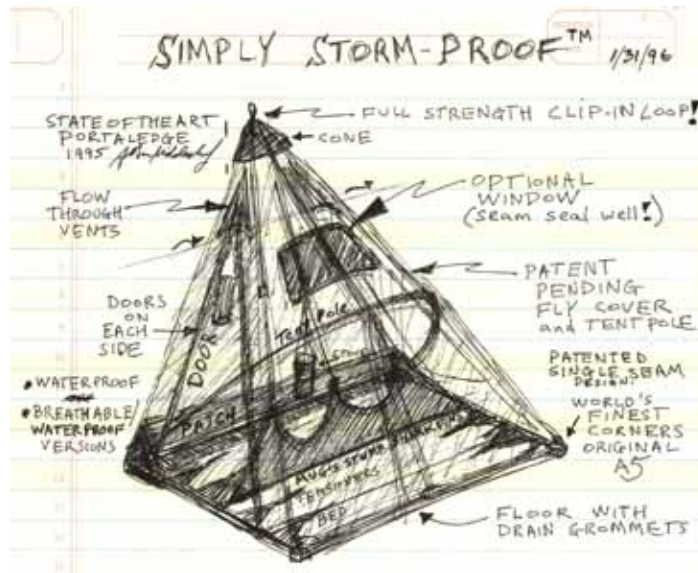


Middendorf customizing gear in the A5 shop.

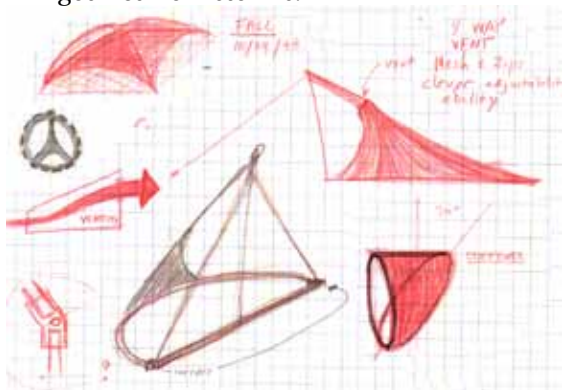
Above: Middendorf in the A5 shop. Photo from a feature article on Middendorf's climbs and designs from Climbing magazine, 1994.



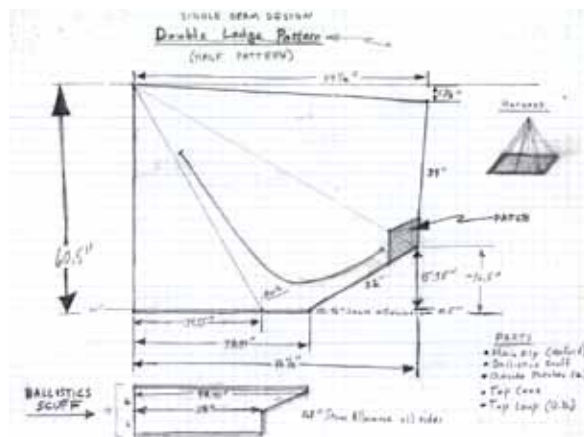
Above: Notes taken during a climb of El Cap on a page from a paperback book that got wet from storms.



Above: Middendorf's State-of-the-art design, 1996.



Above: Notes from one of Middendorf's design sketchbooks.

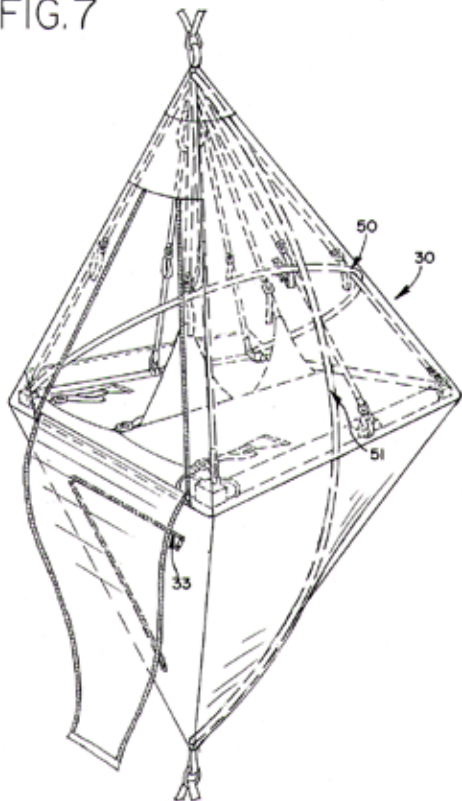


Left: The innovative single seam fly pattern developed by Middendorf which reduced the number of vertical seams from 6 to 1, greatly increasing weatherproofness.

Innovation in Design 1993-1996

In 1992 I climbed a 18-day new route on the Great Trango Tower in Pakistan which set a new standard for lightweight extreme big wall climbing. Our success was largely due to my latest portaledge design which gave my Swiss partner, Xaver Bongard, and me the ability to survive several severe Himalayan storms while suspended on a sheer cliff at 20,000 feet. Nevertheless, when I returned I had the desire to improve the design even more. The Expedition and the Diamond Ledge systems were the result of my subsequent efforts. These products, which have been sold in over 25 countries, are so reliable and weatherproof that they have facilitated a whole new era in extreme big wall climbing. Big rock faces in remote places that were once unthinkable due to the extreme conditions are now routinely climbed. Virtually all of the world's extreme big wall routes in the past 10 years have been climbed with A5 portaledges.

FIG. 7

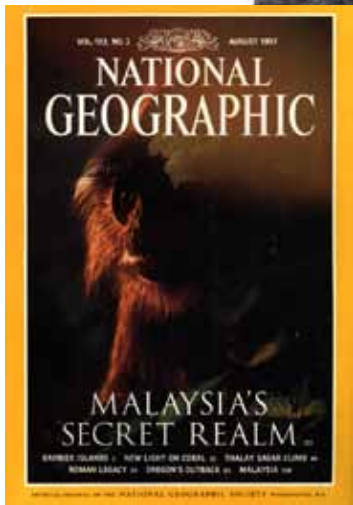


Above: The 2-person Expedition Ledge system in action on the Trango Towers, Pakistan.



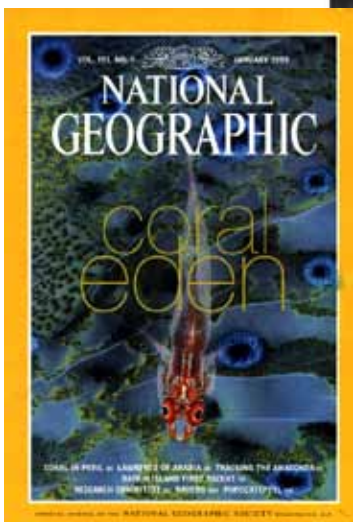
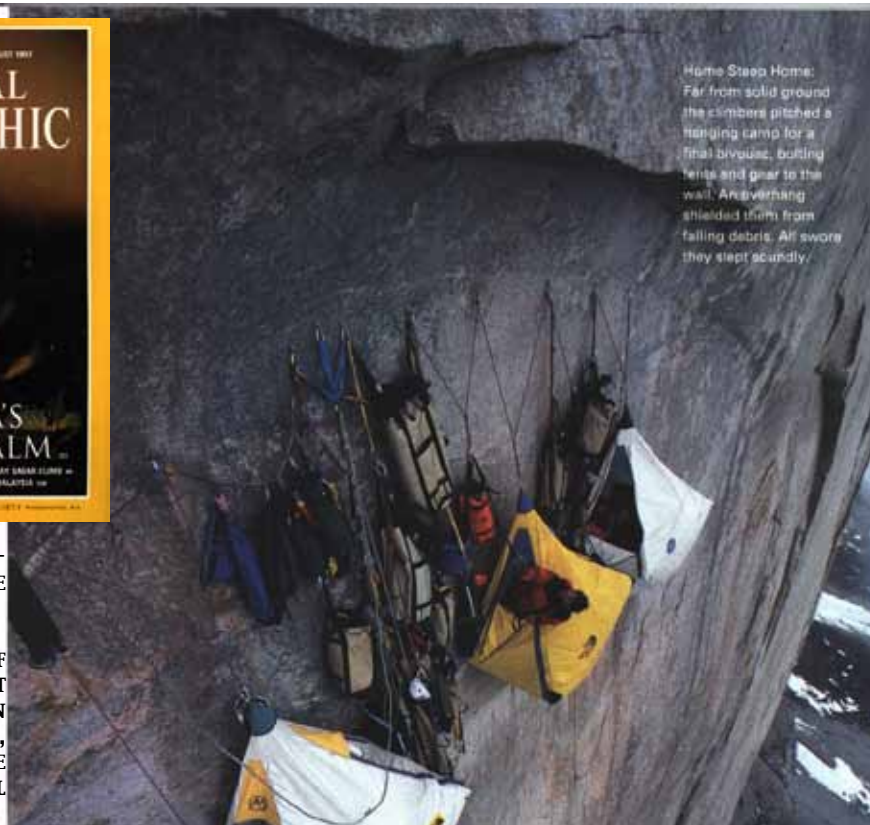
Above: Middendorf's revolutionary 3-person Diamond Ledge system, which can be anchored by both the top and bottom, creating a fixed aerodynamic shelter which no storm can budge. The third person hangs in a hammock suspended from the ledge in the lower compartment.
Left: Diamond Ledge drawing from a patent application.

More and more expeditions are successfully climbing the big rock faces of the world, thanks to A5 portaledge technology which has enabled climbers to withstand the severe conditions of remote places. The elegance of vertical living has recently captured the public's imagination, resulting in a broader appreciation extending beyond the climbing world.



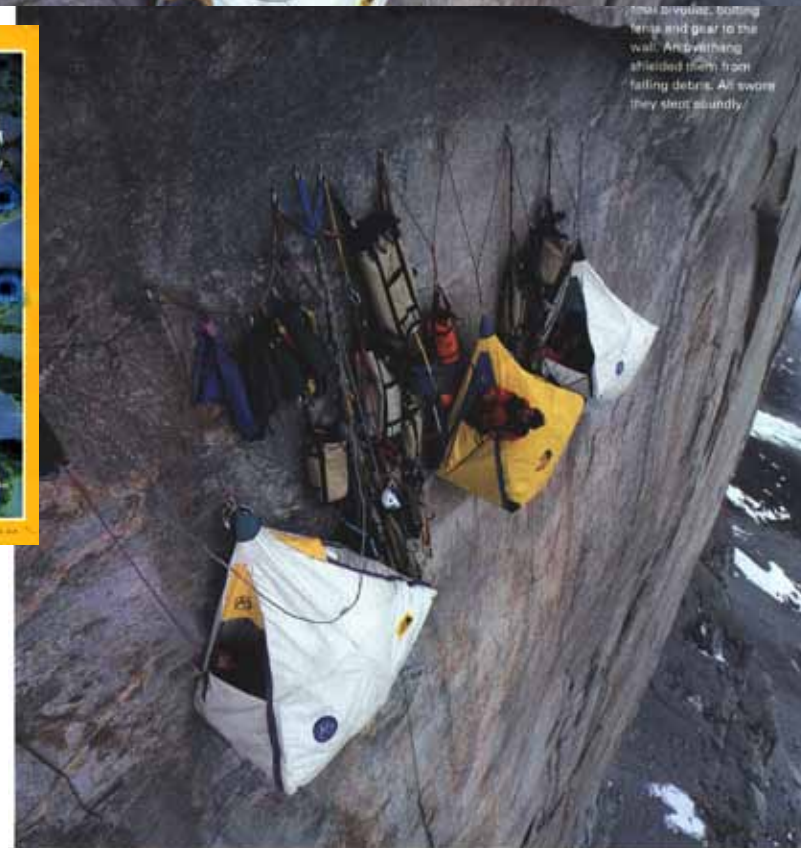
ABOVE: NATIONAL GEOGRAPHIC MAGAZINE COVER, AUGUST 1997.

RIGHT: MIDDENDORF DESIGNED AND BUILT PORTALEDGE IN ACTION IN THE HIMALAYA, FROM A TWO-PAGE SPREAD IN NATIONAL GEOGRAPHIC.



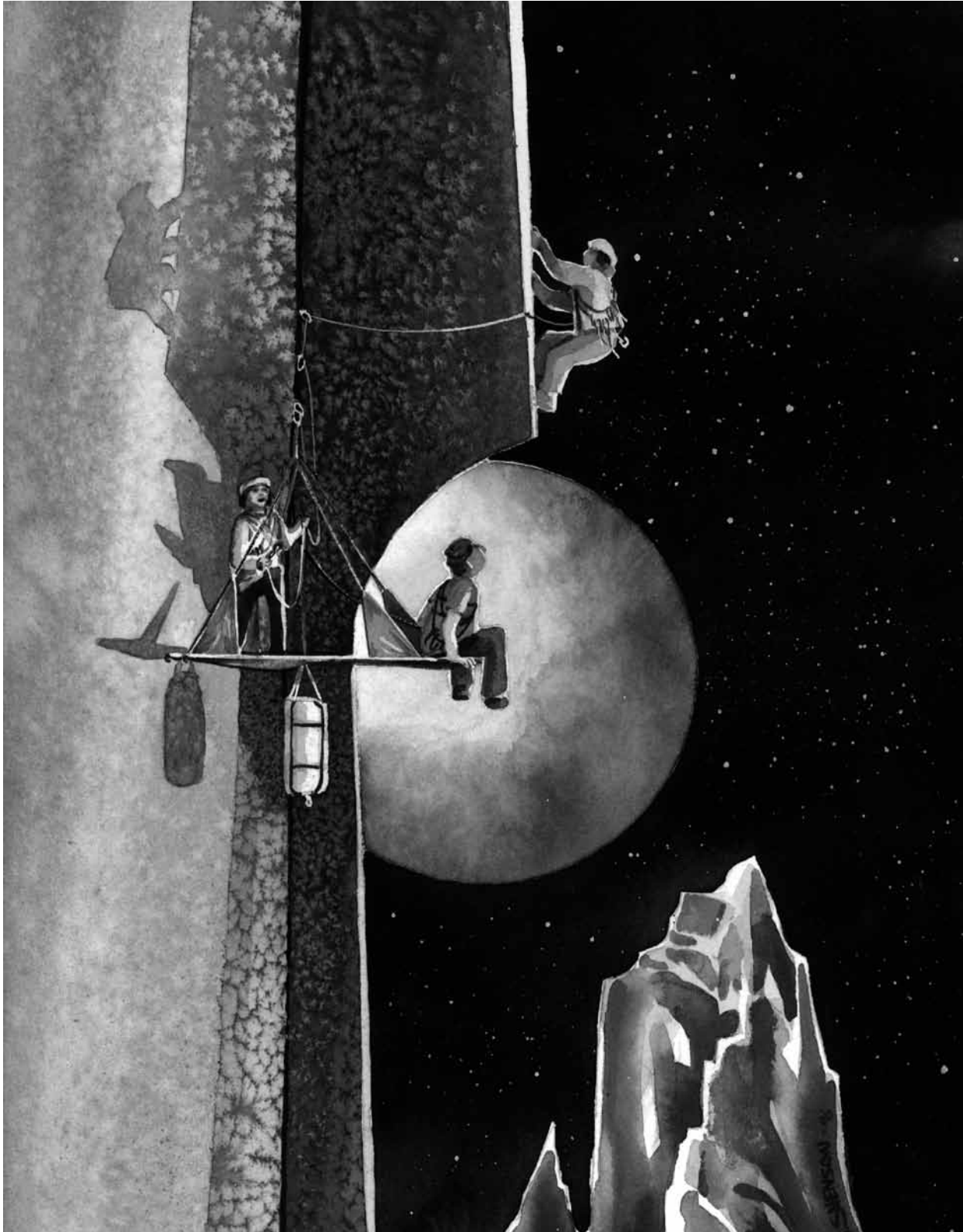
ABOVE: NATIONAL GEOGRAPHIC COVER, JANUARY 1999.

RIGHT: MIDDENDORF'S A5 PORTALEDGES IN BAFFIN ISLAND, FROM A TWO-PAGE SPREAD IN NATIONAL GEOGRAPHIC.



A5 Catalog #10 1996

CATALOG DESIGN AND LAYOUT BY JOHN MIDDENDORF.
COVER ILLUSTRATION BY JOHN SVENSON.
24 PAGES



In 1997 I sold my company of 10 years, A5 Adventures, to The North Face, in order to have greater resources for my design concepts. After managing the successful transition of the production of my portaledge designs, I set upon innovating new products. In my 18 months of employment with The North Face, I became a Senior Product Manager, set up a prototype design room, and developed a dozen new products, including a haulable backpack, new breathable fabrics, and the world's first waterproof haulbag.

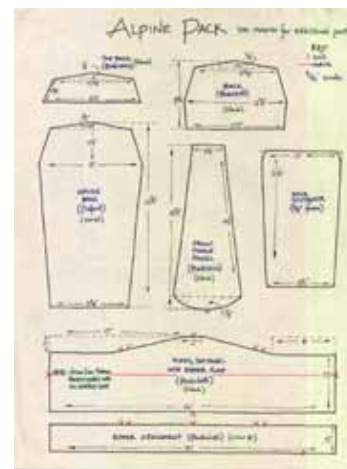


Left: page from the 1998 North Face catalog highlighting Middendorf and his engineering and design abilities.

Right: Middendorf in the prototype shop he designed and established at The North Face headquarters (from the film "To the Edge: Canyoneering with John Middendorf.")

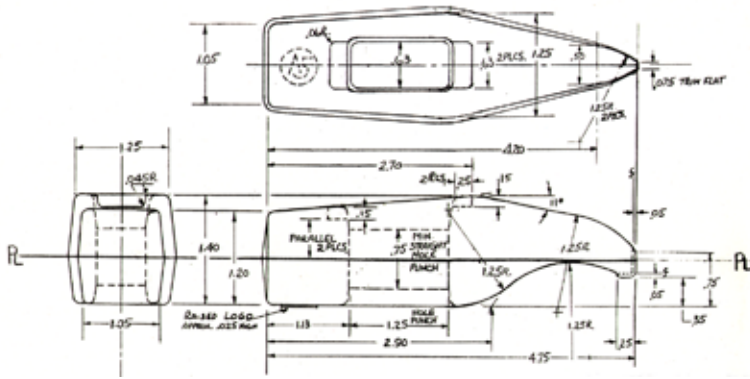


Above: Face and back of a new lightweight waterproof/breathable fabric developed by Middendorf in partnership with the filtration company Tetratek. It is a 3-ply laminate of ripstop/PTFE/tricot. Weight: 3.1 ounces/yd.

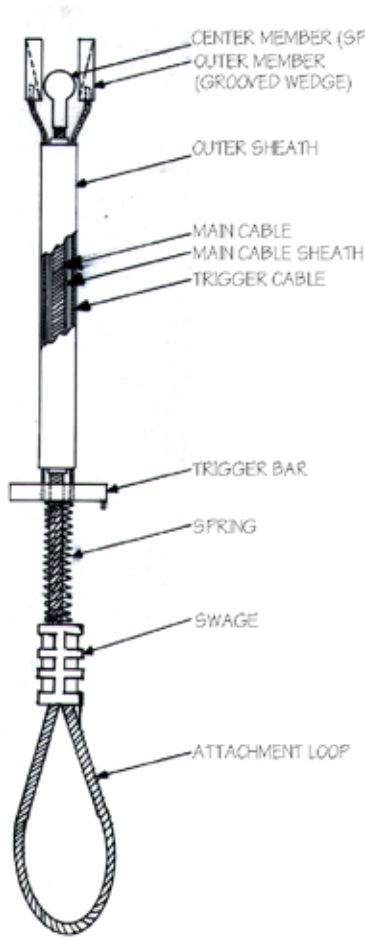


Clockwise from top left: the A5 Alpine Pack, the A5 Alpine Pack pattern, the A5 haulable backpack, and the world's first waterproof haulpack designed and developed by Middendorf in partnership with fabric welding companies, using new technology for packs: urethane fabrics and heat-welded seams.

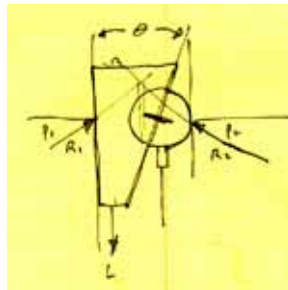
Hardware Designs 1987-1996



Left: Blueprint for the forged A5 hammer head designed by Middendorf, 1987.
 Right: Middendorf in the final stage of hammer production.



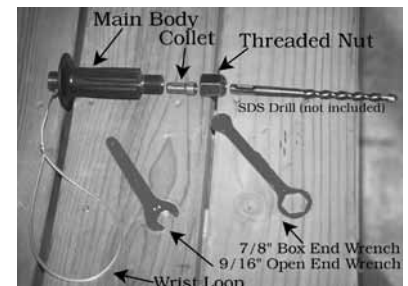
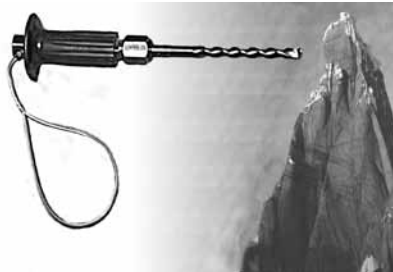
Above: The revolutionary A5 Birdbeak, a thin crack hook, first produced in 1989.



Above: Monkey Paw force diagram.

As an engineer, machined designs have always interested me. In 1987, I brought to the market a forged climbing hammer, which became world renown as the finest rock climbing hammer ever produced. Another product I designed using my engineer's understanding of force and friction was a piece of anchoring equipment which I called the Monkey Paw. This was the first use of a ball for a variable width climbing chock, and enabled secure placement in a variety of cracks in the rock. In 1989 I developed the A5 "Birdbeak", which functioned like a crack hook. This piece of equipment has become standard for big wall climbing and the name 'birdbeak' has become generic for similar designs. The Hurricane Mountain Works hand drill was another first for the climbing industry in its ability to secure a drill bit into the holder. Previous technology used a slip fit system which required hammering with a drift pin to remove the bit, often resulting in lost bits. My experience with machined products has given me insight and experience in sourcing, heat treatments, precision tolerances, and proper detail and finish work.

Above: The A5 Monkey Paw, 1987, using Middendorf's innovative concept of using a ball to adjust for a variable crack size and angles.



Above left: the Hurricane Mountain Works Hand Drill, a Middendorf concept and design, 1995. Above right: Exploded view of the Hurricane Mountain Works hand drill utilizing a expanding collet system for ease of drill bit replacement.

House Restoration 1993-1997

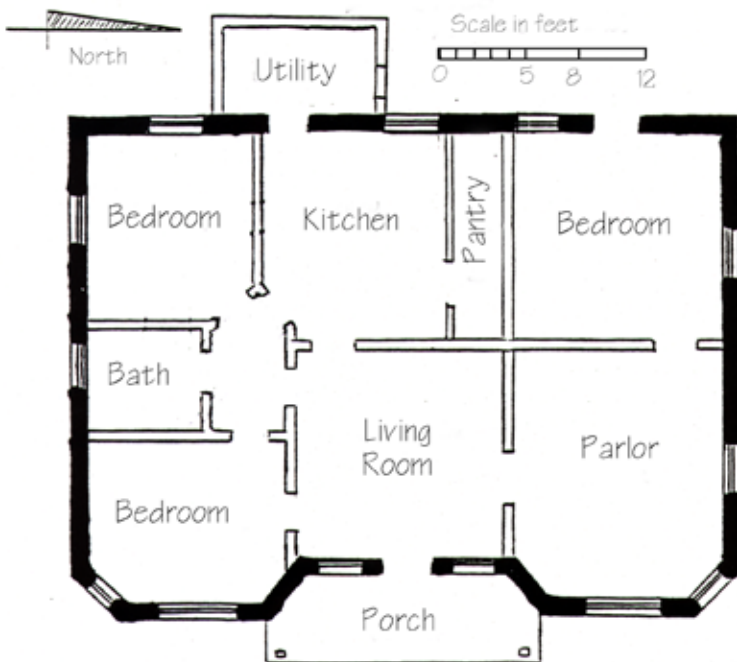


Above: The 90 year old adobe brick home at 208 South Main Street in Hurricane, Utah.



Left: Interior of home. The wood doors are carefully painted with detail resembling natural wood grain. Note the pre-restoration wiring: a live wire hanging from the ceiling connecting a lightbulb and switch.

Below: Floor plan of the Hurricane house. Note the exquisite tiny hallway with 5 doors.



Jacob and Mary Catherine Workman Home
208 South Main, Hurricane, Utah
Built in 1910

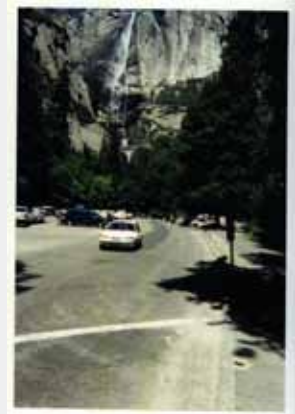
In 1993 I became the owner and caretaker of an old house in Utah. It was built in 1910 by the first schoolteacher and postmaster of the town of Hurricane, a neighboring town of Zion National Park. Though not Mormon, I have a great appreciation for the steadfastness of the people who originally settled the southwest, and the Mormon architecture and incredible workmanship of the house interested me. The house had been abandoned for quite some time, and because of a weak foundation, it had been considered for demolition by the town. When later it came up for sale, I bought it with the intention of restoring it. After pouring a new concrete foundation and tearing out the termite infested porches, I first made the house inhabitable, then moved in and made further improvements. During the four years of living there (until 1997), in addition to revamping the entire electrical and plumbing systems, I completed countless renovation projects, and in the process gained an awareness of many elements of home construction and design, both structural and aesthetic. In 1999 I sold the house to a retired couple who plan to do further refinements to its on-going restoration.

Activism 1997-1999

In January of 1997, big floods raged through Yosemite Valley, causing damage to several of the concessionaire's hotels and employee buildings. Congress awarded \$178 million to Yosemite for restoration. Quickly the National Park Service (NPS) formed a plan, and with little public involvement, the plans were approved. Though the specifics of the plans were not initially widely available to the public, it eventually became clear that the proposed new development was going to result in a significant increase in overall infrastructure and developed footprint. I became concerned when I discovered that one of Yosemite's last remaining walk-in campsites, Camp 4, my tent site and home for three years (1984-1987) was to be "temporarily" closed. Worse, four three-story employee dorms were going to be built in the eastern half of Camp 4, an area which has remained undeveloped since the park was created. My initial involvement was to produce a brochure which told the truth of the new plans, and shortly thereafter I brought an important motion to the board of the American Alpine Club (AAC) which stated, "whereas we believe that the current Yosemite Lodge development plan violates the stated policy of both the AAC and the US. Congress, which states that National Parks are to be set aside 'in their natural condition', we therefore advocate that walk in campgrounds are more in keeping with said policy than the current planned proposal to develop buildings, cut trees, and build parking lots in the area north of Northside Drive from Camp 4 to Swan Slab." Since that time, Tom Frost, an American climbing pioneer, and the AAC filed a lawsuit based on NEPA laws which helped prevent the new development. In the process we have gained a firm negotiating stance the NPS. Recently, I was bestowed the unofficial title of "Chief Architect" from the AAC Yosemite Camp 4 committee in appreciation for my initial and continual involvement and overall strategy and details of our approach to preserving this historic Yosemite campground.

Yosemite Crisis

Hotels or Campsites?



Pave Paradise...

Above: The cover of the 3-ply brochure created by Middendorf and distributed on parked cars in Yosemite which described the facts about the planned new developments around the Camp 4 area.

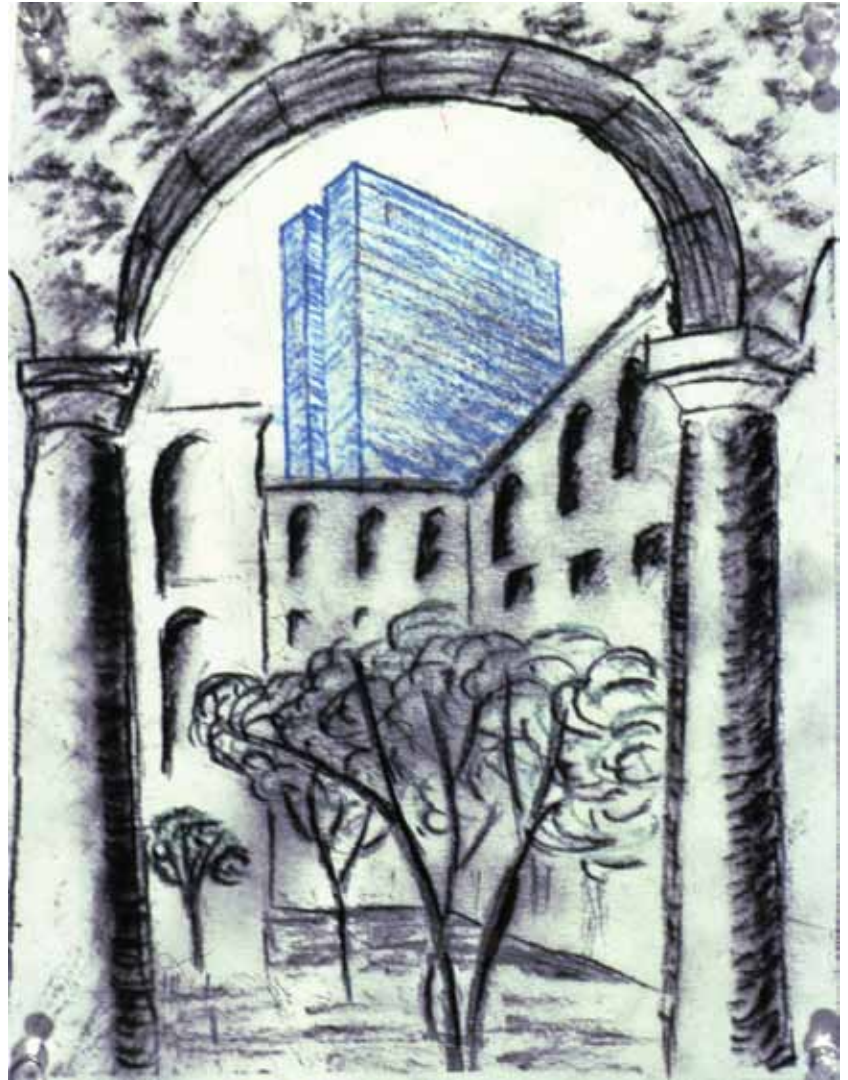


Left: Middendorf's "Favorite Places" map of Camp 4 which was instrumental in the legal argument which helped prevent a major area of Yosemite Valley from becoming developed.

Right: Middendorf's Camp4Yosemite web site (now a part of www.bigwalls.net), which has helped inform thousands of climbers from around the world of the issues in Yosemite.



Career Discovery Project#1 1999



Project One involved observing, sketching, and analyzing the Copley Square site. I was intrigued with the way in which the John Hancock building had become the prevailing icon of a site that has a variety of magnificent architecture, and chose to sketch the Hancock building in the context of the older buildings.

Top left: First page of Career Discovery sketchbook.

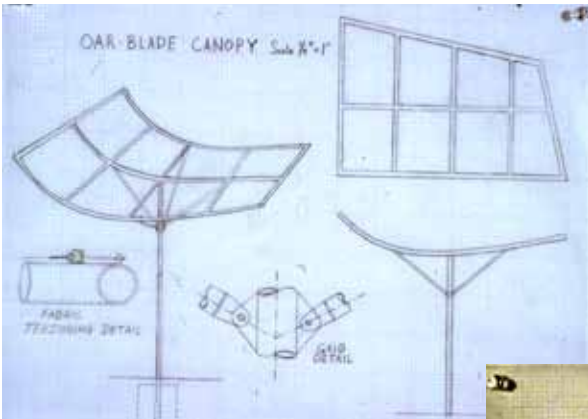
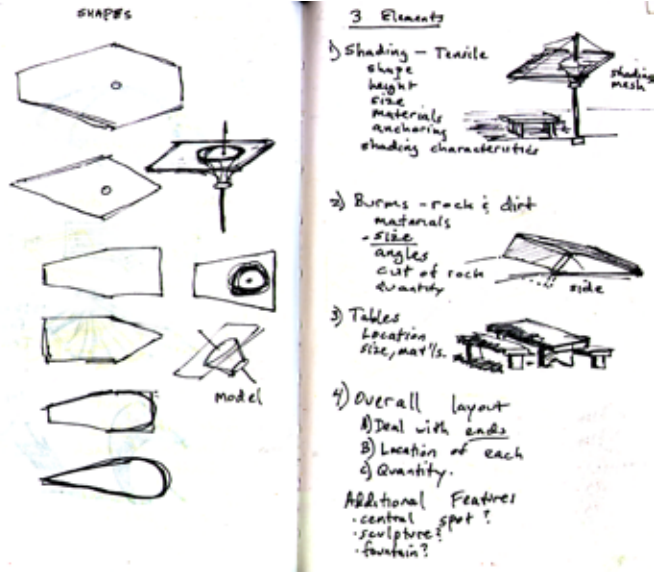
Top right: Boston Public Library courtyard view.

Far left: Drawing of the reflection of the Trinity Church.

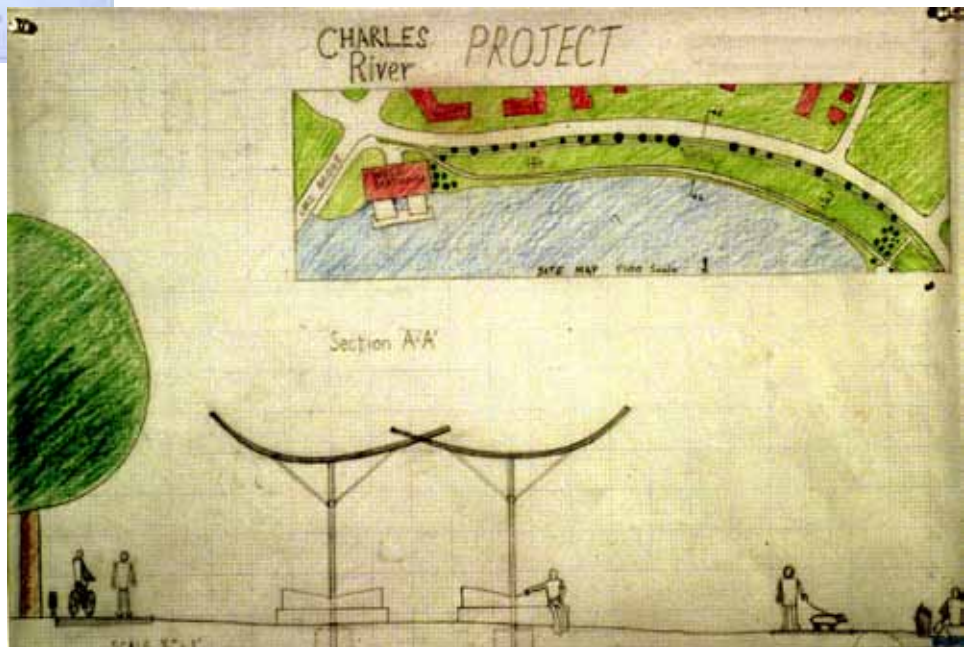
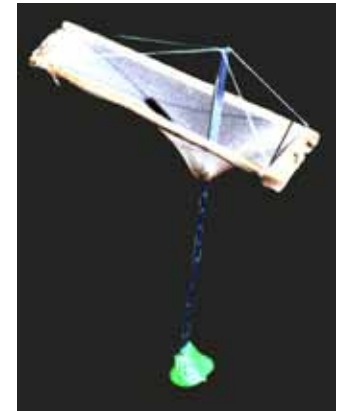
Left: Photo of the reflection.

Career Discovery Project#2 1999

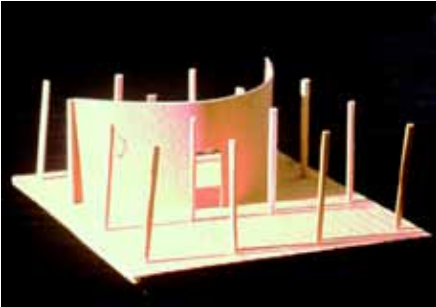
Although Project #2, an intervention of a seating area along the Charles River, was my least successful Career Discovery project in terms of design, I learned valuable lessons from the project which have shifted my conceptual awareness. With the strong underlying belief in the elegance of simplicity, it was clear to me that a minimalist approach was the key, as the area was already quite successful in terms of its circulation and multiplicitous use. I chose a simple shading arrangement and set upon the design of a shading system. My final designs were modeled after an oar blade which I believed made sense from the context. However, after my review I was convinced that the literal aspect of my shading devices was quite cliché, and after charting the design process, made a discovery that has helped to bring me closer to my long term design goals, involving viewing things less from the engineering standpoint and more from a spiritual view.



Above right: Project #2 sketchbook notes.
 Right: Initial tensioned fabric canopy model (8" tall).
 Left: Final canopy design drawing.
 Below left: Final project in group model in the studio.
 Below: Final drawing.



Career Discovery 1999



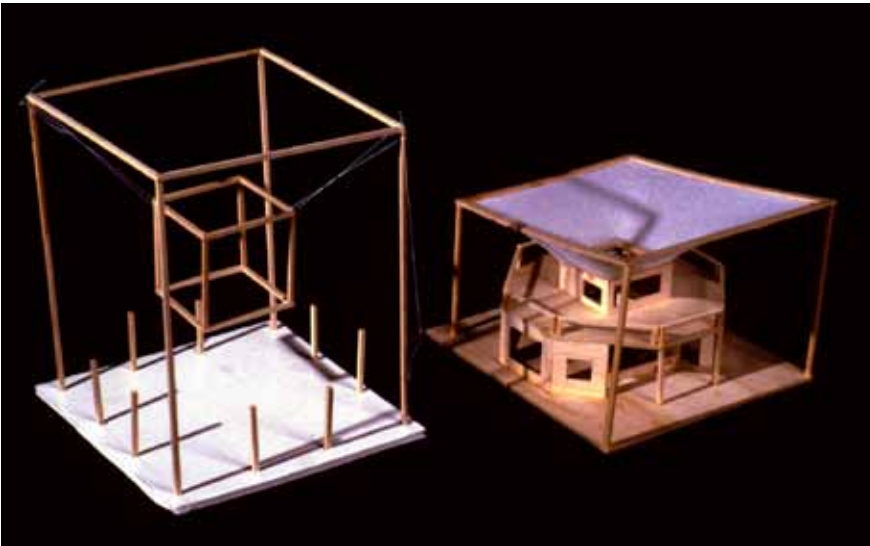
Model #1: Curved Wall investigation



Model #2: Suspended Columns



Model #3: The Tower of Dabble



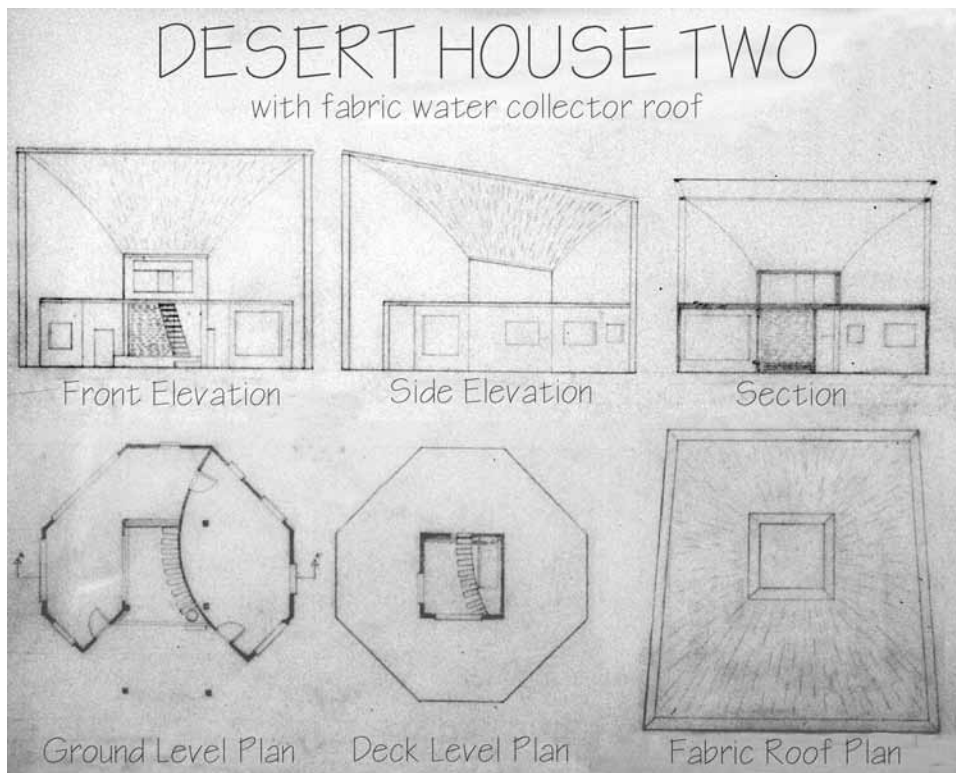
Model #4: Suspended Cube, and Final Project



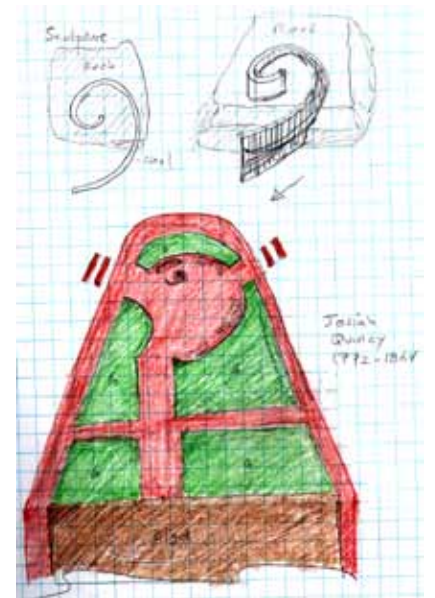
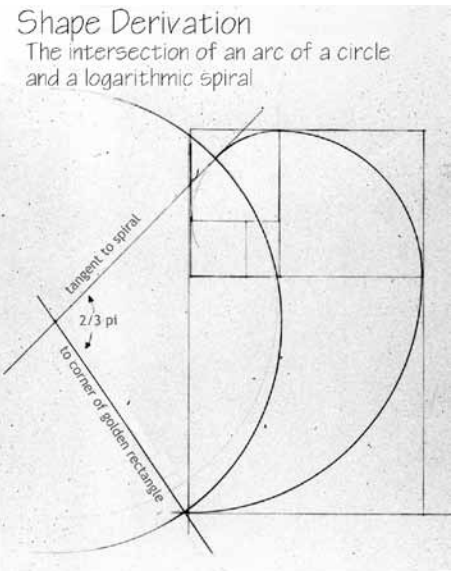
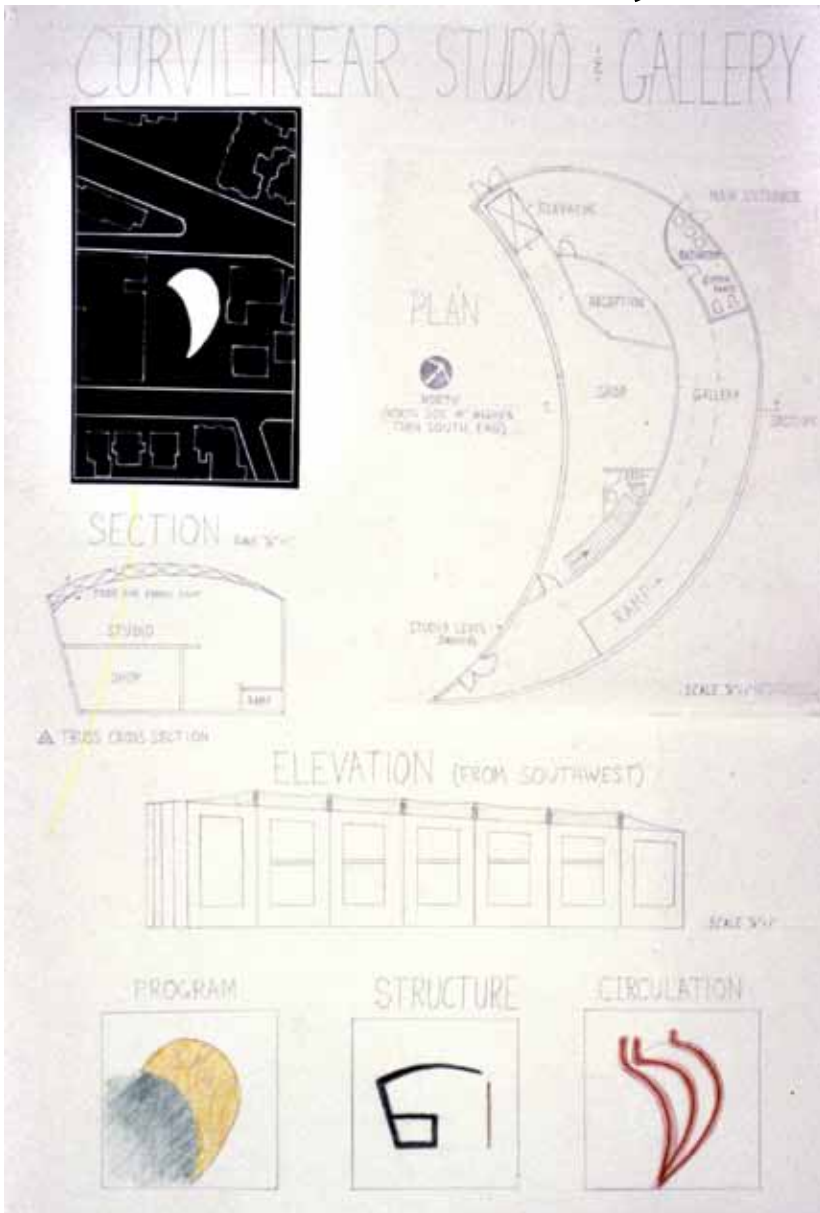
Model #5: Desert House One

Project Three, Hejduk's Nine-Square Grid exercise, was the most interesting Career Discovery project in terms of architectural investigations. Starting with the grid of 16 columns, I initially investigated a curved wall (model #1) and discovered how a curved wall create a relationship between areas, as opposed to straight walls which tend to delineate areas. Next, I focused on the columns themselves. In models #2 and #3 all but the four outside corner columns are suspended. The outside corner columns suspend the remaining eight of the perimeter, which in turn suspend the inner four columns. These investigations indicated to me an elemental order of the columns. My next model (model #4) was the suspended cube inside a cube, and clarified the relationship among the three elemental orders of columns (the outside four, the inside four, and the eight inside perimeter). My penultimate design (model #5) was the result of my investigations: the eight inside perimeter columns naturally form an octagon structure, while the outer four columns make a connection with the inner four columns via a fabric roof system. The interior curved wall symbolically connects one of the outside corner columns with one of the eight perimeter columns and thus the structure itself. On the final project (page 21) we were given the opportunity to extend the grid in a way of our choosing, and I elected to extend two corner columns out to create a more aesthetic fabric roof design.

Nine Square Grid Project #3



Career Discovery 1999



Above Left: Project #4 Drawings.
 Top Right: Shape Derivation.
 Middle Right: the nearby Quincy Park with Logarithmic stone and steel sculpture.
 Bottom Right: Photo of stone sculpture.
 Left: Site Model.



Project#4 Curvilinear Studio and Gallery



The Curvilinear Studio and Gallery is an incorporation of Program--a small art gallery and design space--and Site, a lot near Harvard Square. The building's floor plan is the intersection of a circle, the simplest of mathematical curves, and a logarithmic spiral, one of the most complex and elegant curves. The circle grounds the building and in fact is the structure of the building: the second floor and the fabric roof are both cantilevered from the tilted circular arc wall, while the dynamic logarithmic spiral gives a kinetic sense to the building, and is aligned with the main circulation of the interior, a sloping ramp from which art can be viewed on the logarithmic wall or in the gallery space below. The second floor studio space is contained by the tilted arc circular wall and the outer edge follows the form of the outer logarithmic spiral wall, creating a synthesis that is simple yet strong, complex yet elegant. The fabric roof gives a warm natural light to the interior. Outside, the tilted circular arc forms an overhang, giving a feeling of a warm embrace as one sits in the western courtyard with its logarithmic seashell sculpture.

Epilogue



Above: Middendorf watercolors painted while working as a Grand Canyon River Guide, 1999.