

ROY

Architecture of Risk



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Architecture of Risk

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Architecture of Risk





Risk the Experience

Two types of risk are apparent in ROY's work. Seemingly different in character, they are essentially two manifestations of ecological risk.¹ Being exposed to such risks as skiing Alaskan avalanche-prone glaciers in extreme cold, or tracking and photographing game in the remote reaches of the Kalahari's burning heat, are the voluntary activities of the eco-tourist. While travelers go after these experiences and the personal rewards of taking on life-threatening dangers, the residents of Cancer Alley, in contrast, live with a risk to their lives in an everyday ecological calamity. Limited by poverty and unable or unwilling to move, they are presented with this risk involuntarily. A risk imposed on a segment of a population, where economic rewards are collected by disengaged governments and corporations, Cancer Alley is the site of organized, institutionalized non-liability, ecological and personal risk. Going beyond geo-political boundaries such as nation states in the Okavango Delta Spa, or cultural boundaries such as class relations and wealth in Cancer Alley, the ecological risk in all its manifestations, is what ROY exposes and explores.

Exotic Risk

Drawing from a range of ROY's work this book concentrates on four projects that engage an experience of nature and its inherent bliss and risk.² Implicitly as well as explicitly, these projects take on the challenge of balancing nature development and conservation. First, the temporary project subWave situated in P.S.1's courtyard in New York introduces the themes in ROY's work. Then, two ecotourist destinations, Okavango Delta Spa in Botswana and Alaska's Wind River Lodge, are historically situated

in the context of ecotourism and discussed in the context of leisure. While ecotourism might be considered an elitist activity reserved for the few with time and resources to spend, the third project discussed here, Cancer Alley, responds to social and cultural research of a region in economic despair. Targeting two opposite audiences: prosperous tourists and impoverished residents, these three projects share a strategy explicitly dealing with risk by balancing exploitation with exploration. Moreover, Lindy Roy elegantly unpacks the risk factors in each of these projects and repackages them as destinations where the visitor is engaged. In that sense, Roy's work redefines the exotic.

Eco-tourism: Nature as Cure

Early tourism might be traced back to the lives of the prosperous Greek and Romans, who spent much of their time in thermal spas or traveled to exotic places for leisure. Interest in travel continued throughout the middle ages, organized however as pilgrimage routes crossing Europe. These travels were often driven by other ambitions: exploration was paired with conquest or exploitation.³ In the eighteenth and nineteenth centuries, the travels changed format again, with the European aristocracy traveling through Europe on "grand tours." A grand tour for a member of the British gentry or a wealthy American would most likely include a health-bringing stay in the Alps. A stopover in the mountains was considered advantageous; clean water and thin air had been proven to cure not only distress but also a variety of ailments from tuberculosis to infertility. Nature's alleged curing impact transformed the perception of nature. The prevailing construct of nature was that nature had been made by human hands, exemplified by gardens. A new construct of nature led to an appreciation of "untouched" nature or wilderness that was previously considered little more than an unsafe obstacle. To travel through the Alps, for example, was considered a hazardous journey. In 1671, when the British aristocrat Thomas Burnett visited the Alps, the



mountains disgusted him as "vast undigested heaps of stone."⁴ His book *Tellus Theoria Sacra* explains his speculations on the origins of mountains, and moreover, spread the fear of mountains. And by doing that, he certainly enticed other British gentlemen to the indisputable challenge of crossing the Alps on their grand tours to civilized Italy, where nature by human hand certainly pleased the British explorers. The widely spread tales of their journeys encouraged the gradual transformation from a disgust of wild nature to a perception of its curative qualities.

The changing cultural constructs of mountains clarify modernity's impact on how we perceive nature to be health bringing. Better hygiene was recommended first by Dr. Ignaz Philipp Semmelweiss (1818–1865) in the mid-nineteenth century, when he advised his peers to wash their hands after visiting the morgue on their way to the nursery. For this simple advice, he was ridiculed. Toward the end of the century Semmelweiss was nevertheless proved right by the Berlin professor Robert Koch who found tuberculosis and cholera bacteria in both the drinking water and bathing water.⁵ These findings caused the bourgeoisie's flight from the industrial, infected lowlands to the clean air and water of the mountains. The first eco-tourists fled the cities for the mountains.

Spa: A Sound Spirit in a Healthy Body

Spas in nineteenth-century Europe were more than curing institutions; the cultural life, and especially the musical life, was extremely rich. Composers such as Johann Strauss and Johannes Brahms spent time in spa towns such as Bad Ischl. Away from the harsh environment of the city, the bourgeoisie retreated to the spas not only for its healthy cure, but also to enjoy a calm, highly cultured lifestyle. Between concerts, promenades, and parties, the visitor was occupied only with how to fill unstructured time. This aimlessness was considered part of the cure, along with mountain air and spring water. Although any spa would have its own theater and music hall, the social life was even more entertaining.



Spa Empress

When Princess Elisabeth, of the politically important Bayern, was wed to the soon-to-be-emperor Franz Josef of Austro-Hungary, she received a villa in Bad Ischl near Salzburg as a wedding gift from her mother-in-law, Sophie. Franz-Joseph's parents had come to Ischl to seek medical advice after a long period of infertility. Apparently, the sojourn in the Salzkammer region succeeded, and the Empress was pregnant soon after the arrival. The crown prince Franz-Josef was born, followed by three brothers, nicknamed *Salzprinzen*, after the health-bringing region. Elisabeth of Habsburg shared her mother-in-law's belief in spa-life. Settling into the modest villa, she added two wings to it, giving the building a footprint that reflected her first initial, E.⁶

Elisabeth was regarded as one of Europe's most striking women and she took much pride in keeping that position. Her starvation diets and exhausting workouts could be likened to the training endured by triathletes today. Elisabeth's outdoor activities were varied: she was an excellent horseback rider, she swam from early childhood, she would run for hours in the steep mountains surrounding her castles, spending her days hiking with her lady-in-waiting as her sole companion. The motivation for this extraordinary amount of activity was obsession both with health and escape. Elisabeth spent her days as the Austro-Hungarian Empress not paying attention to her imperial duties or to her 70 million subjects, but rather to maintaining her lean figure.⁷

Constantly undernourished and ill, Elisabeth believed in the therapeutic properties of the spa, where modern medical research of the mid-nineteenth century called for thin air and spring water, leisurely walks on designated promenades, as well as dances and performances in an environment designed for viewing the surroundings as much as the people. The mountainous vista surrounding the spa was landscaped, transformed, and developed to ensure a connection with the wilderness of the Alps, but it wasn't too dangerous for the aristocracy to be com-

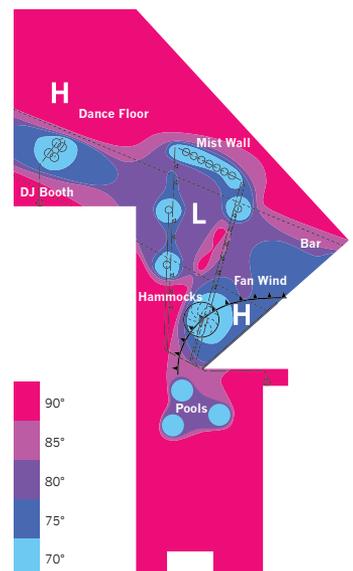


fortable while ascending to improve their health. Balancing risk with cure, spa life was to experience nature as a semi-dangerous challenge while enjoying its curing properties, thus providing a simulated wild nature as a safe treatment for both mind and body.

subWave

Similarly, in ROY's work, nature is objectified and even simulated to create a scenery of leisure. In subWave, the winning design in the 2001 MoMA/P.S.1 Young Architects Program, ROY transformed the courtyard of the P.S.1 Contemporary Art Center in Queens, New York into an urban spa. In the midst of the summer heat, subWave visitors enjoyed a cooling experience. The plan drawing reads as a temperature topography map where high temperatures—rendered red—coincide with hot spots such as a dance floor, DJ booth, hammocks, and bar, and lower temperatures—rendered in cool blue—designate "chill-out" areas where one can soak in a fifteen-foot inflatable pool, take a brisk shower, or just rest in a hammock in the cooling mist provided by atomizers hung from a steel structural system. A system of iridescent "sails" provided shade and created private areas. Multiple moving fans mounted on the concrete wall create a continuous breeze for urban tourists immersed in three inflatable pools. In subWave, ROY designed a temporary thermal space staging water, wind, and shade.

Embellished in the continuous beat of music and splashing water, subWave provides a spa experience not far removed from its nineteenth-century precedent in Bad Ischl. The elements of water, music, and wind were essential to creating an exotic experience, both in subWave and in Bad Ischl. However, in Roy's twenty-first-century iteration, the health-bringing water is provided in multicolored hydration packs resembling IV units and hammocks are suspended between steel



structures instead of view-enhancing stands of trees. Staff costumes are all white, reflecting something both exotic, as well as healthcare-professional chic. Inspired by both extreme sports gear and healthcare equipment, ROY also designed a Swatch watch with an add-on cooling element. A cooling pad for your wrist, the Swatch was to be sold on ice in the bar. ROY frames the thermal conditions and therapeutic activities usually found in a spa in a reduced material setting of steel, concrete, and sails outdoors in a party-like atmosphere. In this way, ROY expands on the material ordinarily used by the architect and introduces elements such as water and wind as materials, in addition to steel and nylon.



The design goes beyond simply being a setting for activity. The space and its paraphernalia script the experience in a simulated landscape where one descends down the stairs flanked by two larger-than-life images of surf in a "Moses-moment."⁸ Designed as an orchestration of events similar to Bad Ischl, subWave stages a setting where one can seek respite from the city; enjoying water as both an element of risk and as a refreshing treatment.







Okavango Delta Spa (1997–)

The Okavango River expands to an enormous inland delta culminating in the severe landscape of the Kalahari Desert in Botswana. An extraordinary landscape in flux, the delta's varying water levels expands and contracts changing the landscape from an uninviting desert during draughts and a flourishing oasis for rare wildlife and vegetation during the rainy season. Fluctuating edge conditions are defined by organic material such as papyrus plants and reed. In a landscape formed by water and organic material, the most solid grounds are delta islands constructed over time by termites. Ever-changing pathways defined by migratory tracks of animals such as elephants, zebras, and giraffes underscores the temporal nature of the delta when seen from the air when approaching the eco-tourist destination.

The Okavango Delta Spa is designed to create an architecture that sensitizes the spa guest to the subtleties of the temporal delta landscape. ROY realizes this design idea in two ways: engaging the site culturally by using local craft in innovative ways and by exposing specific elements found on site in the design of the spa. Says Lindy Roy, "The atmosphere and the environment is really what count in the end. It is not so much about the form. In each of these diagrams, we try to understand how the form engages the environment. And again, what kind of forms lead to attune someone to these invisible flows that are apparent, such as the Bird of Prey that hovers on the airfoils creating circles in the air."⁹ Although designed for the guest to tune into the dis-



Okavango River Delta

creet changes in the landscape, invisible dangers—such as the crocodiles lurking in the papyrus reeds—might also tickle an eco-tourist's desire for adventure.

To further the point of local interdependencies, Roy illustrates its strategy by comparing two marionettes.¹⁰ Two marionettes are set in the exactly same pose. The first marionette has all joints connected separately to a Cartesian cross that is operated by the puppeteer. The strings add up to a large, complicated cluster. Illustrating the advantages of interdependency as opposed to dependency (marionette to puppeteer), the joints of the second marionette are connected to itself, allowing for a few strings to hold the same pose. As part of the architectural strategy, Roy assumes less control from the outside, taking advantage of the on-site potential in terms of knowledge and materials. As the Okavango Delta is only accessible from the air, the spa utilizes a landing strip abandoned by another camp. Conservative use of resources, and in large part relying on local materials as well as know-how, are parts of Roy's design strategy.

"Designed to slow down and to attune the guest to the pulse of the delta," Roy's proposed structures both reflect and relate to the dynamics of the site: the changing water levels and the inherent mobile character of the delta where the ground levels are negotiated by termites and boundaries by papyrus beds.¹¹ Flora and fauna are investigated and intricately woven into the design strategy for the spa.

The local population situate their villages around abandoned termite mound towers, as termites create the only solid land in the delta. Roy

investigated both an abandoned mound, and conducted subsequent research into swarm dynamics that revealed the role of pheromones and magnetic fields in termite architecture. By way of understanding the mounds both theoretically and practically, Roy developed an understanding of the construction of the delta landscape.



Just as the local population builds around termite mound towers, the Okavango spa is situated around four islands of abandoned termite mounds. Distributed along the lines of seed dispersing patterns, ten propeller-shaped guest-units are connected by floating walkways. Depending on the season, the delta consists of six-inch to twelve-foot-deep waters, so a flexible system of railings was designed to fluctuate along with the water levels. Below water, a simple grid of waste management and infrastructure pipes runs along the floor of the delta, connecting to a series of pumps and tanks that supports the spa. The two separate systems of infrastructure, one utilitarian and the other experiential, demonstrates ROY's desire to combine the strictly functional with the highly sensory.

To further sensitize the spa guest to her delta surroundings, the use of reed in the spa's situation is critical. Reeds form natural clearings in the delta, one of which the spa sits in. ROY uses reed boundaries and papyrus plant walls to create intimate areas inside the guest-units. The parabolic shaped roof which shelters the unit also creates natural ventilation within it. The turbulence created by the parabolic roof also attracts wildlife. As depicted in one of the renderings, a bird rides the airflow beyond the thatched roofs. Two layers of high-tech fabric protect the guest unit from the delta landscape and mosquitoes without compromising the view. Parts of the enclosure embrace the naturally occurring waters, so that a guest can descend into a fiberglass tub while





surrounded by the delta waters after taking a shower in water that has been heated in solar drums. The high-tech fabrics create an ambiguous boundary of layered translucency that can be changed by the guest.

Delta Culture

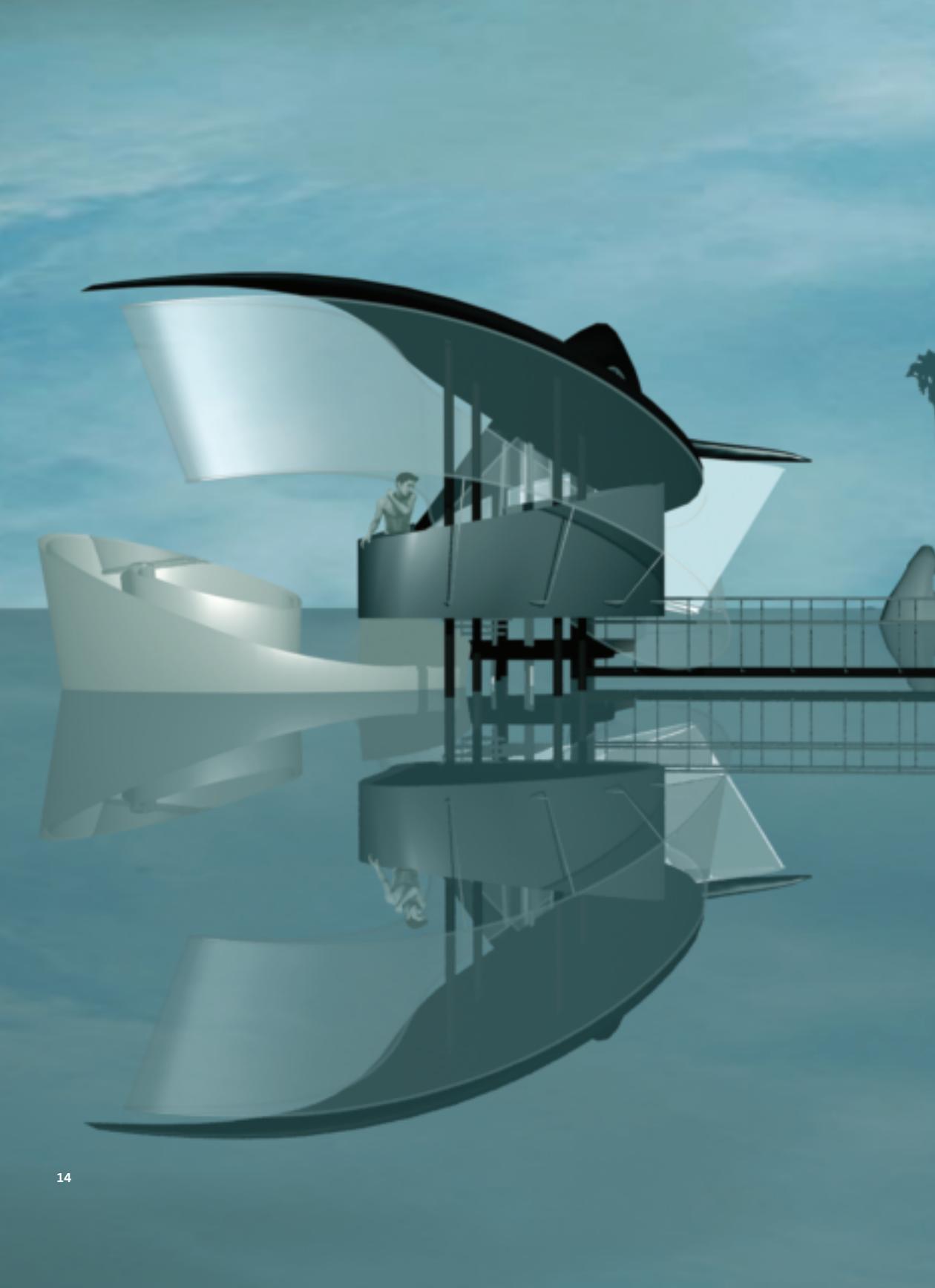
ROY draws on vernacular building methods and utilizes local materials in innovative ways. Inspired by local tradition of using cone-shaped thatch roofs, ROY makes use of the traditional material in giving the roofs a new hyperbolic parabolic geometry. Maintaining the found logic inherent in the material, these new shapes maintain the steep forty-degree angle required to keep the roofs dry during the rainy season. It takes these undulating surfaces two to three seasons to turn to the soft aluminum color of older thatched roofs. This belief in the vernacular continues as a construction premise; thus ROY utilizes the knowledge and tradition of local craftspeople to construct these innovative roof structures. In re-inventing the vernacular, ROY simultaneously reflects and relates the eco-tourism destination to local traditions while creating a clear, contemporary, yet exotic identity for the spa.

Another local tradition that caught Roy's attention was grass basket weaving. Balancing local craft with design innovation, Roy designed highly flexible guardrails made of fine fiber-optic cable that can be crafted locally using traditional weaving methods. Powered by solar energy when in place, these highly efficient luminous strips light the way to the guest unit.

Spa Life—Delta Style

By balancing subtle landscape alterations with high-tech solutions and traditional methods, ROY creates a framework that sensitizes the spa guest to the beauty of the surrounding landscape while creating an environment in which the guest can immerse herself in the dangers of the delta. Coming back from a day of tracking game and photographing elephants, zebras, and giraffes, guests can safely enter the waters of the delta and swim alongside large reptiles—thick-skinned, long-bodied and



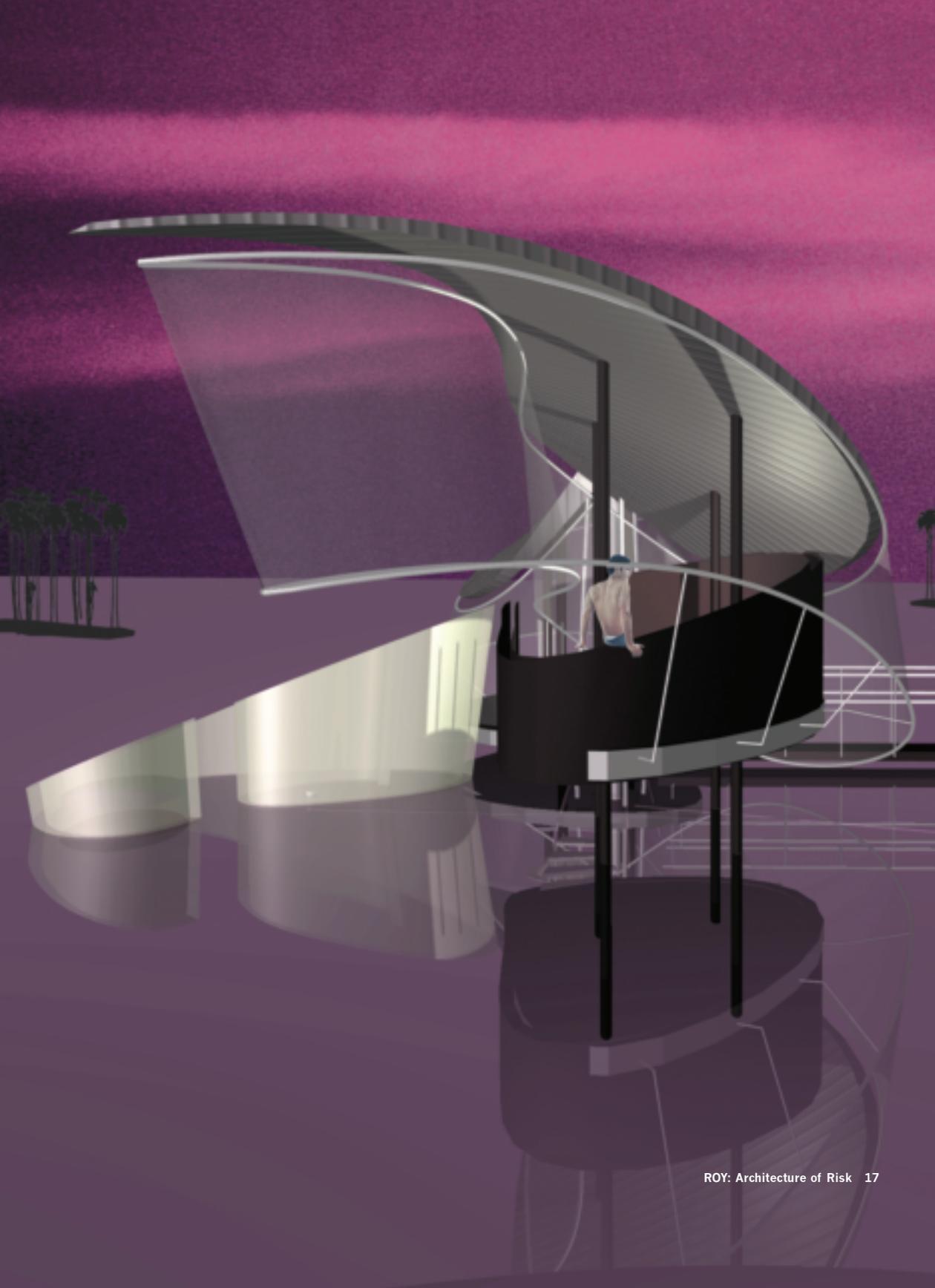




carnivorous—in a crocodile resistant lap pool. The heavy steel frame and steel mesh pool has a wooden deck for lounging in addition to an out-board motor that allows the user to move if the tail of a crocodile is slamming against the underwater swimming cage. By capturing the tourist in the cage rather than the raging reptile, ROY reflects on the delta as one of the last environments in which the animals roam, and in that sense, demonstrates the swimming guest as being exotic in the delta landscape. In Lindy Roy's words: "Swimming in that pool, you start to feel the strength of the architecture around you ... protect you so that you won't be attacked. [This is] an added note for you [as a guest] to understand your own vulnerability."¹² The architecture of the spa can be seen as an instrument that supports the guest's residency and stages the risk-laden events. The delight in being in a beautiful place is paired with the life-threatening risk of being there. The exotic delta-style, then, includes both a connection to nature as well as disconnecting from it.

Okavango Delta Spa, at first glance, might seem to have little in common with its precedent Bad Ischl. But both places provide an escape from an urban lifestyle where being in control is required. From a culture of safety and heightened security, from homes to airports, the spa experience provides release from a highly controlled urban or suburban environment. Although in the spa, the guest's whereabouts are highly controlled by design, nature provides the relief from urbanities. The guest gives her life over, at least for a little while, to a place of extraordinary sublimity, of the delta or the mountains. The perception of

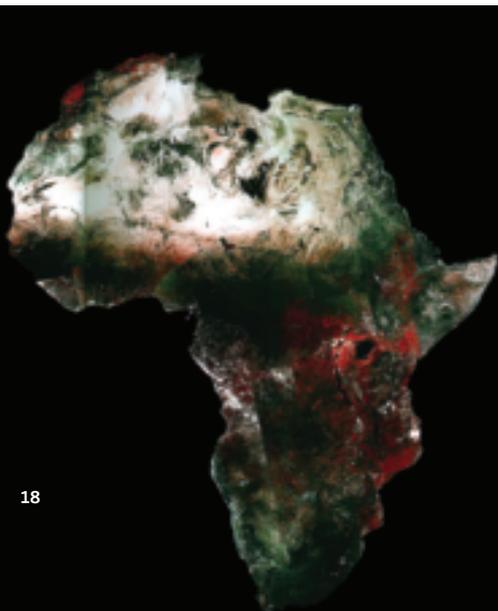




the mountains changed from being uninhabitable places where locals believe dragons and devils resided to a posh health-enhancing destination where thin air and water are the prime commodities. In her contemporary context, Empress Elisabeth could be seen as an adventurous traveler—seeking danger and delight just as much as a guest at Okavango. A contemporary eco-tourist would balk at the Alps and its mass tourism and relative safety and look instead to the exotic, the hard to reach, the dangerous—all in order to be released from the boredom of a controlled urban environment.

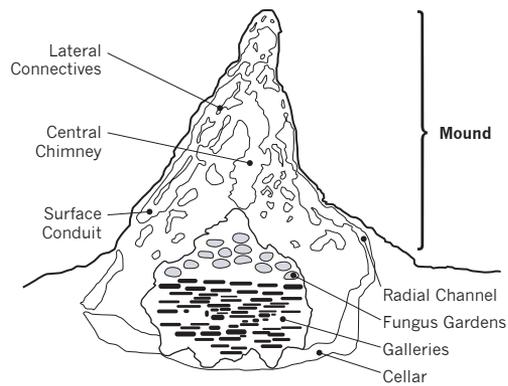
Delta in Danger

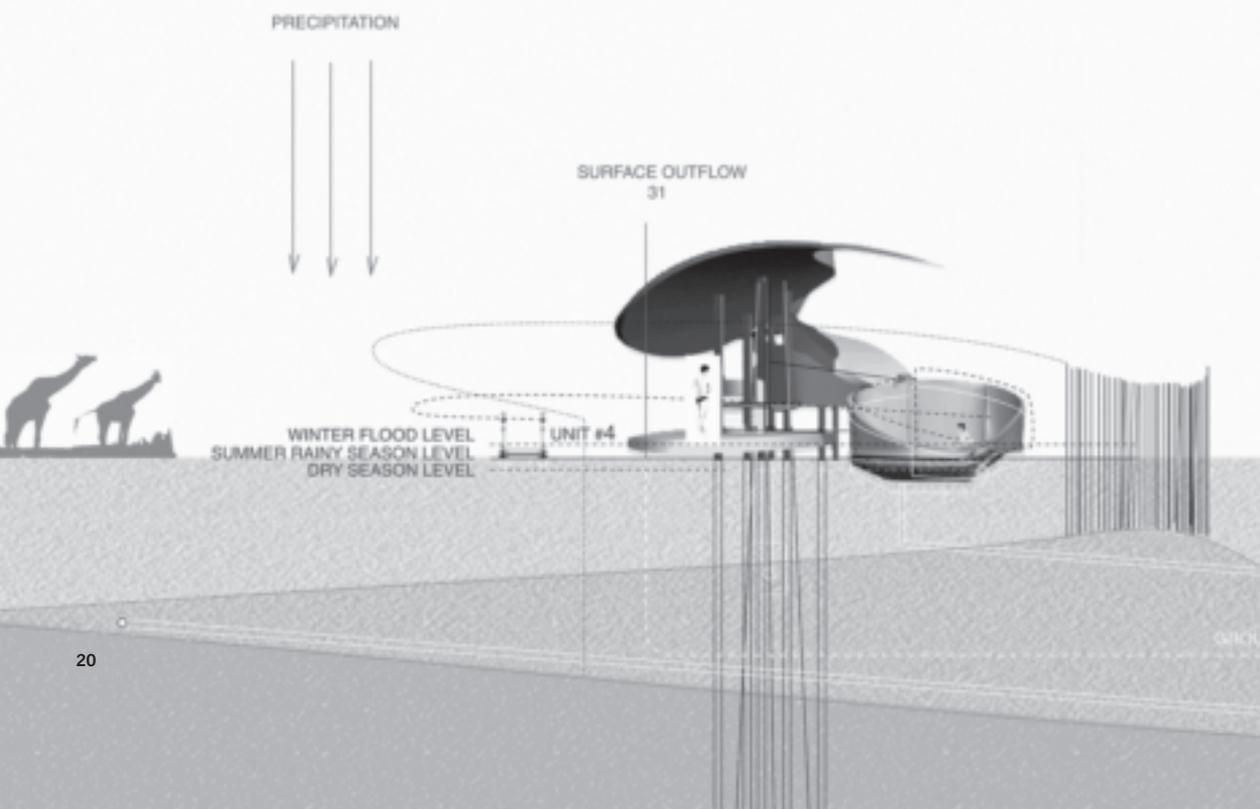
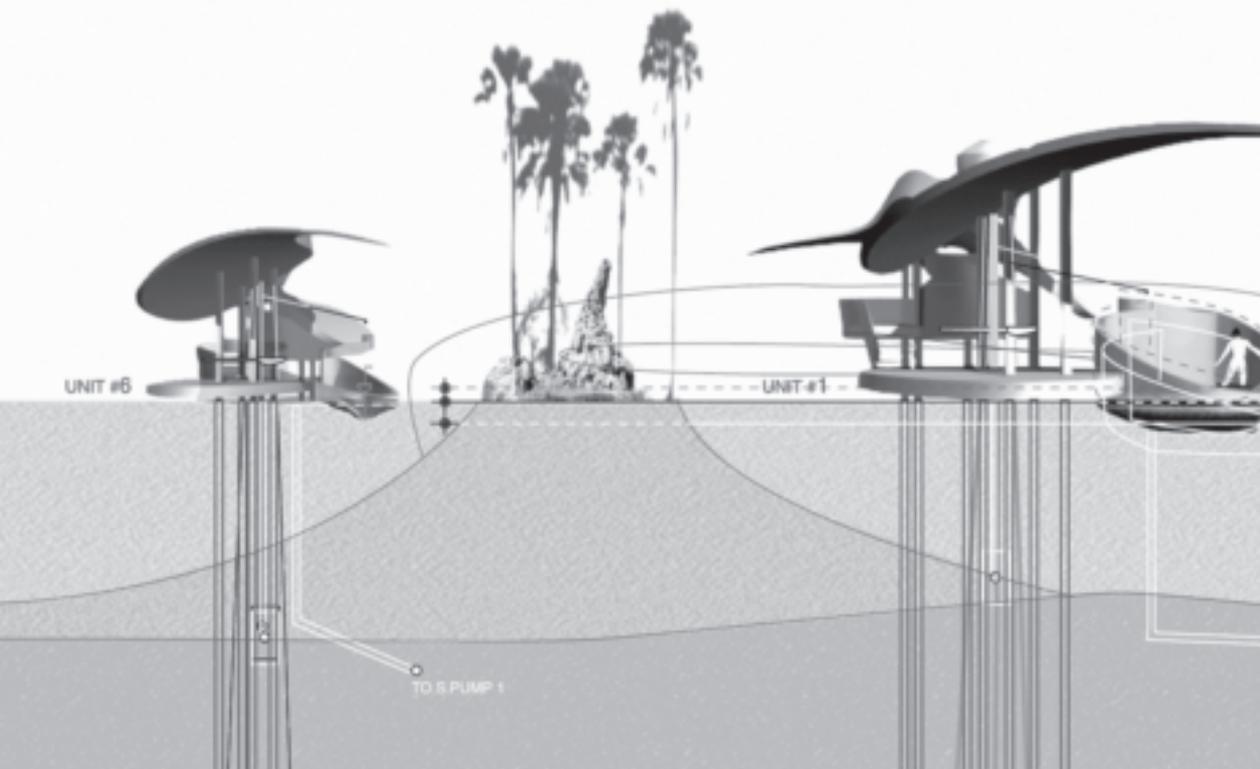
Upriver from the Okavango Delta in Botswana, a series of elaborate hydro-electrical power plants are on the drawing table in neighboring Angola and Namibia. The Epupa Falls Dam project proposes to dam the Cunene River that flows into Okavango River, causing large-scale damage to the watershed for the inland delta as well as displacing thousands of inhabitants.¹³ Another project, the Popa Falls Dam, is only forty kilometers from the delta.¹⁴ This project includes damming the Okavango River, thus threatening the delta even more directly. Although the proposed plants will generate power for large areas of Namibia and Angola, the environmental consequences of dam construction are severe, possibly turning the delta into a desert, dissipating into the surrounding Kalahari. This could have devastating effects, not only for the area's varied wildlife or the delta's rich plant life, but also for the inhabitants of the delta.

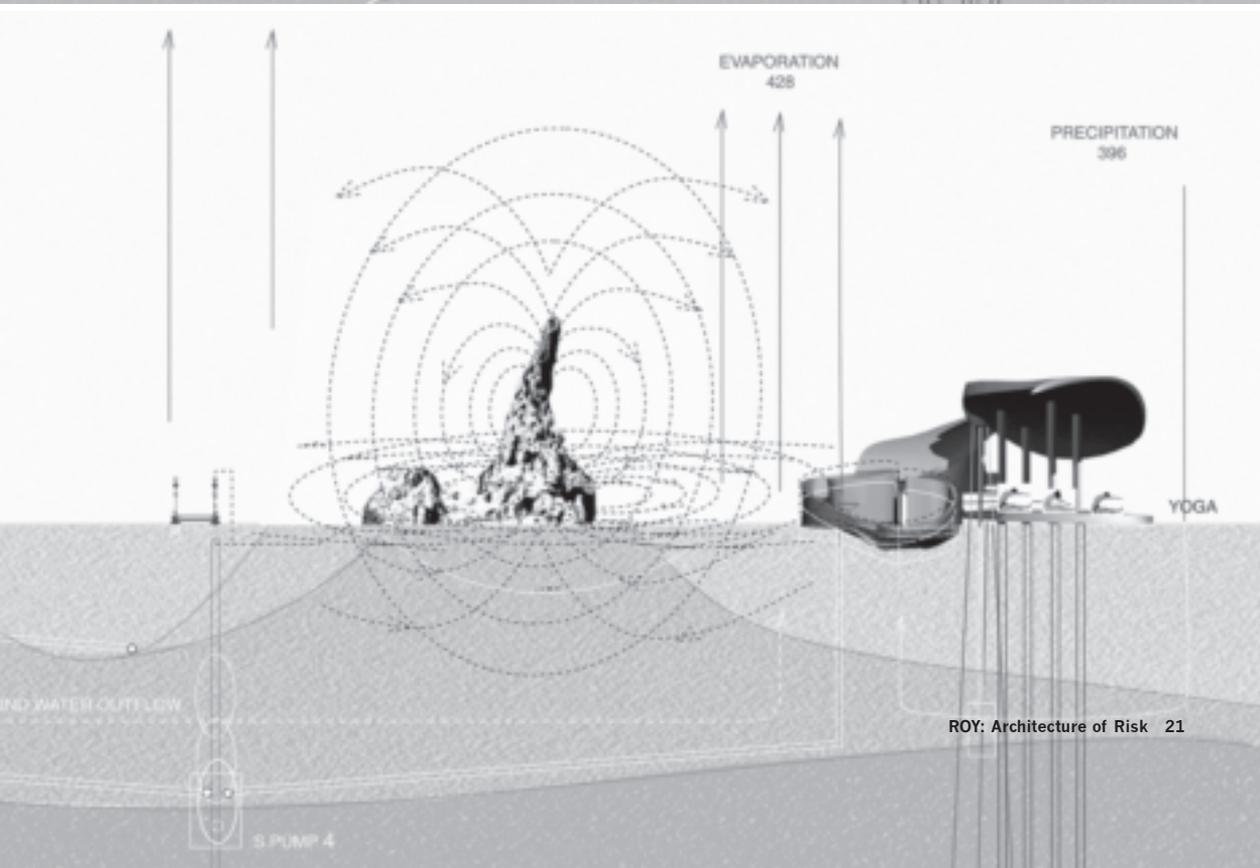
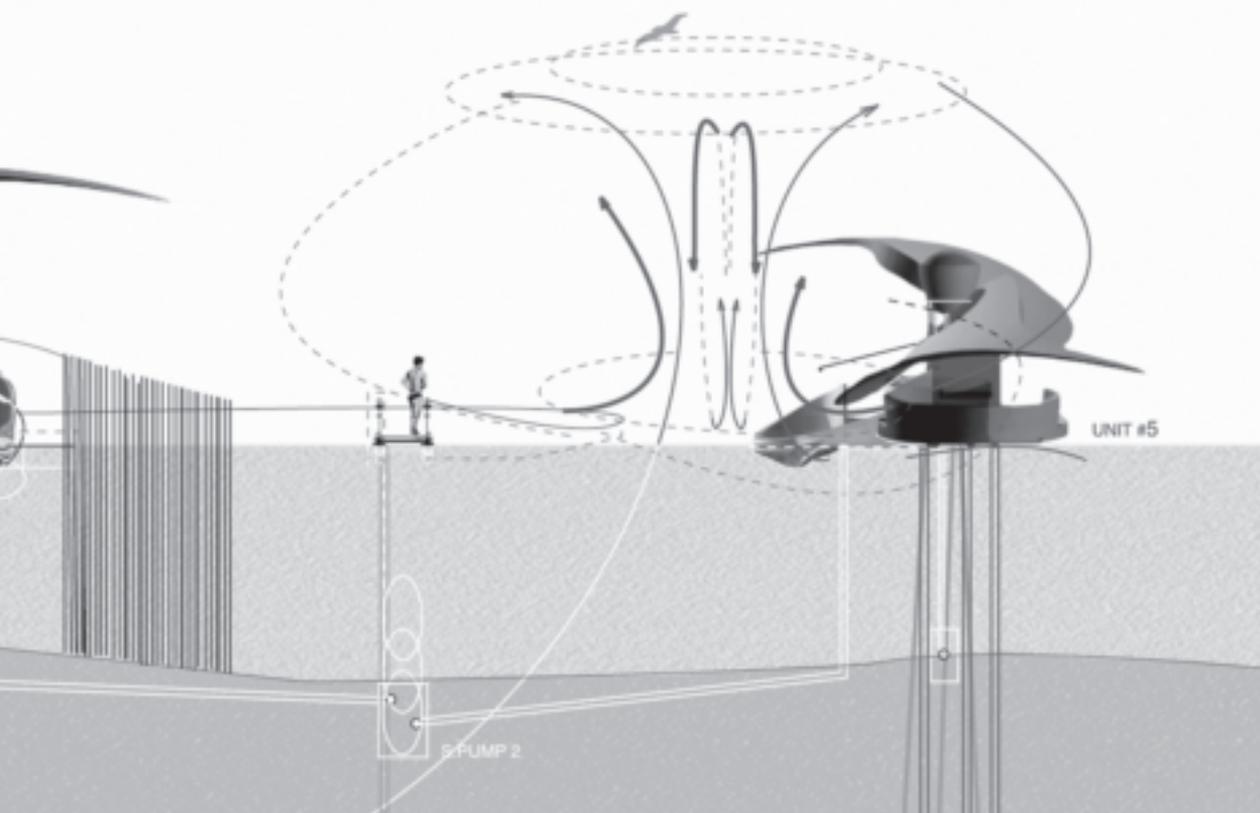


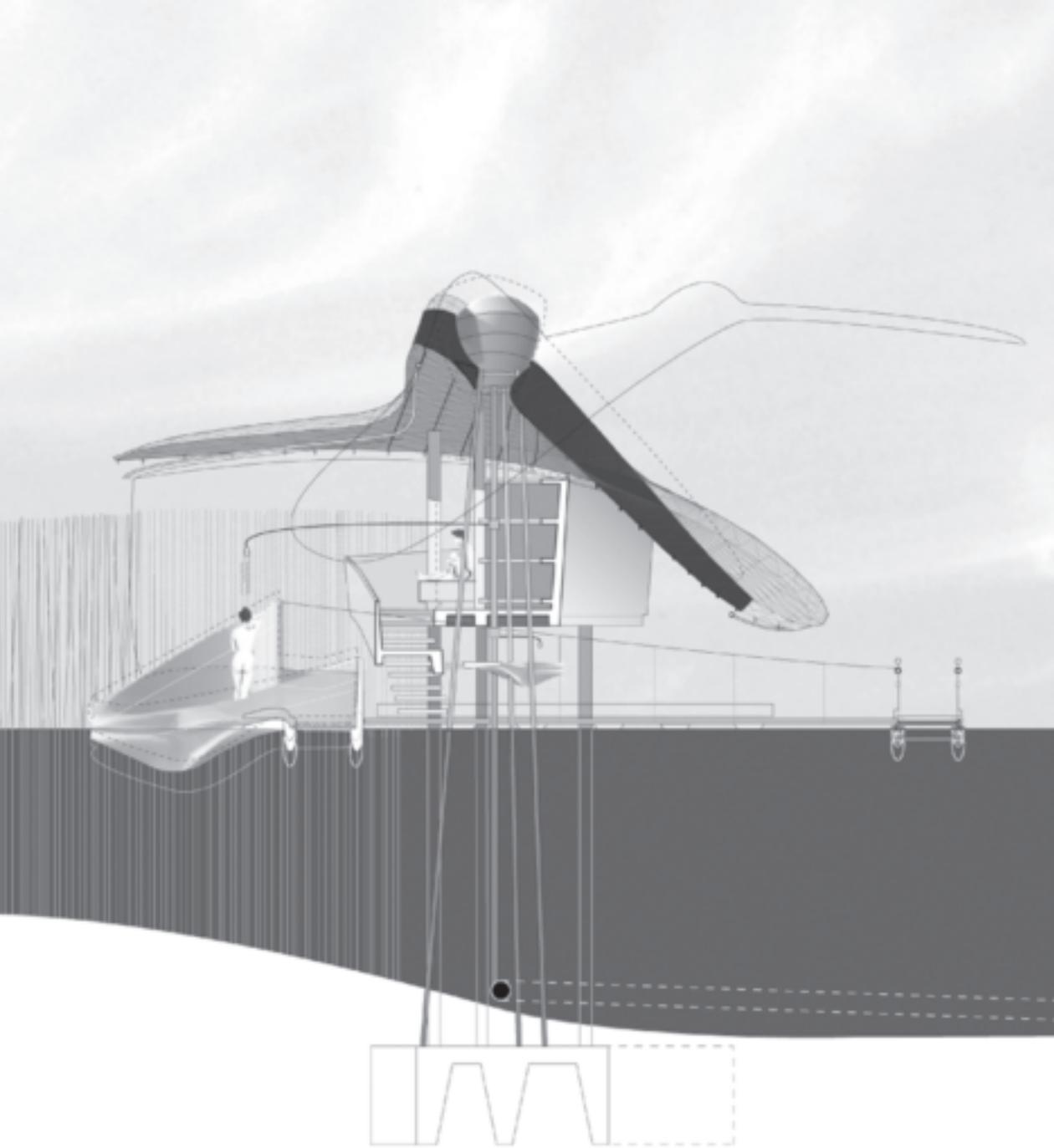
In this geopolitical context, ROY's proposal reads as a relatively modest, environmentally sympathetic development that, with other carefully planned projects, can help the region's economic outlook and international visibility, thus ultimately contributing to the preservation of the delta from radical exploitation. ROY's proposal can be read as a commentary in a larger debate where architectural projects can serve as a proponent of economical change in an area of ecological risk.

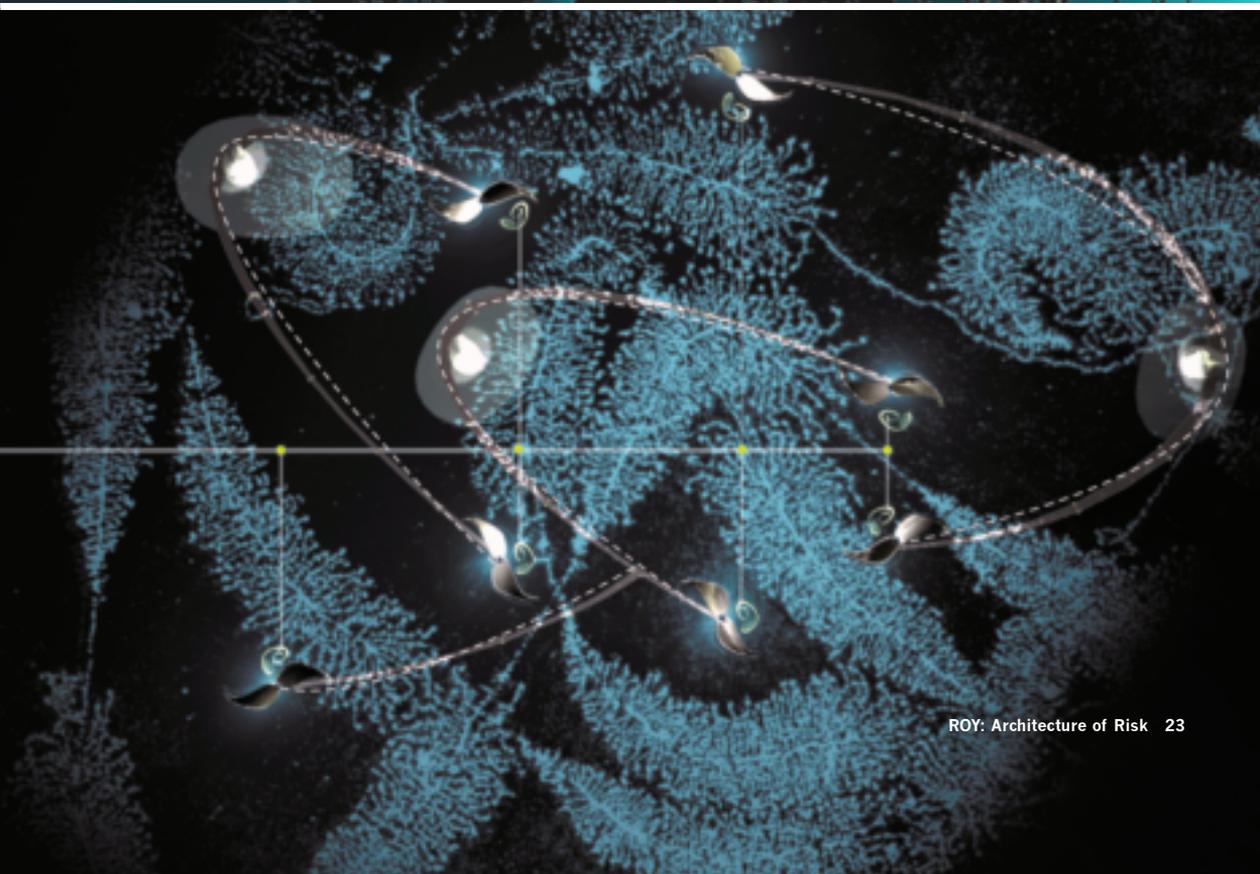
PROFILE OF A TERMITE MOUND













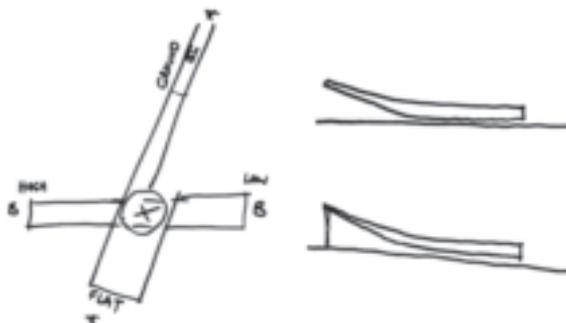




Wind River Lodge (2001-)

From the Okavango River Delta's extreme heat to the extreme cold of the Chugach Mountain range in Alaska, ROY equates the equally severe environments and claims they both call for similar environmental knowledge. Commenting on the seemingly inhospitable terrain while flying over the glaciated Chugach Mountain range, Lindy Roy says that it was reminiscent of flying over "Namibia's desert on the west coast of Africa where the dunes meet the ocean."¹⁵ Translating a familiarity with extreme landscapes from Africa to Alaska, ROY's Wind River Lodge celebrates an innate knowledge about extreme surroundings that comes from experiencing the landscape firsthand in multiple conditions. It also expresses a fascination with the life-saving gear necessary when conquering the seemingly serene white landscape of glaciers and potential avalanches.

ROY designed Wind River Lodge for Alaska Rendezvous Heli-ski Guides, operating in the Thompson Pass area in the Chugach Mountain range, between Anchorage and Valdez in south-eastern Alaska. Stunning in its natural beauty, the Chugach range rises almost 9,000 feet, providing rare powder moments for lift-free, virgin-snow slopes only accessible by helicopter. Wind River Lodge is not an ordinary lodge; it combines the utilitarian requirements for a helicopter landing area with the leisure program of a lodge. The 52,000 square foot structure includes three helipads, a control tower with a bar and maintenance hangar, and a hotel with an adjoining warehouse space. ROY proposes a cross-shaped plan that intersects the three heli-pads with a combined heli-hangar and control tower on axis with the hotel. Perhaps reflecting the adventurous



attitude of its users, the heli-ski resort marks the snow-clad landscape with a large x visible from the air, a stark figure in the landscape contrasting the Chugach range with its knife-edged peaks and glacier-filled valleys.

Describing heli-skiing, Roy says that it is a sport that "combines paramilitary precision and control with leisure."¹⁶ Requiring specific gear and first-hand knowledge of the terrain, as well as a fair amount of recklessness, skiers are lifted up by helicopters atop peaks to then ski down virgin slopes, sometimes led by experienced guides. Balancing extreme weather with the dangers of avalanches, snowboarders and skiers are equipped for survival while hunting for powder in dangerous slopes. When caught in an avalanche, suffocation can occur when a mask of ice (caused by the freezing of the moisture in the skier's exhalations) immediately forms over the face. A skier can often prolong life until they are found (with help from the transmitters they are also wearing) when equipped with safety equipment such as an AvaLung™. Worn around the torso, the AvaLung™ moves the exhaled air to the back of the skier, and therefore allows the skier to breathe. Ironically, the AvaLung™ has saved lives in a sport that often releases avalanches. A sport for the thrill-seeker, says Roy, heli-skiing attracts a "combination of A-type risk-challenged guys, as well as slacker types who wash dishes and go in the helicopter whenever there is an empty seat."¹⁷

To be built in three phases, ROY proposed that the heli-pads would be the first part of the project to be built. Renting out the two extra pads could finance the later development phases. Phase two would include the helmet-shaped control tower and the roof that covers the hotel, providing an enclosed helicopter maintenance hangar as well as a bar. While the first phase of the lodge concentrates on the necessities for running a helicopter pad, the second phase intro-



The AvaLung™

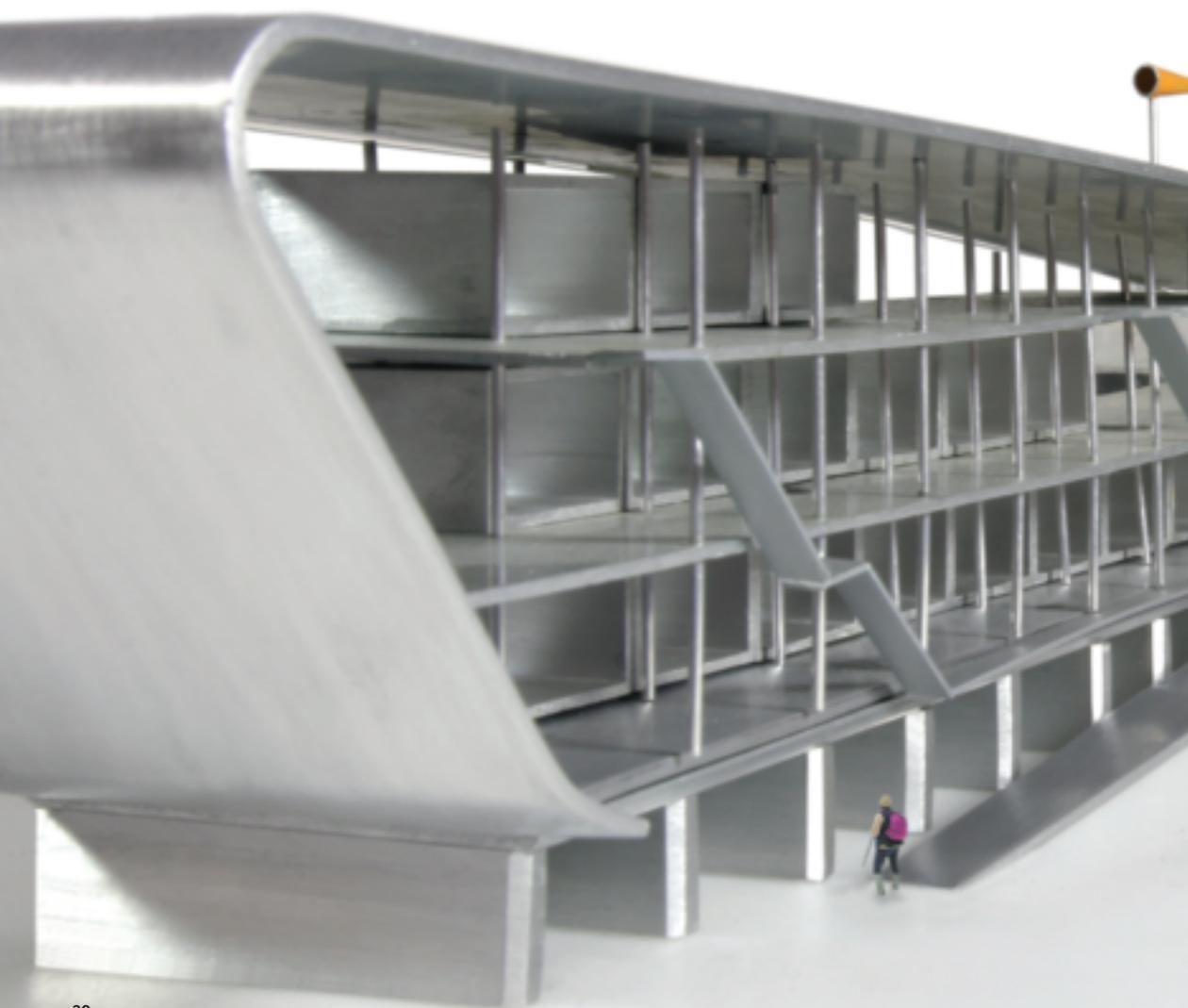


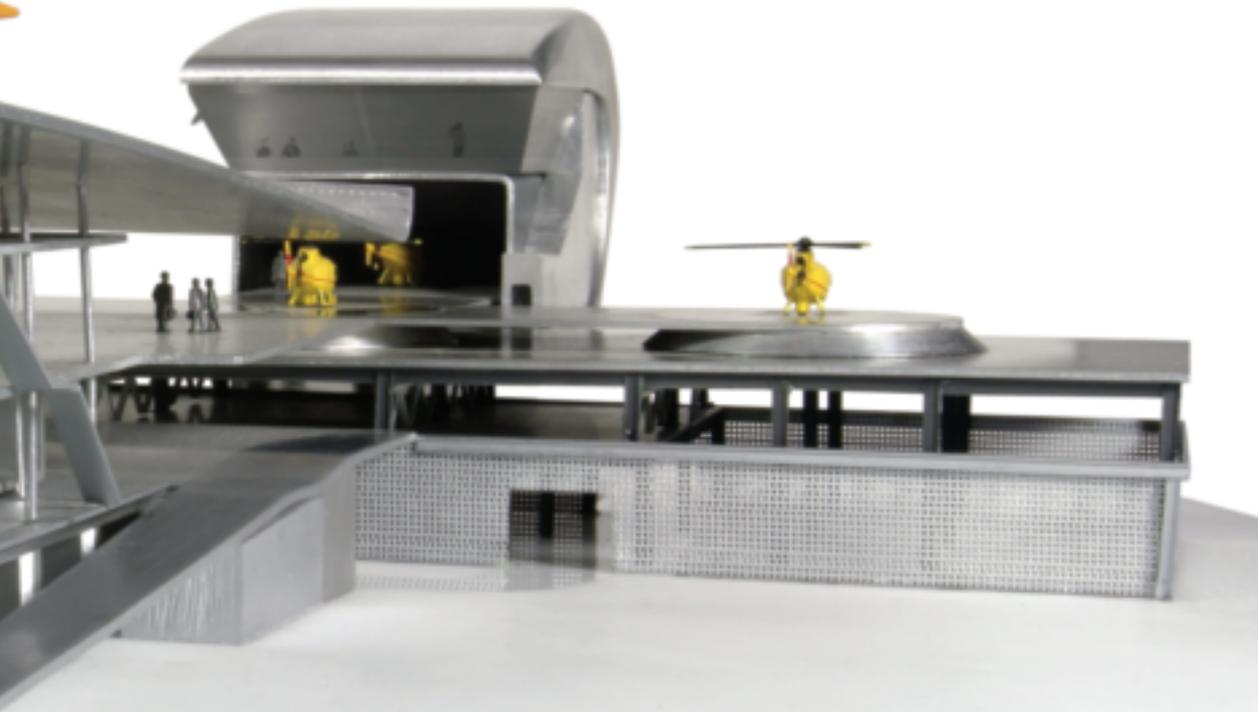
duces the leisure program. The control tower doubles as a bar and the shell of the hotel, used as RV parking until phase three: the installation of the pre-fabricated hotel units that slip in under the roof and completes the Wind River Lodge.

Both the twenty-six-room hotel structure and the control tower are pre-fabricated units built in shipbuilding steel, a material relatively easy, says Roy, to ship up to Valdez from Seattle on a barge, and then transport by truck to the Thompson Pass.¹⁸ Similar to the Okavango Delta Spa, where ROY re-invented the use of thatch as a building material and relied on local craft found in the area, ROY proposes a material strategy that relies heavily on existing local knowledge. In Alaska, ROY re-interprets the shipbuilding industry and applies it to architecture fabrication. Alaska can still be seen as a frontier location, where most goods are shipped in from Seattle and other locations. In that context, Seattle, though far away geographically, is conceptually local to Alaska. In utilizing this untapped material and craft-based resource, ROY creates an opportunity to conceptualize architectural production, and to use local materials and know-how.

Not limited to a material connection, the shipbuilding influence is also found in the lodge's form. Sitting on a series of concrete fins, the ship-like building with a profile of a tanker floats above the volatile arctic landscape, situating the building above the snowline in the winter, and above the melting waters in the spring, while the rich summer flora grows rapidly around it.¹⁹ Introducing a contemporary form to an anti-mainstream tourist industry that rarely uses anything other than RVs or,



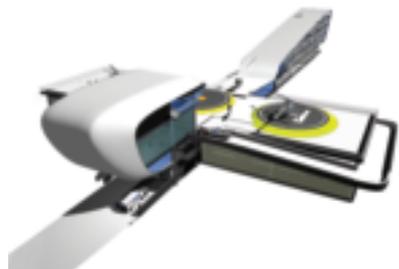




if they're splurging, a log cabin for accommodation, the continuous undulating surface wrapping both the control-tower and hotel is somehow familiar in its linkage to maritime environments, and therefore to the broader cultural context of Alaska.

While the heli-skier desires untouched powder slopes, and is willing to risk life for the release the contact with this environment gives them, others are opposed to the heli-skiing industry's impact. Major concerns are that the helicopter activity would disturb habitats of birds and animals, and also that the frequency of skiers on the mountains would eventually release more avalanches. Another concern is the impact of noise pollution from the helicopters on residential areas. In Haines, Alaska, journalist Steve Williams reports on the ongoing debate between several stakeholders in developing guidelines for heli-skiing: national interests such as the USDA Forest Service and the Federal Bureau of Land Management (BLM) paired with the regional and local interests represented by Haines Borough and the City of Haines, as well as special interests such as the Commercial Helicopter Service Area Board and the Upper Lynn Fish and Game Advisory Committee took part in developing the first guidelines regulating the heli-ski industry.²⁰

A major concern is the nearby Chilkat Bald Eagle Preserve, where helicopter flights are prohibited. In addition to the eagles, biologist Jeff Denton of the BLM is concerned about other wildlife habitats, "Bears and wolverines are coming out of their dens around the first of April and should be left in relative quiet." Also goats are sensitive to noise pollution: "In April, the weather starts to break and goats are extremely vulnerable. They're trying to get to their kidding area and they can't be diverted." The Haines area has devoted certain flight corridors to the heli-ski industry, while limiting the season to 1000 skier-days per season.²¹ Heli-skiers must stay away from other un-motorized tourists in the mountains and choose other slopes when they see them.





While the protection of wildlife has been a priority of the development of the plan regulating Haines' heli-ski operations, the heli-ski industry opposes the plan. Southeast Backcountry Adventure's Scott Sundberg says, "This pretty much shuts the industry down. We've already heard from several clients that told us they're not coming back." The wildlife concerns halt the helicopters in the spring months, dramatically impacting the heli-ski industry. Sundberg continues, "The majority of our bookings are between March 30th and April 15th. It's when everyone shows up, because they're getting thawing conditions down south. Alaska is kind of the last place they go."²² The industry's claims that the economic impact of the regulations has not been considered enough and that the regulations force them to close down their businesses. Jim Conway of Teton Gravity Research says that they will not be returning to Haines to film a television program on snowboarding that would have brought a crew of sixty-five to Haines: "When we got the contract, Haines was one of the first locations that came to mind, but now we're thinking Jackson Hole instead."²³ While the industry struggles to be heard, some locals question whether the heli-ski industry is in fact a business, or if it is just a recreational activity, since "a couple of the operators have said that the only reason they are in the 'industry' is that they want to go heli-skiing themselves, and as long as they can break even and get to go skiing, that's good enough."²⁴



ABOVE:
Stellar Snow Crystal,
Depth Hoar Crystal and
Grain Cluster
ABOVE RIGHT:
Econovan-turned-RV



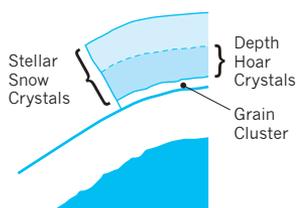


While roughing it in her custom Econovan-turned-RV, one skier takes the risk of heli-skiing very seriously, and trusts her knowledge of snow, topography, and meteorology to avoid the avalanche-risk. Says snow-board-diva and world cup winner Victoria Jealouse, who works with Teton Gravity Research, "I always take the safest route and approach wherever we are as if it is high avalanche hazard. [...] The key is to take the safest line up and down regardless of where others may hike, stand or ride. Always be thinking, if the snow releases, which direction is it going to go, and avoid that area."²⁵ While heli-skiers are after the ultimate experience of untouched powder, some skiers go even further in defining ultimate skiing: *self-ascent* is the only way to go. "Every year, my best turns are down this accessible, yet lift-free, heli-free, and sled-free mountain. An undulating series of rollers, a couple of drops, and some pillow lines makes for a worthy ride that evaporates any strain of the hike."²⁶

Exotic Lodge

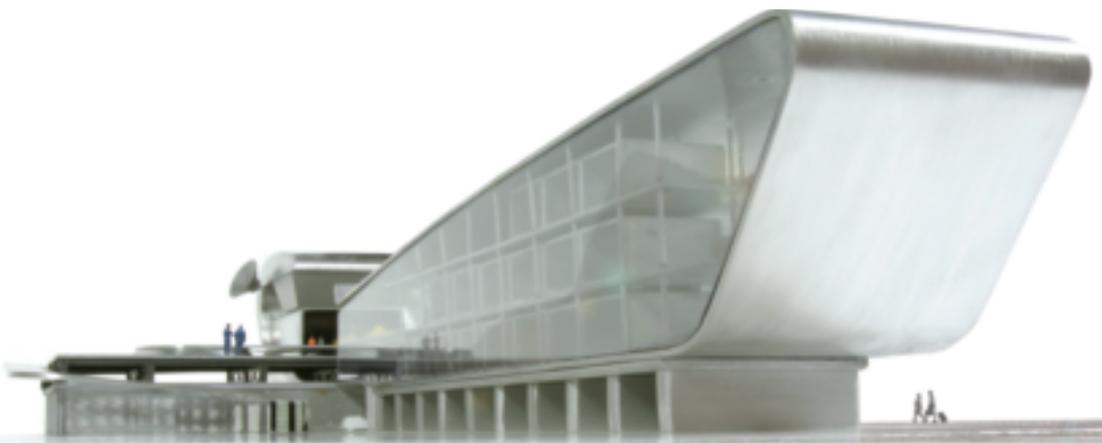
The Wind River Lodge exposes the classic conflict between nature preservation and exploitation, where multiple players have stakes in the same area, and perceive nature differently. The locals are split: some see heli-skiing as a resource of economic development, and others see it as destructive to the other leisure industries, as well as to the wildlife and their own quality of life. The engaged governmental agencies on state and federal levels are taking a conservative role, preserving land and regulating flight hours and paths. In Wind River Lodge, ROY's architecture exposes the "roughing it" culture of the thrill-seeking skiers, while introducing a contemporary formal language, referring to both skiing gear and ship-building, thereby emphasizing the connection to local industry. Because these elements are foreign to buildings, Wind River Lodge can be seen as an exotic building. In a context

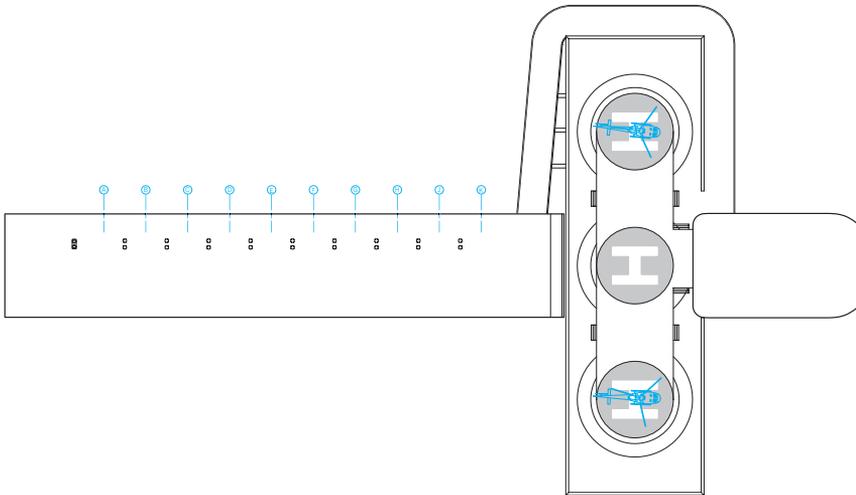
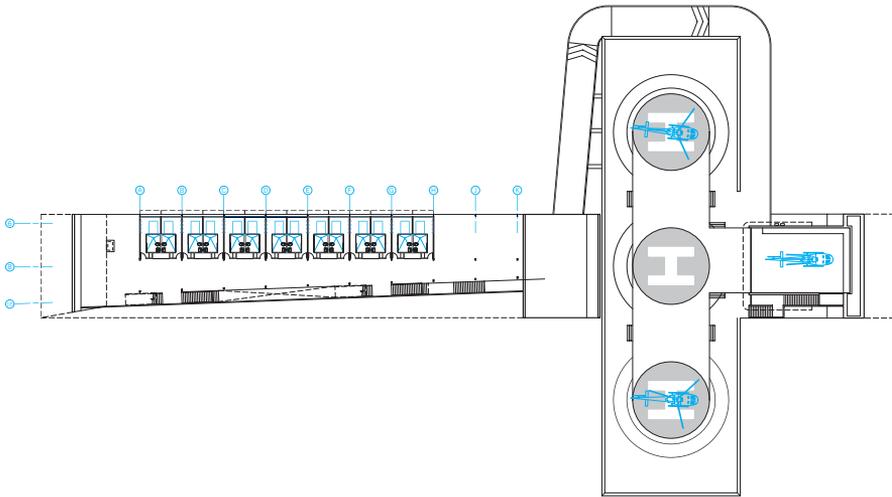
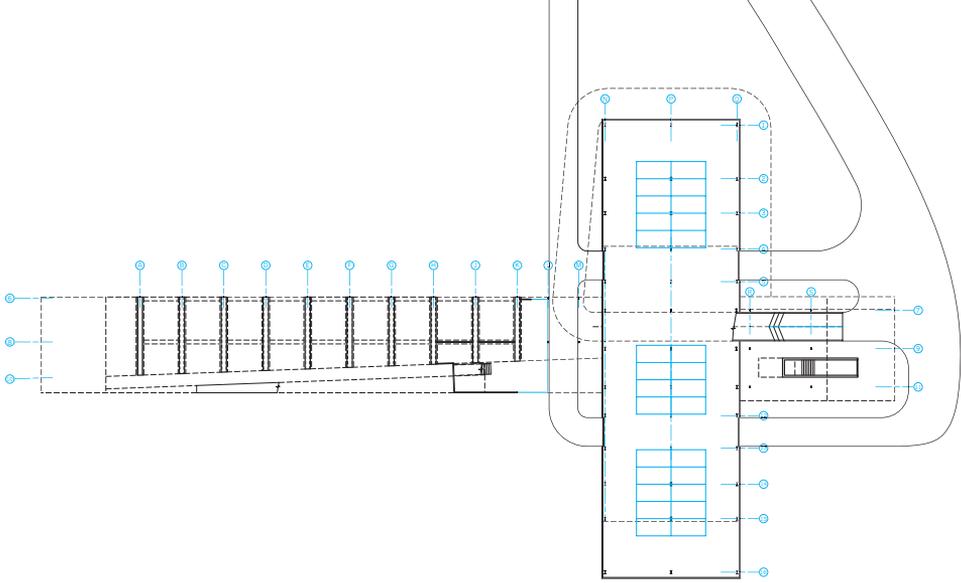
SNOW PROFILE OF A SLAB AVALANCHE

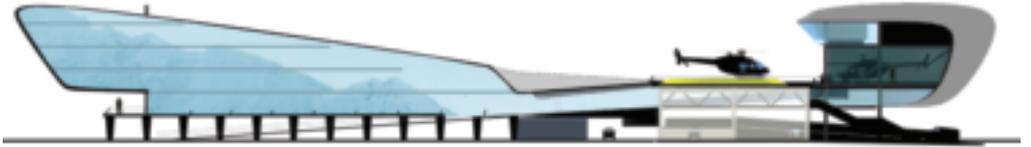
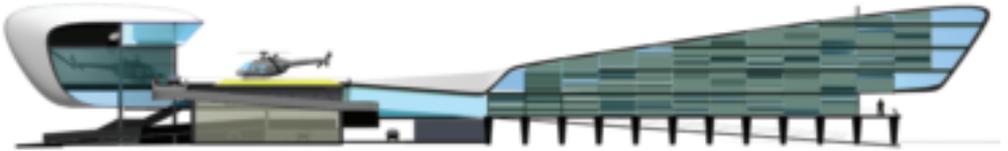
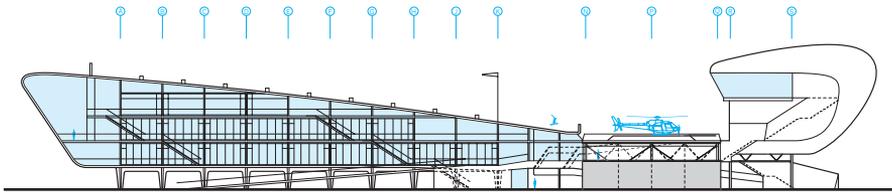


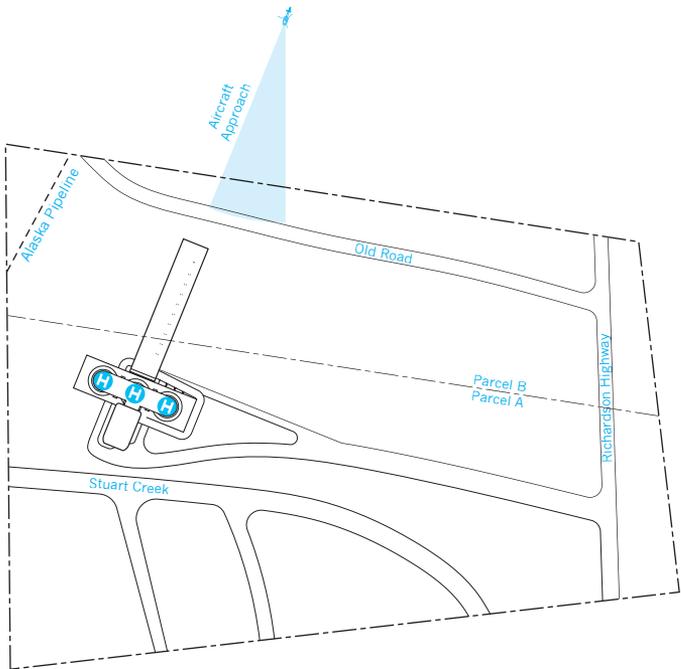


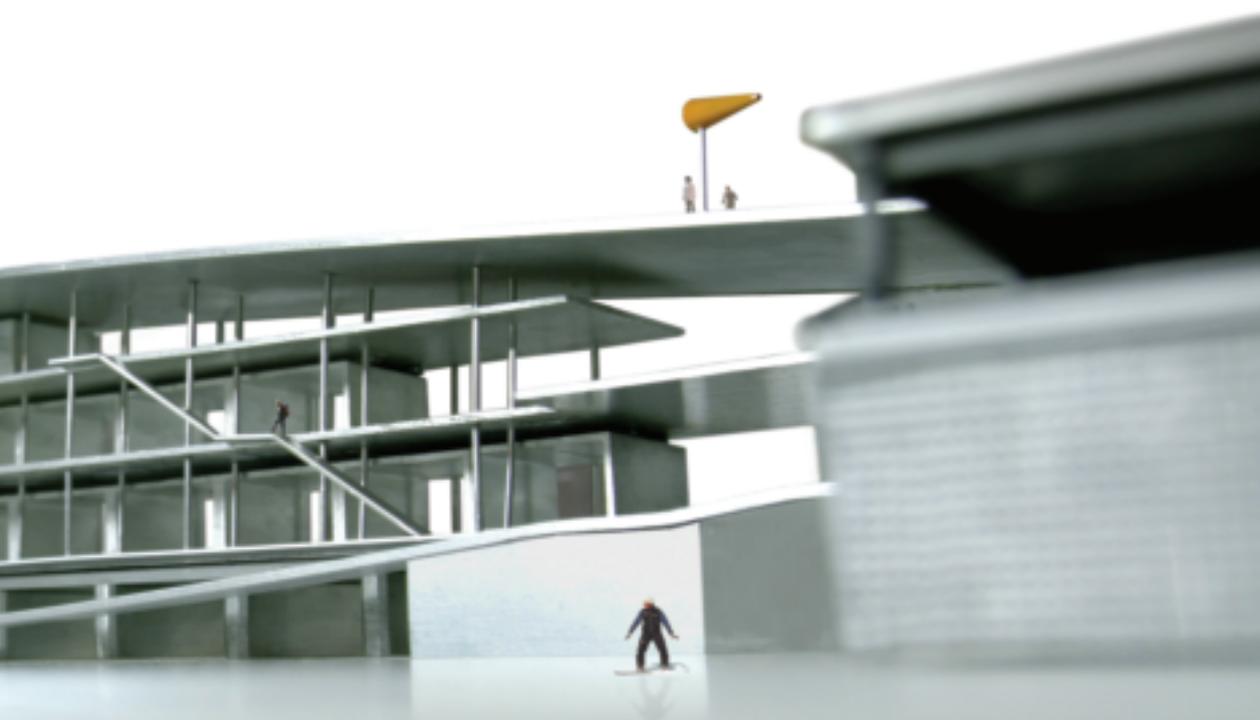
where the buildings largely reflect opportunity for fast revenue, they are no different in construction than buildings in the lower forty-eight, despite having to withstand a rougher climate. In this way, the Wind River Lodge would put extreme skiing on the architectural map, by creating a new building type for a generation of skiers for whom log cabins no longer reflect their lifestyle.















Cancer Alley (2001)

Prosperity and Poverty

ROY was invited by photographer Richard Misrach to respond architecturally to the context of the Mississippi River Corridor, nicknamed by environmental activists Cancer Alley. With his portfolio of politically charged photography, Misrach was commissioned by the High Museum of Art in Atlanta to document the South, and he chose to document Cancer Alley and its ecological risks.

The Mississippi River from Baton Rouge to New Orleans has a number of identities, each reflecting a different stakeholder's claim. Much of the white community knows it as the "Great River Road," recalling the heyday of sugarcane plantations along the river and its draw today as a tourist destination. The Cajun population refers to the area as the "Second Acadian Coast," referring to the early French Canadian refugee settlements. The Louisiana government knows it as the "Industrial Corridor," conveying its political stake in the development of the area while stakeholder corporations proudly identify it as the "Chemical Corridor," connecting it to the petrochemical industry that dominates the site. Lastly however, the actual inhabitants of the area, a predominantly African-American population, have named it "Cancer Alley." The area's various names illustrate coexisting perceptions of the site, from the historical, political, and corporate while also reflecting the concerns of the area's current inhabitants.²⁷



ABOVE: Mississippi River
LEFT: detail, Holy Rosary Cemetery
and Union Carbide Complex, Taft,
Louisiana. ©Richard Misrach 1998

Cane, Chemicals, and Cancer

"Great River Road" marks a selective nostalgic return to Mark Twain's Mississippi: a mythical site of adventures. Tourists visit grand plantations with their historical ruins being slowly embraced by the marshy grounds. Where cane sugar and cotton once were harvested, a few plantations remain but they are now framed by chemical plants. Clarence John Laughlin points out the significance of plantation architecture in his photographic essay from the 1940s, before the chemical industry took root in the area. This forgone grandeur continues to have cultural significance in the perception of the American suburban landscape, (mis)quoted as a model for today's suburban carbon-copied McMansion, devoid of both the Mississippi riverfront and the original European references. The cultural landscape of sugarcane plantations appeal to tourists and residents alike through idealized nostalgia rather than historical fact.

After the Civil War, freed slaves were granted plots along the Mississippi River; land that eventually evolved into towns. Geismar is one of these and is named after a nearby plantation. Home to a predominantly African-American population for the past 200 years, Geismar is now considered one of the most environmentally polluted areas in the United States. Other towns with long African-American legacies are gone, relocated, or leveled by the petrochemical industry. An African-American cultural heritage site, this part of the Mississippi River can be seen as a social terrain where the reminders of the Second Acadian

Coast still exists, but is in danger of extinction.

With modest private residences neighboring immense chemical plants, fences and warning signs divide the landscape. Criss-crossing residents' yards are chemical pipes labeled "Highly dangerous gases. In case of emergency, call Houston." Also in case of an emergency, auditory



Early Warning Siren



warnings are broadcast through a series of loudspeakers, as well as one-way radios that were placed inside peoples' homes. The less than ten-mile distance between Geismar and the town of St. Gabriel is lined with eighteen petro-chemical plants.²⁸ In Cancer Alley, petrochemical plants take precedence over residents.

The Louisiana state government sees its "Industrial Corridor" as a capital investment where chemical production and waste disposal are key assets. The elements for sale are land, water, and air as well as their ability to hold waste. Permit applications for pollution are often supported by the findings of corporations rather than independent sources, while cultural and social concerns are neglected in the process. Unlike the inclusive and engaged process of developing regulatory guidelines for heli-skiing in Haines, in Cancer Alley the ecological risk taken is on the behalf of the residents. Disengaged agencies, government, and corporations speak with the same voice at the expense of local residents.

Louisiana, for example, has a high cancer mortality rate—in the top ten percentile of the country. In mapping cancer findings, the Louisiana Chemical Association funds the state "Tumor Registry," which collects data on cancers.²⁹ The data is organized by larger geographical areas, not by parishes or counties, as in most other states, and in that sense, provides no reliable information on cancers found in specific areas. As a result, medical personnel have no resources to set up special programs for parishes with anecdotal evidence of a high number of cancer cases. Cancer Alley is not on the medical map.



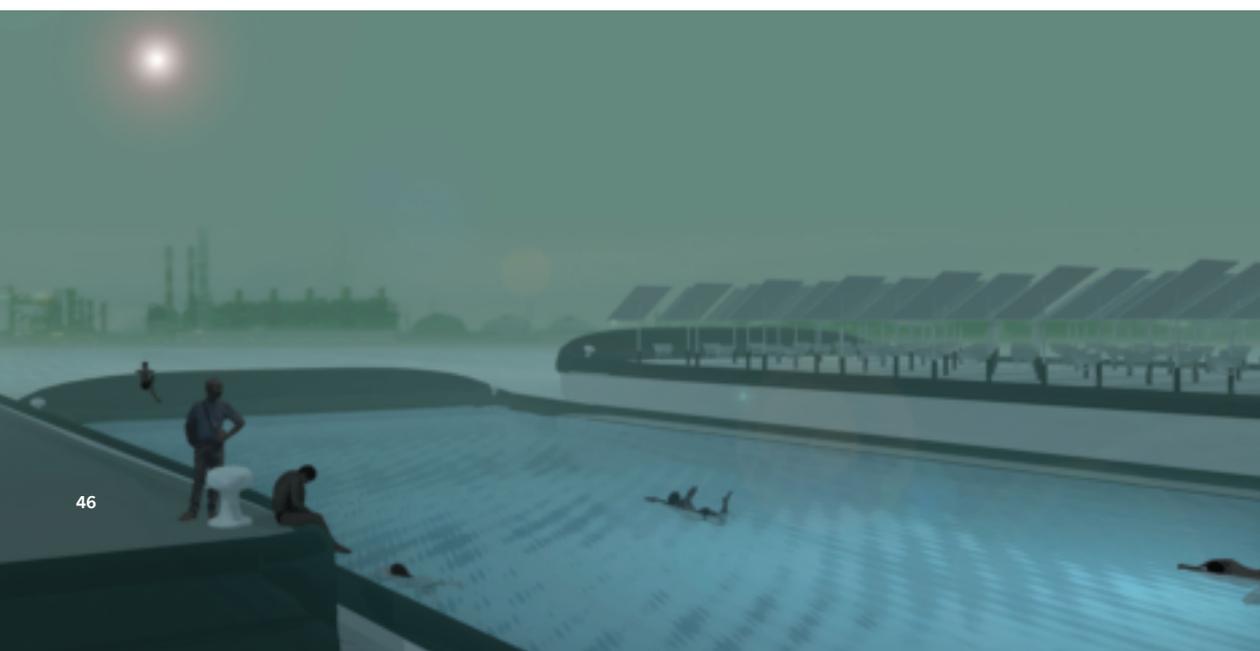
While the many names of the Mississippi River corridor from Baton Rouge to New Orleans describe the complex and contradictory ways of seeing the landscape, Cancer Alley has become a site where the government turns it back, corporations exploit, tourists visit, and people manage to live. It is in this landscape that ROY seeks to map and understand the many stakeholders' positions, as well as proposing an architectural strategy that would serve many, if not all, of the interest groups that have claim on the site.

Living Cancer Alley

How do people live in such conditions and how are politicians and corporations able to turn their back on the ecological crisis in Cancer Alley? Ulrich Beck, the German sociologist, calls it a "death-reflex normality," a paradoxical phenomenon that is "a virtually instinctive avoidance, in the face of the greatest possible danger, of living in an intolerable contradiction; the shattered constructs of normality are upheld, or even elevated, as if they remained intact."³⁰ So life goes on, even if one is aware that one's home is a brown field. Amos Favorite, a long time resident of Geismar insists, "This was a good place to live at one time. All the meat was wild game. I was raised on rabbits, squirrels, and deer."³¹ Favorite bought land from the Geismar family plantation when he returned from service in World War II, and has lived in Cancer Alley his entire life, raising a family of nine children. He has experienced various dangers in his home: when his daughter Malika was the first African-



ABOVE:
Cancer Cells Dividing,
Breast Cancer and
Lung Cancer
ABOVE RIGHT:
Still from *Louisiana
Fence Line*, by
Mark Hamilton.





American child to enter a local white school, Ku Klux Klan members attempted to burn down the family's house. But now, Favorite is more concerned with the ecological dangers produced by his neighbors. Says Favorite, "Looking back on history—and I've been here sixty-seven years—I've never seen Geismar like it is ... these new industries that were moving here was impacting us with something that was killing us. Our water is all messed up, our air is messed up, and all our land is messed up."³² When the groundwater in his town became too polluted to drink, the Favorites did not move, instead, they arranged for an extension of the water pipe from Baton Rouge. With good water, but air and land still polluted, Favorite was unwilling or unable to move, living the everyday life of death-reflex normality.

Misrach's and Laughlin's Cancer Alley

Misrach depicts a Cancer Alley of polluted waters and dilapidated mansions set in the shadow of black oil in eerie colors. Refinery pipes tower over ruins of a high school basketball court, juxtaposing the remains of a community with the current stakeholder: a chemical corporation. Misrach's photographs of Cancer Alley convey ecological risks of petrochemical production as well as the human risks associated with living in this area. This risk is taken by disconnected agencies that collect the monetary reward as well as political power, in exchange for the health risks taken by local inhabitants. Misrach's photographic essay on Cancer Alley depicts a community threatened by industry.







LEFT:
Abandoned Trailer Home,
West Bank Mississippi River,
near Dow Chemical plant,
Plaquemine, Louisiana,
1998.

Following Spread

LEFT:
Roadside Vegetation and
Orion Refining Corporation,
Good Hope, Louisiana,
1998.

RIGHT:
Swamp and Pipeline,
Geismar, Louisiana, 1998.

© Richard Misrach, 1998.

But there was another photographer who found interest in documenting the Mississippi River. In 1948, when Clarence John Laughlin published his photographic essay, the petrochemical industry was just beginning the process of buying up the plantations to build refineries. Photographing plantation mansions in decay, Laughlin's *Ghosts Along the Mississippi* conveys not only an elapsed plantation culture, but also Louisiana's rich building traditions (some of the mansions were turned into tourist sites).³³ His double-exposure photographs depict Mississippi plantations in a fertile marshland where cotton and sugar were once harvested. These were plantations built on human exploitation, where plantation owners cashed-in the reward. In Laughlin's photography, the human is a transient shadow—double-exposed, not captured—within the landscape. Laughlin depicts a Great River Road in decay, but not yet polluted, with the Chemical Corridor soon to come.

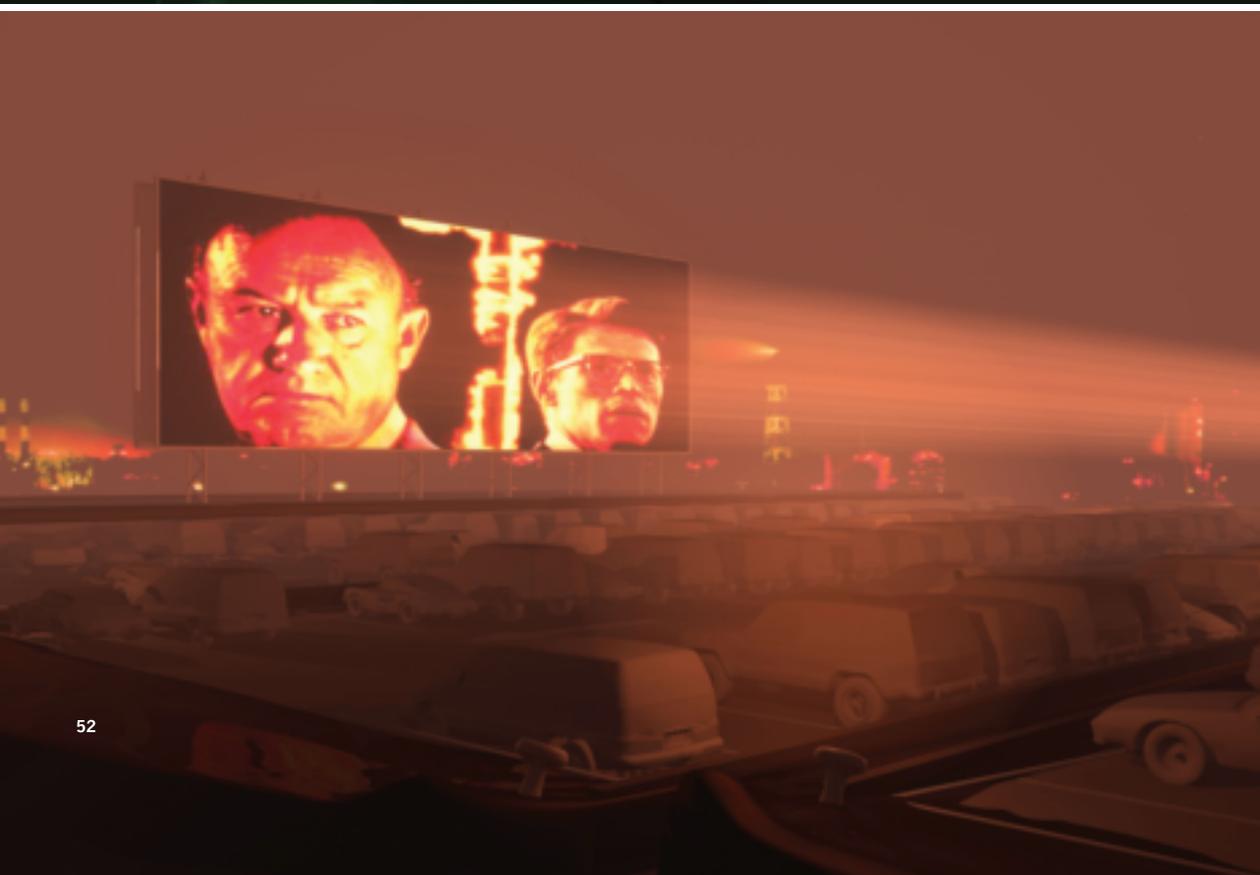


ROY's Cancer Alley

Roy's proposal for Cancer Alley was developed in response to Richard Misrach's photographs and his ideas for an intervention project, which capture the polluted environments, its social causalities, and veils them in disturbing beauty.³⁴ Similarly, Roy uncovers the social, as well as physical, beauty of a poisonous place, but other than Misrach's elegiac photographs, Roy introduces new programs for both locals and visitors. In ROY's scenario, the site of ecological risk becomes a destination for mass tourism.

ROY's collages, using Misrach's photography as eerie backgrounds, illustrate yet another landscape of Cancer Alley. Focusing on tourism, ROY introduces leisure into the landscape and shows barges turned from freight to fun. While surrounded by the appallingly polluted Mississippi waters, a swimming barge provides safe waters in which to cool down in





the hot, humid Mississippi summers. Another collage shows a barge turned Super 8 Motel with skyscraper-high chemical plant pipes in the background. The chain hotel suggests a mass-tourism market where the auto-tourist would park the car on the auto-barge, and then take a cruise on the Mississippi in the Super 8 Motel, with their minivan in tow. In addition to the swimming barge and the motel, ROY proposes a converted barge drive-in movie theater, a post-war anomaly, perhaps reintroduced on the Mississippi to evoke better times. Contrasting the happy-go-lucky attitude of the 1960s with the same period's political realism, ROY references a scene from the 1998 movie *Mississippi Burning*, which depicts the civil rights movement being rescued by the FBI from local law enforcement, who are allied with the KKK.

Targeting both mass tourism and local communities, ROY seeks to foreground the romantic atmosphere of the Mississippi conveyed by Mark Twain and Clarence John Laughlin, while Mistrach's photography provides the critical background. Mistrach says, "This unique kind of destination tourism can bring all sorts of jobs and green activities that ultimately can replace chemical industry." Perhaps as a diversion from Mistrach's project, which proposes an alternative model of economic possibilities with the ultimate goal of making a better place for the local population, ROY's Cancer Alley seeks to balance the delight that draws tourists with the dangers that threaten the Mississippi and its dwellers. ROY's collages mediate risk by both uncovering and exploring the ecological, cultural, and historical risks extant in Cancer Alley.

ROY's analysis of Cancer Alley maps three aspects: Current and historical socio-economical factors, natural resources, and development potential of development in terms of tourism. The first set of diagrams maps where both the petrochemical industry and the abundance of natural resources are sited along the river and in the area. Diagrams also explain the favorable tax systems in place for corporations in Louisiana, placing top in the country for state-funded corporation support. The next



Library



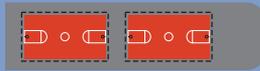
Computer Lab



Tennis



Basket Ball



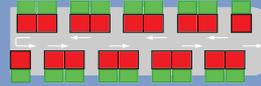
Vegetable Gardens



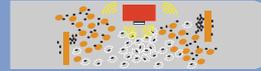
Soccer Field



Motel



Jazz Café



Parking



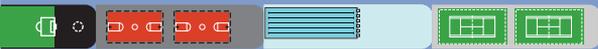
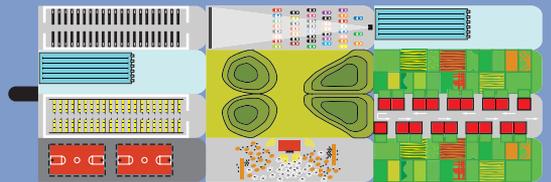
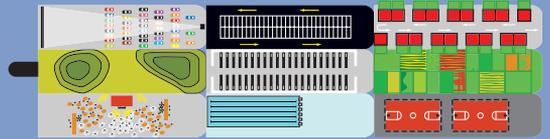
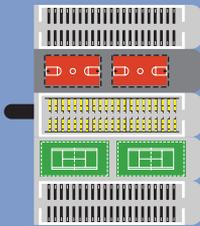
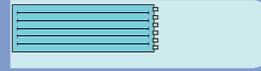
Drive-In



Park



Pool



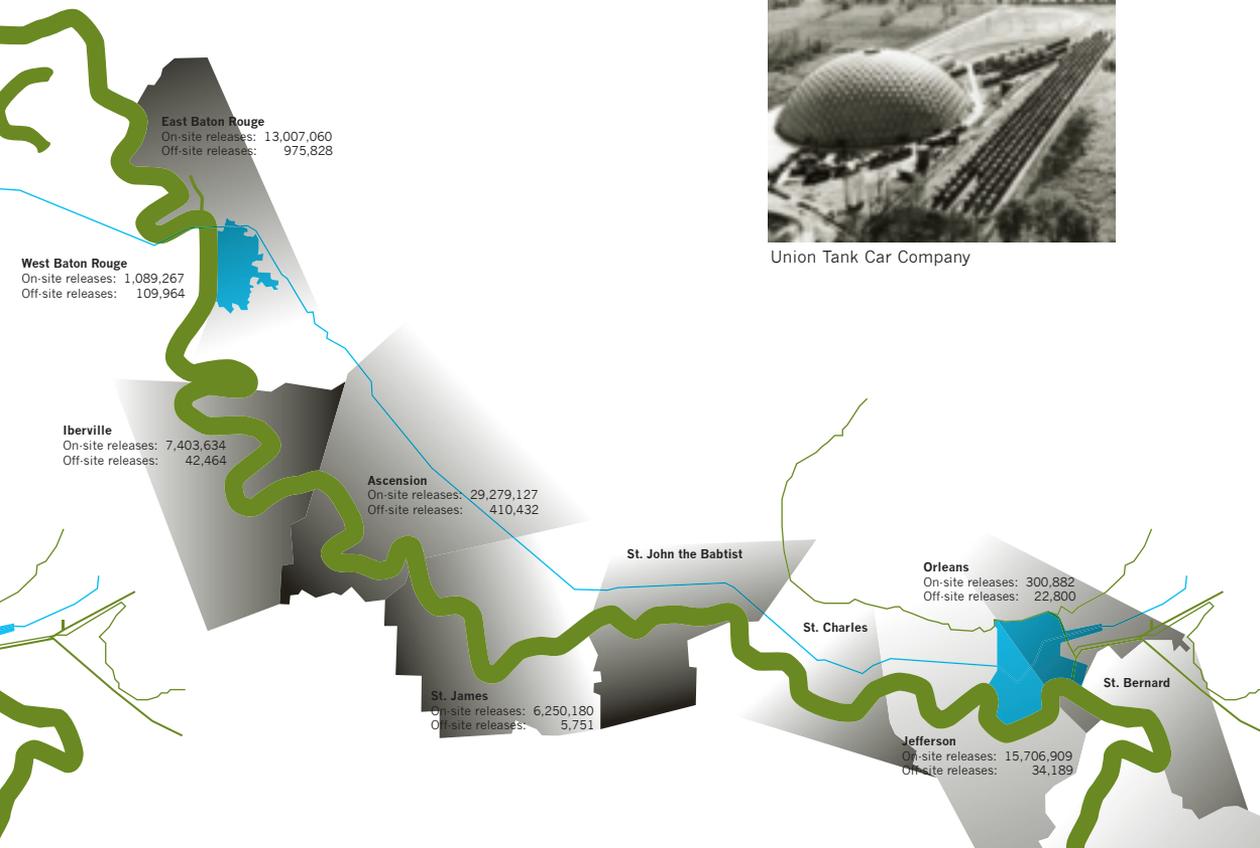
set of diagrams situates the natural crude oil and gas reservoirs in the Mississippi River Corridor, as well as cultural institutions along the river. In addition to museums and sugar plantations, ROY documents industrial buildings, such as the 1957 Buckminster Fuller 384-foot wide double-shell dome on Union Tank Car Company's premises. The mapping of the three contexts provides the background for an architectural response. ROY designed a strategy that responds to the Mississippi River Corridor and the inherent environmental concerns in its socio-economic context. As a way to revitalize the Mississippi River Corridor both as local artery as well as tourist destination, ROY proposes levee access along the Mississippi River for both cars and bikes. Developing a scenic route would provide views to both the river and its context, as well as to the vegetation along the river.

After identifying which cultural and social resources are lacking locally, ROY responds to the polluted area by proposing barges that would allow programs, otherwise non-existent, to float new services to address local, as well as regional, needs. With the additions of a floating barge library, computer lab, swimming pool, tennis and basketball courts, soccer fields,



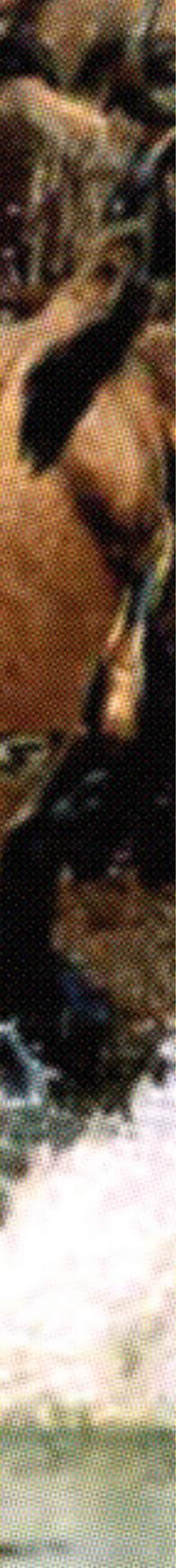
and vegetable gardens, the barges can add programming to several high schools in the area, and be of use to multiple communities along the river.

In addition to local programs fit to the needs of the underprivileged parishes along the river, ROY proposes to include tourist programs on some barges. While staying in the barge motel, or listening to a concert on the jazz café barge, tourists can leisurely float upriver from New Orleans into Cancer Alley and back. Additional programming possibilities include a drive-in movie theater and park, as well as a church that could serve several parishes. Infrastructural barges with parking and solar power-generating plants on board are also aspects of this speculative plan. The barges have the potential to revive some of the Mississippi's importance as a socio-economic artery in the area. Taking advantage of the mobility the river offers, the barges might serve different communities on demand and provide a flexible system of services for both locals and tourists. Overriding the health risks, the communities in this area are already living in a zone of risk. The barges offer relief, but not a solution, tapping into the death-reflex normality.



Union Tank Car Company





Architecture of Risk

Although the three projects discussed here are excerpts from a larger portfolio of work, they reflect a trajectory in ROY's design projects in which exploring and exposing risk is the catalyst for the design strategy. These projects demonstrate site interpretations that are not limited to physical attributes, such as geology, geography, and climate, but also include informed social, cultural, and political insights. Based on this broad understanding, ROY lets the site's exposed risk inform the design of the projects to ultimately heighten the user's perception of the site. In exposing multiple simultaneous readings of a site, ROY politicizes it. Between the didactic and the polemic, ROY's architecture stimulates and seduces by balancing comfort and risk.

In exploring the radically different sites of Okavango Delta Spa, Wind River Lodge, and Cancer Alley, ROY found that exposure to risk calls for a similar design strategy across all three scenarios. Although the projects are different in their execution, they have a common strategy based on a complex understanding of site and its concurrent activity. Whether an eco-tourist seeking the exotic in the delta, a skier roughing it in Alaska, or an ecological risk-zone dweller in a Cancer Alley brown-field, these three situations require an architecture alternating between comfort and danger. In balancing comfort and risk, ROY's architecture deals with orchestrating events. By creating a state of equilibrium between comfort and risk, ROY provides a situation that can be an exotic user experience. The exotic, its etymology often defined as foreign, is profoundly attractive in being different, and therefore engaging and

seductive. By using the design to create the exotic through exposure to the site's inherent risk, and balancing it with comfort, ROY's design strategy lets the architecture politicize the site.

In ROY's design of the two eco-tourist destinations—Wind River Lodge and Okavango Delta Spa—the tourists invite exposure to risk, thus liberating themselves from today's urban lifestyles, engaging the exotic events as a release from everyday life. Wind River Lodge offers a contemporary context in which the gear and equipment that surrounds the heli-skier is the main source of inspiration for the architecture, thus reflecting a contemporary conquest of mountains; a comfortable voyager exploring risks on the peaks, safely equipped with AvaLungs™ should there be an avalanche. In using local materials and fabrication methods, ROY introduces an architecture that is familiar, yet still exotic in its formal expression. By giving heli-skiing a new architectural expression, ROY turns the attention to its controversial position as an extreme sport and its potentially destructive environmental impact. In Okavango Delta Spa, the unique, endangered landscape and its wildlife informs a project that is inspired by vernacular traditions, merging cultural and environmental concerns. Exposed to danger, tourists are, by means of the architecture's staging of events, experiencing safely the dangers of the delta. Exploring the exotic beauty of the delta, ROY's project exposes its possible ecological crisis. The proposed upriver hydroelectric power plant developments could potentially eradicate the delta, its wildlife and flora, and also cause harm to its inhabitants and the local culture. In this larger geopolitical context, ROY's Delta Spa reads as a sensitive project that might advocate economical change balancing the cultural, political, and environmental forces in an area of ecological risk.

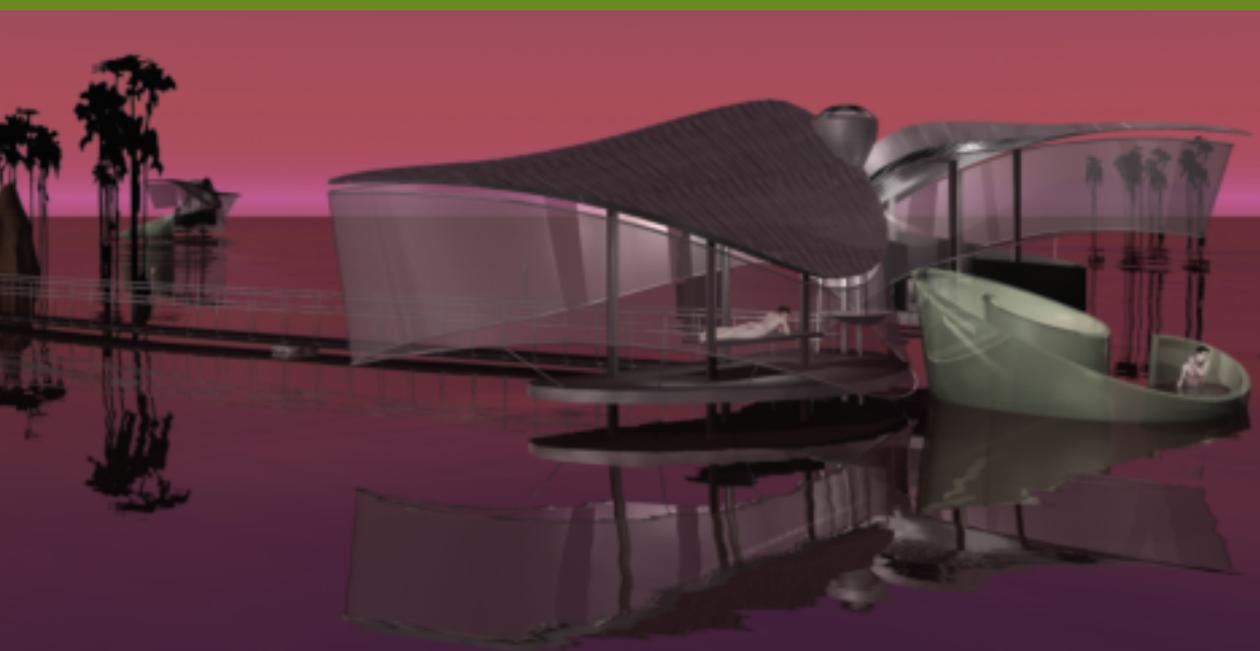
In Cancer Alley, ROY exposes a site of extreme pollution through a series of diagrams of historically grounded social and political issues that serve as catalysts for a design strategy to cope with environmental disaster. The risk-taker in Cancer Alley is the inhabitant, who for various

reasons, including death-reflex normality, decides to cope with the environment instead of leaving it, if that is a choice at all. ROY politicizes the site by, among other activities, proposing a set of barges that not only provides necessary functions to a population in poverty, but also reintroduces tourism to the area. By doing that, ROY reclaims the lost beauty of this once prosperous area, an area possessed of a significant place in the cultural history of the United States.

As the architecture of ROY unpacks the risk factors and repackages them through an exotic architecture that poses cultural and political questions, the user is inevitably invited to reflect on her own position within the exotic context. As ROY orchestrates the risk-induced or exotic events on-site, providing the equipment of risk-survival: a crocodile-safe swimming-pool, a heli-pad, or a library barge, it is the user who actively takes part in the event. Whether it is to swim among crocodiles, ski a virgin slope, or simply go to the library-barge to check out a book, ROY's architecture stimulates interaction with the site, placing it and its current state on the mental map.

By exploring and exposing the exotic qualities inherent in these sites, ROY provides architectural solutions to predicaments much beyond the immediate building. ROY's design strategy demonstrates the designer's sensitivity to multiple stakeholders as well as a deep understanding of the inherent cultural, historical, and geographical qualities of the site. In responding to this thorough analysis as a designer, ROY seeks to create a state of equilibrium between risk and comfort. Also, ROY uses a design strategy that mediates conflicts between many stakeholders. In this way, ROY's design strategy becomes more than an architectural expression, it becomes a practice of proposing design solutions for both sites and conflicts. Thus, ROY redefines architectural practice as an engaged, informed and highly politicized process with the potential for a wider, cultural impact for many.

K.S.



NOTES

- 1 Ulrich Beck outlines ecological risk and potential consequences in his book *Ecological Politics in an Age of Risk* (Cambridge: Policy Press, 1995).
- 2 For a complete catalog of ROY's work, see *ROY: Design Series 1*, published by the San Francisco Museum of Modern Art in conjunction with an exhibit on ROY's work in 2003.
- 3 Martha Honey, *Ecotourism and Sustainable Development: Who Owns Paradise?* (Washington, D.C.: Island Press, 1999), p. 8.
- 4 Simon Schama, *Landscape and Memory* (New York: Knopf, 1995), p. 453.
- 5 Morten Strøknæs, "Modernitet som sygdomsforkjempelse," *Morgenbladet*, (January 14, 2000).
- 6 Josef Handlchner and Hannes Heide, *Bad Ischl* (Linz, 1993), p. 19.
- 7 Ludvig Merkle, *Sisi, the Tragic Empress* (Munich: Bruckmann, 1996), p. 12.
- 8 Lindy Roy, lecture "Danger and Pleasure: The Architecture of Roy," at the University of Michigan Taubman School of Architecture and Urban Planning, March 31, 2003.
- 9 Interview by Kristine Synnes with Lindy Roy, New York, New York, December 15, 2003.
- 10 Lecture.
- 11 Lecture.
- 12 Interview.
- 13 "Namibia's Power Battle," *BBC World News*, (June 30, 2003), <http://news.bbc.co.uk/1/hi/world/africa/3027056.stm>.
- 14 "Namibia Seeks New Sources of Power," *The Namibia Economist* (March 7, 2003), <http://www.economist.com.na/2003/7mar/03-07-12.htm>.
- 15 Lecture.
- 16 Lecture.
- 17 Lecture.
- 18 Lecture.
- 19 *ROY*, p. 43.
- 20 Steve Williams, "DNR Proposes Limits for Helicopter Use," *Chilkat Valley News*, no.38 (2002), <http://www.chilkatvalleynews.com/archive/2002-38-1.html>.
- 21 A skier day is counted as a single skier on the slopes in one day. If the helicopter brings five skiers up on a peak for a day in multiple trip, that is five skier-days.
- 22 Steve Williams, "Industry Pans Final Heli-ski Rule," *Chilkat Valley News*, no. 46 (2002), <http://www.chilkatvalleynews.com/archive/2002-46-1.html>.
- 23 *ibid.*
- 24 E-mail from Steve Williams, dated March 22, 2004.
- 25 Victoria Jealous, heli-snowboarder, interviewed in *Frequency, The Snowboarder's Journal* no. 3.2, p. 57.
- 26 Jesse Burtner, "Turnagain Pass: Hiking the Tin Can," *Frequency, The Snowboarder's Journal* no. 3.2, p. 89.
- 27 Barbara L. Allen, "Narrating the Toxic Landscape in Cancer Alley, Louisiana" in *Technologies of Landscape: From Reaping to Recycling*, ed., David Nye (Amherst: University of Massachusetts, 2000), p. 193.
- 28 Allen, p. 190.
- 29 Jason Berry, "Cancer Alley: The Poisoning of the American South," *Aperture* no. 162 (Winter 2001), p. 32.
- 30 Beck, p. 49.
- 31 Berry, p. 33.
- 32 Allen, p. 193.
- 33 Clarence John Laughlin, *Ghosts Along the Mississippi: An Essay In The Poetic Interpretation Of Louisiana's Plantation Architecture* (New York: Charles Scribner's Sons, 1948).
- 34 Richard Misrach's photographic essay from Cancer Alley is published in Jason Berry, "Cancer Alley: The poisoning of the American South," *Aperture* no. 162 (Winter 2001), pages 30-43.

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- p. 4: Princess Elisabeth of Habsburg, aka Sisi.

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- p. 10: Satellite photo of Western South Africa courtesy of Jacques Descloitres, MODIS Rapid Response Team, NASA-GSFC
- p.11: Termite mound. Photo by Chris Johnson.
- p.12: Women carrying a thatch roof to its bearings.
- p.13: Thread weave diagram from P. Collingwood, *The Techniques of Sprang*. London 1974.
- p.18-19: From left to right, top to bottom:
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A car, wrapped around a tree, after being hit by the wind blast from a large loose snow avalanche — released by a snowboarder.

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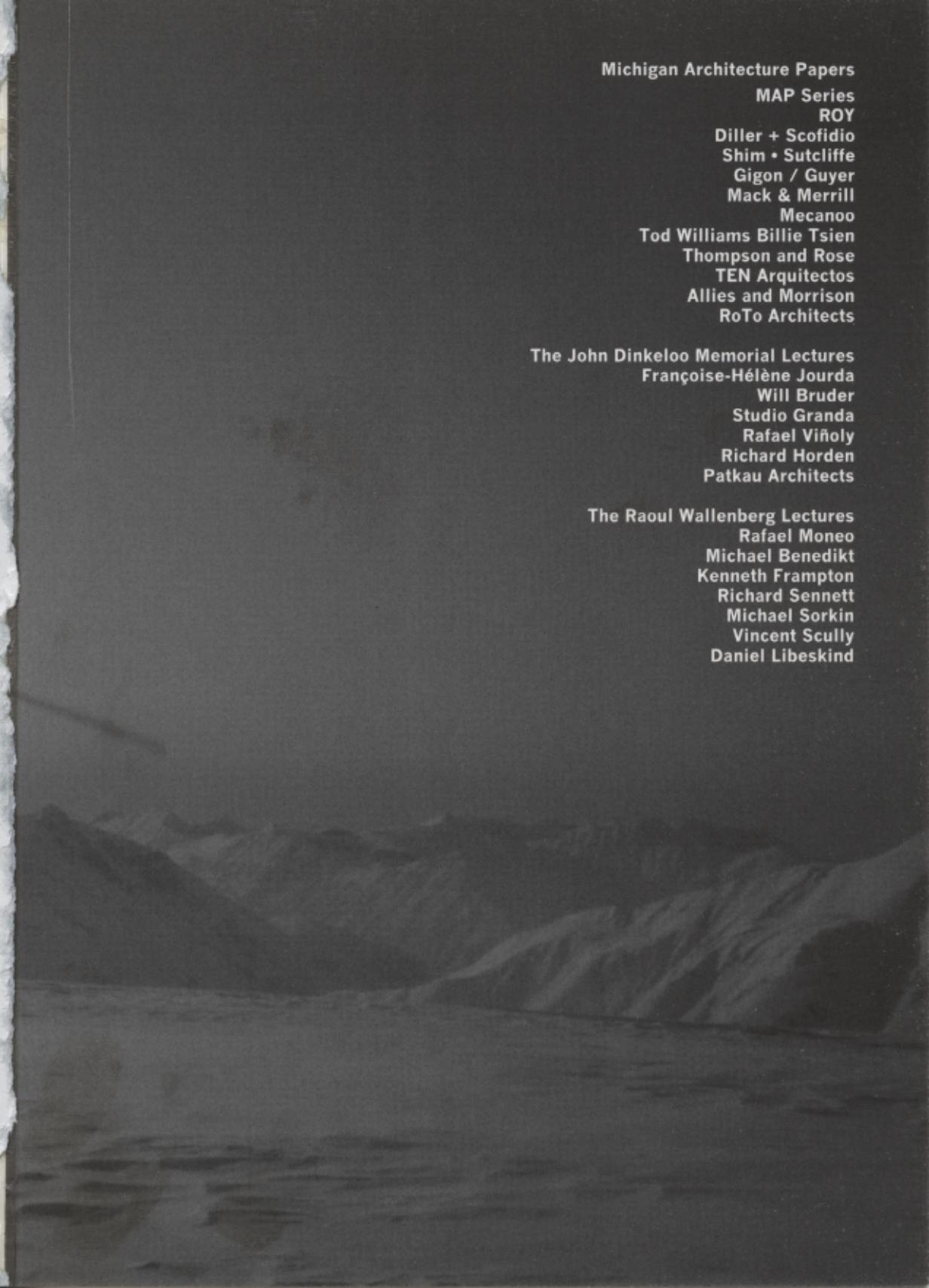
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