

Zaha Hadid 2004 Laureate Essay

The Architecture of Zaha Hadid

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Architect and Critic

Very few buildings can stand up to the Alps without retreating into modesty, but Zaha Hadid's dynamic and lyrical Bergisel Ski Jump in Innsbruck, Austria, completed in 2002, confronts the surrounding mountains with an equivalent architectural majesty. At the top of a hill, the structure occupies the sky, a free-standing silhouette. Within the bowl of a valley ringed by hills and vertiginous mountains, the turning form of the clubhouse seems to gather and funnel the aerial energy of the mountainscape to the long, bowed ramp that lofts jumpers toward the city below. Hadid designed the sweeping structure from top to bottom as one fluid gesture that both summarizes the surrounding landscape in a sweep of movement, and sends skiers down a jump conceived in an act of fluid geometric empathy akin to flight. As in Michelangelo's Sistine Ceiling, where God nearly touches Adam's hand to spark life, Hadid has provided the index finger that makes a visual connection between the sky and the ground. Here the spark of life is completed in the jump. The sensuous forms visualize and poeticize the leap, spiraling the mountainscape, sky and ground into a fluid continuum.

Air is Hadid's element: she floats buildings that reside aloft. At a time, in the early 1980s, when architects were concerned about manifesting the path of gravity through buildings, Hadid invented a new anti-gravitational visual physics. She suspended weight in the same way dramatists suspend disbelief. In 1983, she won a much-publicized international competition for a sports club on the Peak above Hong Kong with a crystalline structure that seemed to explode from the mountainside, creating in the fragmentary fall-out a structure that evaded any sense of a unitary whole. Eruption rather than gravity was the defining force directing the path of a building that thrived in the air. Floor planes were no longer extruded up from a single foundation, stacked atop one another, but beamed out in different directions, shifting as they rose in a complex section. A highway curved through the building in the space between the splayed, airborne volumes.

Historically, the proposal broke new ground in the field, and did so radically. As original to architecture as the twelve-tone scale once was to music, the design represented architecture of a wholly different and very unexpected order. Whatever the metaphor—explosion, implosion, fragmentation—the design favored open forms rather than closed, hermetic volumes; it offered breathing porosity rather than sealed fortification. The design quickly proved a foundational thesis for architecture, an unexpected precedent for shifting Modernism's paradigm from simplicity to complexity. The theory behind the building moved away from modernism's ideas of mass production, received typologies and the normative, to a more complex order of a kind that privileged the unique and the fragmentary. The scheme signaled a shift in sensibilities not only from truisms of the past but also from set tenets of industrial modernism, toward an indeterminate complexity sited on shifting ground somewhere between order and chaos.

In the 1980s, many people mistakenly believed that the Peak was influenced by the use of the computer. But the influence was historical, and in the context of the Pritzker Prize, awarded this year in St. Petersburg, coincidental. The imperial Russian capital was the seat of the Russian Avant-Garde artists who inspired Hadid very early in her career.

Vladimir Malevich, who pursued a mystic fourth dimension in his paintings and architectural schemes, had studied here, and he and his pupil El Lissitzky embarked on a remarkable journey into spatial mystery in the 1910s and '20s. Their promising experiments were aborted by a Soviet state that adopted Soviet Realism in art as official policy, and a bombastic version of classicism in architecture. The flame of discovery went out for decades.

The Architecture of Zaha Hadid (continued)

In the 1970s, however, Hadid, a student at the Architectural Association in London, took Malevich's abstract compositions and, giving them scale and function, turned them into architectural projects that gave life again to the vision. Courageously she set off on a course to realize ideas, such as fragmentation and layering, never built by the Suprematists themselves. Inspired by Malevich's ethereal paintings, she took up the brush as a design tool, and for her, painted tableaux became a locus of spatial invention. With this methodology, applied in the elusive pursuit of almost intangible form, she escaped the prejudice latent in such design tools as the T-square and parallel rule, traditionally used by architects. Hadid came off the drawing boards, much as Frank Gehry did when, influenced by artists, he left behind the usual drawings to conceive his buildings sculpturally, often with his hands. Hadid abandoned the regularity of the T-square and parallel rule in buildings emancipated from the right angle.

Adopting isometric and perspectival drawing techniques used by the Suprematists to achieve strangely irrational spaces that did not add up to Renaissance wholes, she entered an exploratory realm where she developed forms distorted and warped in the throes of Einsteinian space. Hadid transformed traditional drawing conventions, sometimes grafting several techniques and viewpoints together in the same multi-dimensional tableau. She often layered drawings done on sheets of transparent acrylic, creating visual narratives showing several spatial strata simultaneously. Applying Suprematist painting approaches to reconceive architecture, she developed an aesthetic that seemed to challenge the inertia of material reality, with dynamic forms subject to visual acceleration and a sense of take-off. Just as the entasis of a classical column connotes the feeling of weight carried by the shaft, Hadid's forms were ideated: she shaped forms to cultivate a perception of speed communicated by the eye to the body. Concept translated to experience: the shapes conveyed a sense of physical thrill as the body empathized with form.

Superseding her mentors Malevich and El Lissitzky, Hadid anticipated real buildings in her graphic explorations: she was the first to bring Suprematism into three-dimensional space as a buildable proposition. She demonstrated the leap in a now legendary 1992 installation at the Guggenheim Museum in New York for an exhibition on the Russian Avant-Garde. Taking a Malevich painting, the architect invaded the museum by superposing the abstract composition on Frank Lloyd Wright's plan, creating a composite plan. She spatialized the Suprematist composition, expanding it into the third dimension, moving the parts in abstract formations, like ice flows, through the whole museum. What seemed graphically like an object emerged as a field of objects moving through the existing building, adapted to its circular geometry. The movement was fluid, and spatial: the forms dropped and rose throughout the structure. Thematically appropriate for the show, the installation was also one of the most inspired within a long list of attempts to mediate between Wright's structure and an exhibition.

While Hadid drew inspiration from early proponents of artistic abstraction, her own restless and independent intelligence led her along a path of research that was ferociously inquisitive and inventive. Competitions often provided the occasion for the research. In a competition to design the Irish Prime Minister's house and its attendant State Guest House outside Dublin, Hadid predicated the design on collision, another notion of force. She proposed hitting the perimeter walls of a garden in the compound with a blow transmitted by the thrust of a driveway colliding with the house, breaking open its closed rectangular form. In the hypothetical impact of the drive on the house, parts broke into a shower of dynamic forms propelled chaotically into the walled space, generating a vocabulary of fragmented form in a radically re-ordered syntactic relationship. In this new space, static space became, and remained, dynamic and fluid. If, as Le Corbusier said, the plan was the generator, she was inventing a new plan that was, simultaneously, a section because of the three-dimensionality of force fields in which fragments flew. The collision freed the plan from gravity as the ordering force.

The Architecture of Zaha Hadid (continued)

Competition designs for the Peak and the Prime Minister's house, though intended for building, remained studies, but they marked a fundamental shift away from the Bauhaus strain of Modernism dominant for much of the century. The designs posited a direct relationship between matter and energy. For Hadid space itself was no longer conceived as a Newtonian void but an active Einsteinian medium transmitting force. Eschewing conventional gravity acting in inert voids, she cast space as a vectorial force field warping and propelling forms into dynamic configurations. With strong but refined buildings that were so manifestly beautiful, form alone seemed to emerge as the subject of her buildings. But the subject is really space-form—inextricably linked, mutually formative and deformative agents acting in simultaneous self-generation.

The arts progress at different speeds, and using drawing and painting as a form of architectural research, Hadid accelerated her development at a faster pace than feasible in a more conventional practice, where completion of a project often occurs years after the initial design. When she was finally afforded an opportunity to construct her vision, it was mature: she built a near masterpiece.

For a fire station in Germany for Vitra, an avant-garde furniture company whose reputation was based in progressive design, she conjured her plan from lines of force extrapolated from surrounding hills and roads, selecting in their convergence on the site what emerged as a formative sketch for the building. The originality of the design resulted in large part from carrying over illusionist drawing techniques into the built structure. Hadid seemed to stretch space by attenuating forms that tapered to points. The edges of leading prisms conformed to forced perspectives that were multiple and divergent: the perspectives did not converge on the same vanishing point, but led instead to points that did not agree with each other in either height or depth.

Hadid succeeded conceptually and perceptually in splitting space: the drawing that was a building did not tote up to a consistent whole but emerged instead as indeterminate and even irrational. The geometries tricked the eye: they were spectral.

The Vitra Fire Station was a design of rare daring and power, and with its completion, she succeeded in taking Suprematist drawings into three-dimensional space in a way Malevich never imagined and El Lissitzky never achieved. In the translation from paper to space, concept to reality, nothing was lost: at night, with floods washing the leaning walls in a gradient of light, the building looked exactly like the paintings. In the impeccably detailed structure, Hadid had built the vision.

Several years later—and just down the road in Weil am Rhein—the prodigiously inventive Hadid designed another building of approximately the same size. It was intended to serve as the main structure for a temporary garden show, and a surrounding park. Rather than building an object building with a commanding visual presence that pivots the site with the grace of Vitra, she conceived the building as part of the landscape. Sitting the building at the entrance, where paths into the park started to diverge, she bundled the paths into a roofscape over and through the building. Her resulting garden structure was hardly distinguishable from the ground from which it emerged and into which it returned. With her second German building, she switched figure and ground, cultivating the field rather than the object. The two buildings, conceptually, could hardly be more divergent. However her methodology of deriving designs from larger site considerations remained consistent.

Together, the Weil am Rhein buildings marked a new phase in Hadid's career as she moved from paper architecture to construction, from vision to practice. The buildings retired the mistaken perception that her work was merely theoretical, and unbuildably difficult.

In the decade that followed the buildings at Weil am Rhein, commissions accelerated, growing in scale, but without loss of intensity and focus. Besides responding to the brief and the context, each building

The Architecture of Zaha Hadid (continued)

explored an avenue of research that ultimately yielded results that formed part of an ever-expanding repertoire of conceptual approaches. Just as she layered images in her drawings and paintings, she layered her findings in a broader field of ideas. In projects ranging from homes to an opera house, Hadid—working with Principle Associate Patrick Schumacher and other members of her trusted staff—explored such issues as the multiple ground plane, sectional interconnectivity, occupied structure and infrastructure, and formal and spatial liquidity.

In a house in the Hague, she conceived an interior organized on a ramp that spiraled within the cubic form required by the developer. Interested in an architecture of movement, she developed a turning form whose twists avoided Euclidean regularity. Likening the ramp to an orange peel, the architect escaped the fixity of regular geometries that pin and control space. The form, instead, released space, exerted pressure even on the outside box, distorting it so that it too responded, pressuring and compressing the spiral. The spiral itself, in its continuous flow, allowed mutable living arrangements: walls did not segment living spaces. The ramp acted as a loft on which occupants could determine how and where they would live. The plan was not over determined but receptive to interpretation and change.

For a competition that Hadid won (twice) for the Cardiff Opera House, the architect conceived the building as a necklace of jewels ringing a large public plaza. Rather than a politely “contextual” building of textured brick and matching cornice lines, the building established its own context, in the form of bristling geodes surrounding a folded ground plane. The facets of the courtyard extended the streetscape up into a building that remained directly connected to the street. The irregular topography bent to the surrounding site contours, becoming a means for extending public space within the precinct of the building.

In Strasbourg, France, in what might have been for some architects a negligible commission, Hadid turned a park-and-ride into a play of tectonic plates: tilted concrete planes angled up from the ground to form a shed protecting people waiting for trams. The huge parking lot was scored with lines and arrayed with lamps in an obsessively ruled graphic display that became an artistic abstraction of its own. As a gateway choreographing and dignifying a mundane change of transportation modes, from car to tram and back, the design transformed the anomie of the edge city by articulating a parking lot and transport shed into a disciplined play of line, form and structure. Hadid invented a new typology for suburbs whose “bucolic” *raison d’être* is normally resistant to civic architecture. The topographic manipulation of the landscape proved a seamless transition from suburb to city. Just as Frank Lloyd Wright thought of architecture as an organic part of a nature that he intensifies in a building, she cultivated this building as an organic part of an inorganic environment. The abstraction of her design process allows her to treat asphalt with rare respect and invention.

In a gathering momentum, more of her designs were being built. About the time the Bergisel Ski Jump in Innsbruck, Austria, was completed, Hadid finished the Rosenthal Center for Contemporary Art in Cincinnati. Instead of perpetuating the white cube that has become the nearly ubiquitous assumption for museum display, Hadid offered what she called a “catalogue” of different galleries that would offer spatial heterogeneity instead of the square, white, blended homogeneity typical of most museums. Though the museum brief for the competition originally requested “neutral” warehouse-like lofts, for flexible partitioning, Hadid proposed a diversity of spaces whose qualities would speak to the different characters of various artists. The design championed difference over similarity. She was again designing against the prevalent grain of the profession and conventional museological wisdom.

Hadid stacked the galleries on the narrow corner site next to a switch-back staircase that has proved an irresistible invitation into the building: few people ever take the nearby elevator. From their first steps, drawn by their curiosity, visitors plunge into an immersive environment. Shifts in the stairways, beaming

The Architecture of Zaha Hadid (continued)

through space like the floors of the Peak, designed many years before, allow changing points of view in an interior that itself is built off the orthogonal. The optically rich space is an essay in multi-perspectivalism that cultivates the perception of visitors, involving them in a participatory exchange with a building they must explore to understand. She has not built an empty container for a constellation of objects floating in Newtonian space, but a space warmed by the subjective participation of the viewer on a path of discovery. The space becomes personal, owned by visitor through a process of peripatetic exploration.

The aesthetic refinement of her designs, their very beauty, belies the fact that Hadid is committed to cultivating and enhancing the urban environment. Through all the projects, she opens geometries to invite the city into her buildings. At the CAC, where she extends what she calls “an urban carpet” from the sidewalk through the lobby up the back of the stairwell, the city and building enter a mutually supportive, reciprocal relationship.

In a form of social activism, Hadid builds an invitation to the street into and through her buildings and thereby increases the public ownership of the private realm. Inside, the whole continuum of space becomes a social catalyst, or what her Russian mentors called a social condenser, which breeds a sense of community through a shared activity. As in many of her buildings, at the CAC visitors become Alpinists sharing the experience of vertiginous stairs leading to the galleries. They are not consumers, processed by escalators and elevators, but actors carving out their own experience in a suggestive space of their own interpretation.

Since the commissions for Cincinnati and Innsbruck, the commissions have taken a nearly exponential leap in scale. Commissions for a large science museum in Wolfsburg, Germany, and the National Center of Contemporary Art in Rome, have been followed by a huge BMW plant in Leipzig and a vast housing scheme in China. She has conceived large urban design projects in Bilbao and Singapore, where she again uses the idea of the landscape to organize the city in a fusion of landscape and urban form.

In a recent commission for a branch of the Guggenheim in Taichung, Taiwan, this architect, whose designs are founded on the idea of change, has proposed her most Einsteinian building yet. In a clear expression of relativity theory, she proposes that entire parts of the structure move—sections of the roof and even floors—so that, as in a station with trains pulling away at different speeds, the visitor loses the sense of which part is stationary, and which, moving. The whole environment becomes relational: the relativity of Hadid’s space-form takes on the Einsteinian relativity of space-time in what promises to be one of her most intellectually ambitious projects.

Until very recently, Hadid’s architecture was viewed as marginal, impracticable and even extreme. But the rolling success of her built projects is cumulatively establishing not only the credibility of the vision but also its incontestable power and public appeal. Hadid never designed down to her clients, and the world now seems to be catching up to a standard that she set.

Rarely has an architect so radically changed and inspired the field. From the first designs, which earned international attention, she became a galvanic figure and a force. But Hadid did not coast. The talent is protean, and the intelligence, trenchant. Like her own designs, built on change, she thrives on self-transformation, and never copies herself. She created a new architectural reality that we did not know before, and succeeds in pushing even that reality to places we can never quite anticipate.

The Architecture of Zaha Hadid (continued)

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