Joan H. Pachner

Tony Smith: Architecture into Sculpture

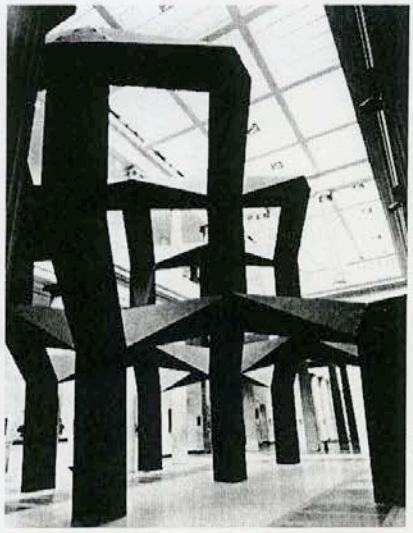


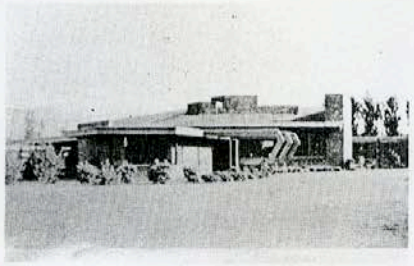
Fig. 1
Smoke
Installation Scale as Content Exhibition
Corcoran Gallery of Art
Washington D. C. 1967

Tony Smith is best known for his large, black modular sculptures from the 1960s and 1970s, such as "Die" and "Smoke". But, while Smith was lauded as a sculptor, he began making these "presences" only during the last twenty years of his career, in 1960, at the age of 48[1]. During the 1940s and 1950s Smith was an architect – or, as he preferred to call himself, a designer[2]. Smith's sculpture of the 1960s represents the culmination of a lifetime of thought and artistic creation that began in the 1930s. Throughout his life Smith was fascinated by the geometry of nature. This, along with his architectural experience, played a central role in his sculptural development.

Born in 1912 in South Orange, New Jersey, Smith had tuberculosis as a young child and was therefore quarantined in a small prefabricated house on his family property[3]. He attended the Art Students League in New York from 1931 to 1936[4] and the New Bauhaus in Chicago from 1937 to 1938[5]. From 1938 to 1940, he worked for Frank Lloyd Wright. He established his own architectural practice in 1940, which continued into the early 1960s. He married Jane Lawrence in 1943;[6] for two years they lived in Hollywood, California, where his wife pursued her acting career. By the mid-1940s Smith was an integral member of the New York intellectual and social milieu; among his closet friends were the painters Barnett Newman, Jackson Pollock and Mark Rothko, as well as the playwright Tennessee Williams. From 1953 to 1955 Smith lived in Germany, joining his wife who was singing opera there[7]. Only in the mid-1950s did he begin making the sculptures for which he is famous[8]. This late work can only be understood by reviewing the ideas and works of his earlier years. Tony Smith's use of cubes, tetrahedrons and octahedrons as the structural and metaphoric basis for his sculpture in the 1960s and 1970s reflects a lifelong desire to discover the unifying order beneath the apparent diversity of the natural world[9]. This central aspect of his intellectual and artistic quest was articulated as early as 1943. During World War II, while living in California, he organized his thoughts in a large folder of illustrated texts that he titled "The Pattern of Organic Life in America". The sketches and writings in the folder emphasize over and over again his search for evidence of recurrence, a cosmic order, harmony and rhythm. His stated goal was to identify:
"... patterns, forms, rhythms, orders by which we might live more intelligibly, with greater emotional security, greater poetry, greater breadth and freedom ... we need a myth ...There are deep rhythms and drives here but they are not clear. We have no great culture. Our energy is dissipated in our lack of any integrating or unifying element, any myth, any bible ...

I am trying to clarify the pattern of organic life in America. I think that there is such a pattern here and it only needs uncovering. 'The poets have seen it, Thoreau, Whitman, Wright ...'"[10]

As late as 1980, shortly before he died, Smith was still concerned with the principle of cultural unity, yet he lost faith that such a vision could be found in America. He believed that "Certain ancient cultures such as China and Egypt produced a kind of intuition toward form which colored the entire society"[11], but that the closest we, as a society, came was with the pottery, basketwork and blankets of the southwest Indians[12]. In the early 1940s Smith's friends, Adolph Gottlieb, Mark Rothko and Jackson Pollock, were turning to archaic-myths and Jungian archetypes as the source of artistic inspiration. Smith shared these intellectual concerns, but only rarely used the subject matter as the basis for his artistic imagery[13]. Instead, Smith's work drew



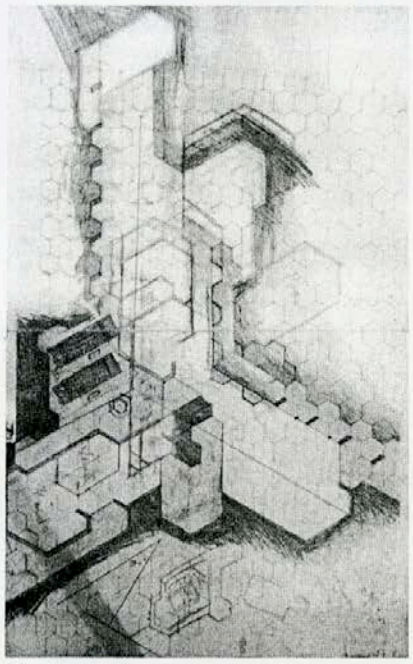
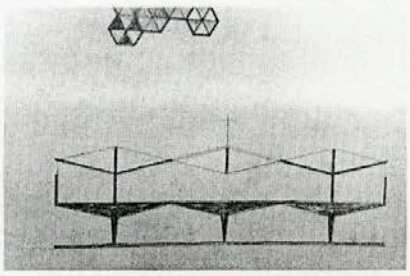


Fig. 2
House built for L. L. Brotherton
1943-44
Mt. Vernon Washington



Preliminary Plan for L. L. Brotherton
House c. 1943

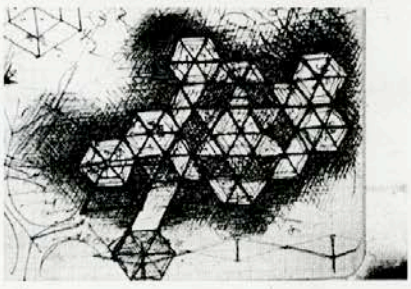


Fig. 3
Plan for a catholic church – Elevation
1950-51

Sketch for plan of a catholic church
1950

on the organic world of the natural sciences, with their mixture of variable and repeated forms. In addition, he liked early twentieth-century industrial buildings because "They had the same features as my little house – the structural regularity, modular fenestration, [and] clearly stated mechanical features"[14]. Moreover, he felt that there was something particularly American about compositions based on repeated, prefabricated or preformed elements[15]. Smith's belief in the power of culturally unifying structures parallels his interest in mathematical and scientific laws that govern the superficial chaos of the natural universe. He was looking to the laws of nature for a key to finding order in the world we live in, in the integral relationship between order and chaos. It is logical, therefore, that Smith was drawn to the writings of D'Arcy Thompson, "On Growth and Form" (1917) and Jay Hambidge, "The Elements of Dynamic Symmetry" (1919-20)[16]. Both authors believed that natural systems of growth could be explained by mathematical systems. Smith adapted these principles to his sculpture as well as to his architecture. D'Arcy Thompson's treatise concerned the effect of mathematical and physical laws upon living forms. Smith was drawn to Thompson's analysis of natural patterns of growth, especially to the ideas of the compact structures of close-packed molecules and to phyllotaxis, the constant ratio of curved growth lines in plants and shells[17]. The close-packed modules found in Thompson's analysis become an important element in Smith's architecture and sculpture. Hambidge extended Thompson's analysis to artistic composition. "Dynamic Symmetry" was a system based on a series of rectangular proportions, rather than on a on symmetry around a fixed point (static symmetry)[18]. His observations were derived from an analysis of classical Greek architectural and painted compositons. Hambidge considered his system superior to the "static symmetry" of medieval art, for example, because its formulas were based in natural laws, in the architecture of man and of plants. He intended his explanation of the innate relationship between natural laws and Greek art to be „used by the artist to solve certain problems of composition and connect design closely with nature[19]. Both Hambidge and Thompson wrote their treatises on the heels of the first World War, during the "return to order", the relative cultural calm in Europe in the later tens and twenties. The work of Hambidge, in particular, seemed to reveal universal laws of proportion that accorded with Smith's own predilection for a classical "rightness" of form that always affected his aesthetic goals.

Tony Smith was particularly fascinated by the honeycomb, a natural configuration of close-packed hexagons. The repeated units are a model of efficiency in nature that could be transposed to the world of man. The honeycomb proved crucial to the development of Smith's architecture and sculpture. In 1938, Smith (then 26 years old) followed Frank Lloyd Wright's advice to avoid further formal schooling, to "go into the field" and to "regard it just as desireable to build a chicken house as to build a gothic cathedral"[20]. Smith went to Colorado where he built his first structure, a chicken coop.[21] He then worked for Wright from 1938-40. He became clerk-of-the-works for the Suntop homes in Ardmore, Pennsylvania, estimated construction costs for the Usonian houses and helped build the Armstrong house in Ogden Dunes, Indiana[22]. In 1940 Smith began an independent architectural practice, which continued until the early 1960s[23]. He designed and built about two dozen projects, mostly private homes, and imagined hundreds of unrealized projects, including office buildings and an entire city[24]. Frank Lloyd Wright was the first architect to replace the rectangle with the honeycomb framework as the basis for a house desgin, beginning with the Hanna house of 1937 in Stanford, California. Smith, who was very influenced by Wright during the War years, adapted the honeycomb structure in 1943. It was the basis for a house he designed and built for his father-in-law, L. L. Brotherton, in Mt. Vernon, Washington (fig. 2)[25]. In 1950, the honeycomb provided the scheme for the unrealized Church project (fig. 3). In 1951 the single hexagon was appropriated as the elevation for a house that he designed and built for the painter Theodore Stamos (fig. 4). In addition, this module provided the basis for Smith's projected „Linear City" of c. 1954 (Cat. No. EE), as well as for the great environmental piece, "Smoke" of 1967 (fig. p. 48), and

Abb. 4
Stamos House
East Marion, Long Island
1950; Photo Aug. 1988

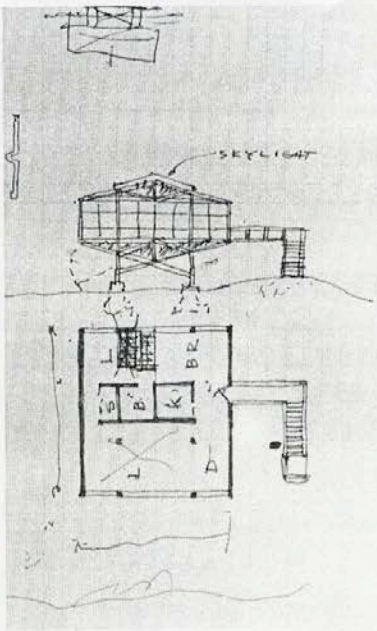


Abb. 5
Skizze für Stamos House
1950

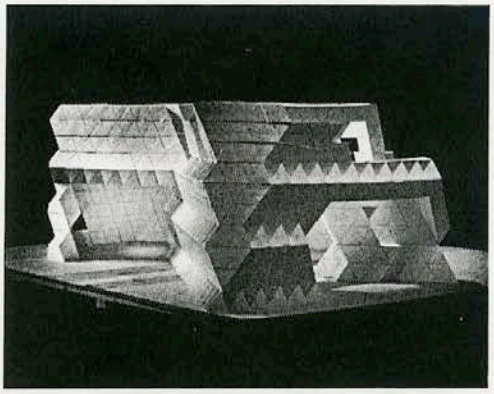


Abb. 9
Bat Cave
Modell, 1969

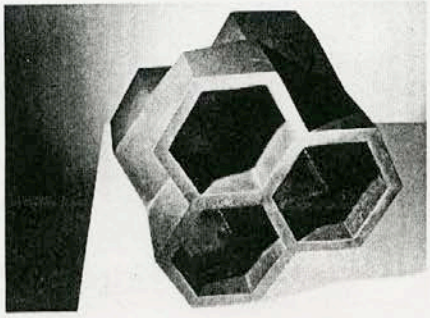


Abb. 6
Bees Do It
Bronze (Unicat)

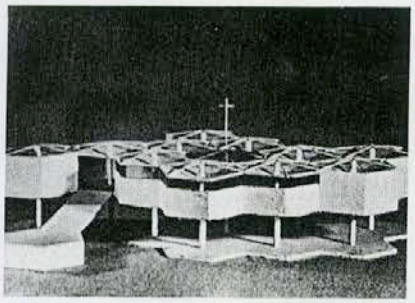
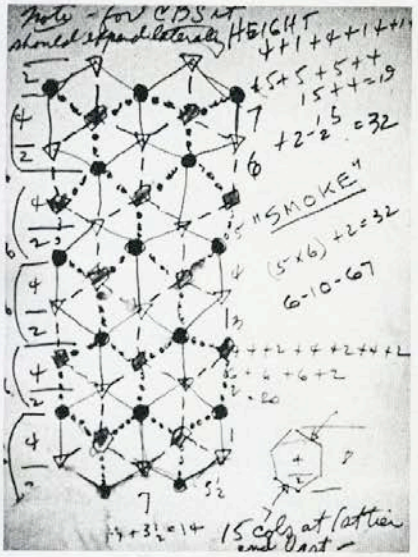


Fig. 7
Model for a catholic church
1950



its offspring "Smug" and "Smog", as well as again in the 1970-71 small bronze "Bees Do It" (fig. 6).

In 1951 Smith designed and built a unique house for the painter Theodore Stamos in which a raised square plan was contained by a hexagonal elevation (fig. 5). Smith explained that he "had been looking at a book on bridges and decided to make a house with trusses ... The structural elements are painted white to separate them clearly from the paneling, which is yellow. The three small panels are red, white and blue[26]. While Smith's statement emphasized structural clarity and the generation of the base of the house from forms of industrial engineering, the effect of the whole design is that of an organic image, recalling a molecular structure rathér than one which was man-made.
Smith's unrealized 1950 project for a church represented his most ambitious use of the honeycomb structure, conflating the architecture of nature and spirituality[27]. The catalyst for the project was Jackson Pollock, who had been asked to decorate a model church. He accepted the project on the condition that Smith could be the architect[28]. In its final form, Smith's envisioned twelve hexagonal cells on stilts, close-packed, with an altar in center, under skylight; the Congregation was to face the altar in six surrounding bays[29]. In addition, there was to be one bay for confessional, and two bays for sacristies. A Baptistery was proposed to left of the Church entrance, connected by a ramp (fig. 7)[30]. The clearstory windows were be decorated with paintings by Pollock[31]. In retrospect, Smith acknowledged that the plasticity of the close-packed design was moving towards sculpture[32].

When Tony Smith turned to sculpture, the honeycomb remained a crucial element in his design; but it was the tetrahedron that would lead him "further from considerations of function and structure toward speculation in pure form"[33]. The apparent strength of Alexander Graham Bell's space frames, used in kites and towers at he beginning of the century provided the impetus for Smith's development of the space-grid in which „voids are made up of the same components as the masses ... [the sculptures] may be seen as interruptions in an otherwise unbroken flow of space. If you think of space as solid they are voids in that space"[34].
Both frameworks are merged in the great 1967 installation "Smoke"[35]. From an aerial vantagepoint, seen clearly in a preparatory drawing, one can see that the hexagon is the central module. However, this clarity seems to dissolve once one is actually inside the piece; then the logic escapes – like smoke. Smith himself described the piece as a "rhomboidal dodecahedron topologically stretched beyond recognition"[36]. Interior views are dominated by the nervous line of the scaffold and the implied infinite expanse of the baroque structure. The integral relationship between solid and void is a literal realization of the space lattice.

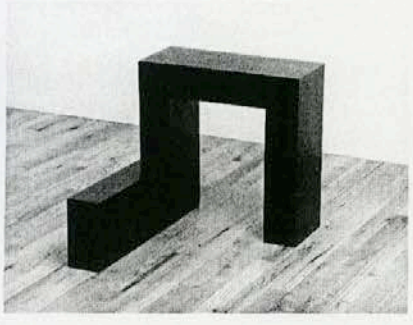


Fig. 8
Marriage
Bronze
1961

Beyond the honeycomb motif, Smith's architectural designs provided him with a vocabulary and syntax which he could readily transpose into sculpture. Works such as "Die" or "Black Box", evoke images of cubic house designs or tombs, and linear pieces, such as "Cigarette" or "Marriage" (fig. 8) are reminiscent of gates or doors; other works, such as the 1971 installation "Bat Cave" (fig. 9), were semi-architectural structures themselves. While it is clear that certain elements of Smith's sculptures were appropriated directly from the language of architecture, his "presences" were not simply non-functional structures. Smith's sculpture extended the modular principles he had worked with in architecture and painting; they also made use of the practical aspects of his experience as a builder.

Smith's sculpture was attuned to the internal measurements of architectural construction as well as to the proportions of the human figure[37]. Smith understood how people react to the spaces of buildings; this determined his own sense of scale in sculpture. He wanted his

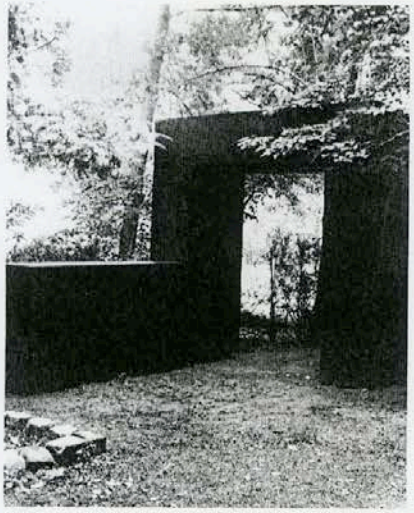


Fig. 10
Marriage
Mock-up
1965

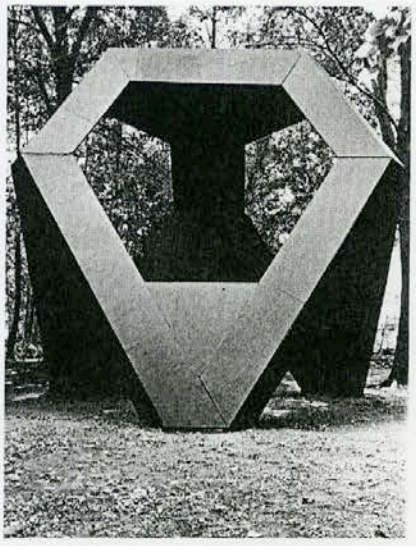


Fig. 11
Generation
Mock-up
1966

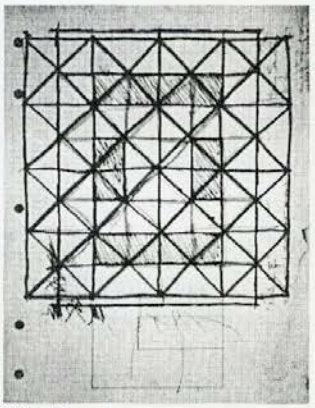


Fig. 12
Drawing for maze
1966-67

pieces to have familiar proportions. In "Marriage" (fig. 10), for example, "the opening was 6'8", the height of a door ..."[38] Works related to building scale were also understood as related to human scale, by which the original architectural proportions were defined. He wanted to incorporate an intuitive sense of scale so self-evident and familiar as to be almost invisible. Hand-in-hand with scale of buildings, goes the scale of man. Smith's sensitivity to the role of the body in sculpture stems not so much from the history of sculpture, but from architectural proportion, which used man as measure. In fact, while living in Germany in 1954, Smith went so far as to devise his own version of Le Corbusier's "Modulor", based on a metric proportional grid, and derived from his knowledge of Hambidge's "Dynamic Symmetry"[39]. The symbiotic relationship between the architecture of man and the structure of buildings is at the heart of "presences" such as "Die". In fact, Smith insisted, for that reason, that "the cube you see doesn't represent so much a space to live in as an actual person"[40]. Thus, the scale of this "presence", as in so many others, is in a kind of grey zone between objects and monuments[41]. It was also from his study of architecture that Tony Smith derived his idea of the "monumental". Because his work is so physically impressive, individual works have often been interpreted (or misinterpreted) as monuments; he was on the cover of "Time" magazine in 1967 as "Master of the Monumentalists"[42]. Smith's definition of what makes an object a monument had gestated since his earliest days as an architect. He felt that we, in America, sorely lacked monuments. For Smith, a monument is not just a memorial of a person or event.

What is important ... is the significance of monuments in recording the uniqueness of experience of an individual or the character of an event. The way in which monuments leave such records ... is that they have been created at a particular time and at a particular place, a specific spot on the space of the earth[43].

Monuments were not equated with size, but with experience; an amulet is potentially as monumental as a monolith. Smith's concept of a monument is tied to its location in time and space – to its site. This innate relation to the earth is one rooted in his experience building houses. Beyond that, however, is a deeply felt belief in the power of an abstract object to produce an experience so strong that it is memorable and unforgettable. The concept evokes the strength of a religious experience, when one is transfixed by a vision or, potentially, equally moved by the abstract sublime of a painting by Barnett Newman or Mark Rothko. Here, the strength of the abstract image leads to a specificity of experience, while the detail of a representational painting could lead the viewer away from the deeper emotive revelations. Smith's definition of what is monumental, when applied to his sculpture, is somewhat difficult to pin down. He definitely intended some of his projects, such as the "Franklin Delano Roosevelt Memorial" competition centry and "Generation" (fig. 11) to be monumental[44]. His writings, however, indicate that he often consciously tried to demonumentalize his sculptures – presumably, to make the experience of viewing the work less focused on a particular time and place. Smith often wanted control over the siting of his pieces; how a work was situated in a given context often affected the impact of its composition and therefore its intended meaning[45]. The sculpture "Maze" (fig. 12) provides an instructive example because it was designed as a site-specific piece; it was also reproduced in a magazine article by Smith that encouraged any person to recreate the work[46]. "Maze" is a configuration of four lithic elements that is mathematically describable as squares within squares. After its publication in the magazine "Aspen". Smith was concerned that the configuration of elements could be reconstructed at will, in any context, and would therefore be easily misconstrued as a monument. He believed that this work needed an architectural context to tame its associations with monumental archetypes, and to establish itself as a labyrinth of the mind[47].

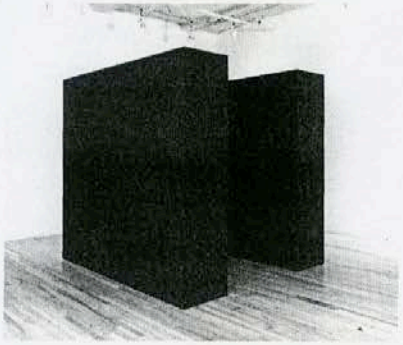


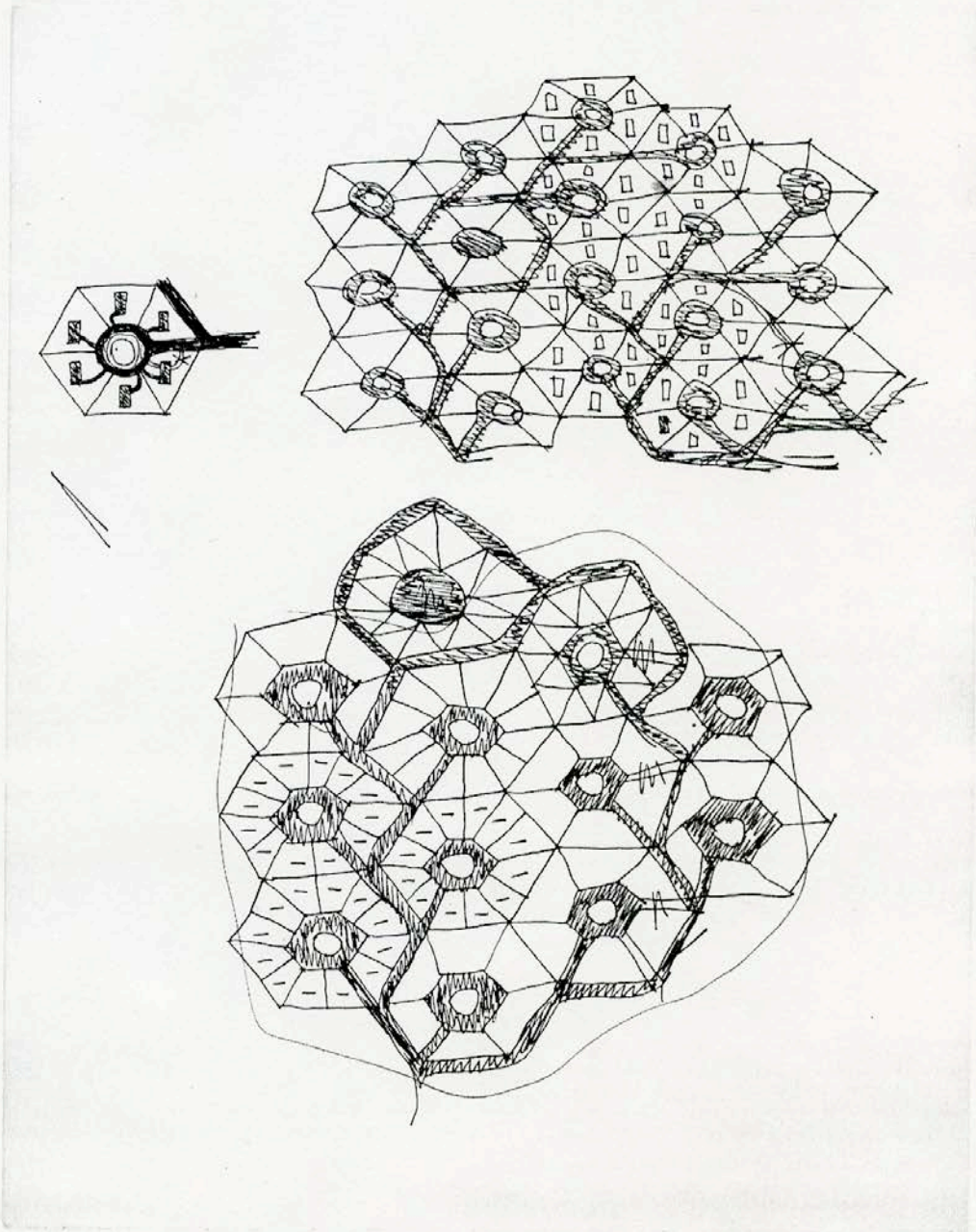
Fig. 13
The Elevens are up
1963
Mock-up

Fig. 14
New Piece
Princeton
1980

Smith's sculptures have often been compared, by critics and by Smith himself, to ancient architectural monuments or archeological sites. The sculptor Scott Burton, has written that "The Elevens Are Up" (fig. 13) suggests the grand austerity of Mycenean tomb architecture[48]; E. C. Goossen felt that pieces assembled in Smith's suburban New Jersey backyard looked like "a ruined site, a Stonehenge, or a Teotihuacan"[49]. Such references to ancient sites are hardly accidental. Smith himself encouraged the associations between his sculptures and great monuments of the past. He loved archeology, and revered the classical world of Greece and Rome; he collected enormous quantities of magazine articles on archeological and ancient sites and was very well read on the subject. In fact, Smith's hero was reportedly Imhotep, designer of the first pyramid at Zoser; the first artist's name recorded in history[50]. Perhaps because he was so conscious of the changes wrought in his own buildings, he was all the more respectful of the duration, through the centuries, not only of the symbolism but also of the structure's physical integrity. As he said: "I have always admired very simple, very authoritative, very enduring things ... there is very little in contemporary life we think of as continuous ...[51] In the tradition of Picasso, who wanted to line up his sculptures on the Croisette at Cannes, Smith "wanted to place his presences on great avenues, like a great avenue of sphinxes"[52]. He preferred his work to be displayed outdoors, "surrounded by trees and shrubs, where each piece can be seen separately by itself"; domestic settings seemed to trivialize the compositions. In his studio, however, he put "canvas stretchers over the windows so there is a very subdued light". He felt that, under those conditions, the work had "more of the archaic or prehistoric look that I prefer", like Stonehenge[53]. As Smith loved the enduring forms of the ancient world, so too he was attracted to topology, a branch of mathematics whose basic theories rest on the notion of permanence amid change. Known as "Rubber sheeet geometry", topology studies the properties of an object which remain unchanged, even when it is bent, twisted and stretched. The most common topological model is that of the Moebius Strip, a curvilinear plane that is twisted and joined at its ends[54]. Smith felt that topology was "more elemental but more sophisticated than plane geometry"[55]. Several of his sculptures, including "New Piece" (fig. 14), and "Smoke", among other works, were derived from topological investigations.

Smith's involvement with architecture intuitively enabled him to sidestep time-honored high-art traditions that dominated sculpture, such as carving and modeling. Thus, one of his most radical innovations as a sculptor, having his work fabricated, was also the most natural. For example, for the 1962 "Die", Smith said: "I didn't make a drawing: I just picked up the phone and ordered it."[56] He simply called a fabricator, gave him the specifications and received the object, as ordered. While he did not originate the idea of "telephone art", Smith's actions did initiate a new chapter in the relationship between art and industry; "Industrial Welding" was Tony Smith's answer to David Smith's "Terminal Iron Works"[57]. The use of a fabricator clearly negated the hand of the artist. This highlights a critical distinction between Tony Smith and his contemporary, David Smith. Tony Smith's viscous black tar surfaces on wooden mock-ups and the flat black metal surfaces of finished pieces were the polar opposite of David Smith's delicately sanded surfaces, or welded metal sculptures by artists such as Ibram Lassaw, in which the drip of the molten metal was a direct extension of its maker. As an architect, Tony Smith was accustomed to using contractors to execute the details of his artistic vision; blueprints and preparatory drawings were second nature to him. Smith always stressed his role as designer; he avoided the details of construction whenever possible. As a sculptor, his preferences did not change, and his work naturally turned known means of building to new means of artistic creation. Almost inadvertently, then, Tony Smith introduced a set of ideas about creation and realization which would prove of seminal importance for the minimal and conceptual artists of the 1960s and 70s. Smith's interest in science and his use of industrial means of

fabrication might suggest that his activity as a sculptor was carried out according to strict logical method. But the opposite is true. The romatic, the irrational, the unpredictable elements are what he himself preferred to emphasize in his sculpture. As a sculptor, Smith could fully explore the realm of the subconscious. He exploited surrealist methods and imagery that had previously been only an aesthetic counter-current to his architecture. While he had made automatic drawings since the 1940s, he had not been able to incorporate such spontaneous imagery into his building designs. As an architect, his more unusual building designs were often compromised or not realized. As a sculptor he could more fully integrate surrealist ideas and process into his daily creations: "All my sculpture is on the edge of dreams. They come close to the unconscious in spite of their geometry. On one level my work has clarity. On another it is chaotic and imagined."[58]



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Chance played a large role in his sculptural compositions. While he worked with the rational modules of nature, Smith would use and reuse his building blocks as "found objects", combining them without predetermined plans, to create new and "unpredictable"

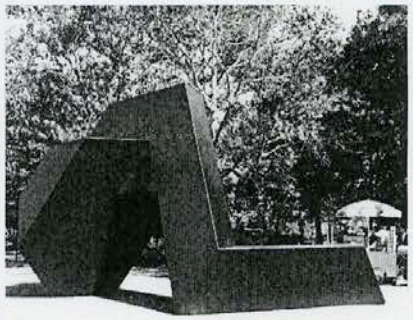

Fig. 15
The snake is out
1962

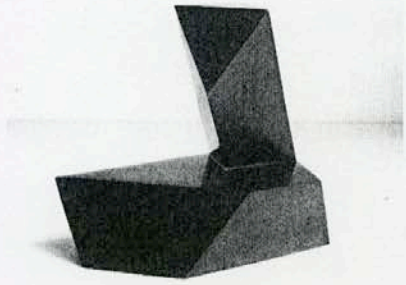

Fig. 16
Duck
Bronze
1973

characters[59]. "The Snake is Out" (fig. 15), for example, was the first sculpture that Smith created using his modules as found objects. After creating "Duck" (fig. 16), the "hard way" – by forming each module and carefully placing them together, he "was smitten by a surrealist idea: why not try to put some of the same clusters together at random"[60]. "Snake" resulted from sticking tetrahedral and octahedral forms onto other module clusters that he had assembled while making "Duck". The piece, therefore, is based on chance and impulse; it is arbitrary.

Smith's intuitive approach to sculpture often lead him to unexpected results. His "presences" often disturbed his own sense of "rightness of form"; his intuitive method seemed to skew the classical order of nature. Thus, of "Willy" (fig. 17), he said "when I first did this I was quite shocked. I didn't think I was capable of such as departure from Hellenistic standards of things ... But I had done it ... in the spirit of just putting things together without any predisposed plans and that's what came out."[61] He referred to "Amaryllis" (fig. 18) as "some terrible aberration of form"[62]. Freed from the necessary limits of designing shelter, Smith explored uncharted realms; he imposed new layers of meaning on forms he had been working with as structure for the last twenty years – thus structure evolved into metaphor.

Tony Smith's artistic production is full of contradictions; it highlights the constant tension of opposing natural forces: order and chaos, the rational and the irrational, the conscious and the unconscious, the organic and the geometric. In the late 1940s he wrote that he considered the painters to be the visionaries. When he became a sculptor he seems to have accepted his role as one too. But even as an architect, internal vision played a central role in the formation of his images, for he always believed that true creation came from the subconscious. Smith was not a scientist, but an artist; not a rationalist, but a poet.

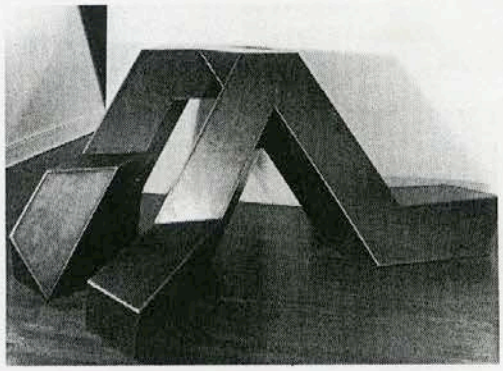

Abb. 17
Willy
1962

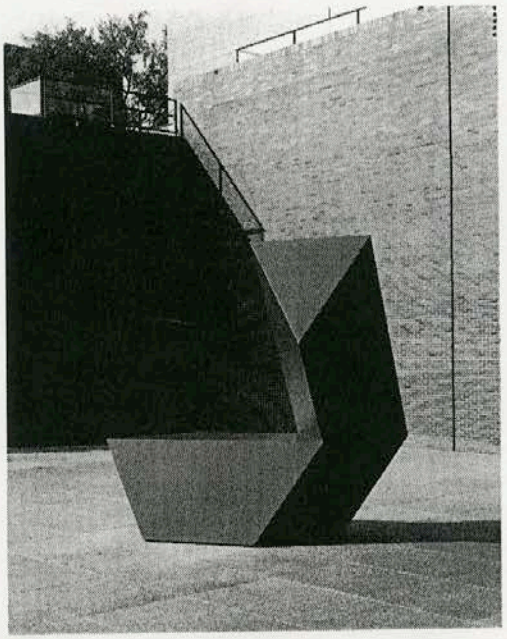

Abb. 18
Amaryllis
cor-ten Stahl
Walker Art Center Minneapolis
1965

FOOTNOTES

I wish to extend special thanks to Pepe Karmel, Lisa Kurzner, Deborah Lyons and Professor Kirk Varnedoe; their incisive thoughts were critical for the development of this essay. In addition, discussions with Jane Smith and James Shepperd were very helpful.
My deepest appreciation is to Jane Smith, for it is her extraordinary generosity that has made this study possible.
All references to unpublished and uncatalogued material from the Smith Archive are noted as "Smith Archive".

[1] Smith preferred to call his sculptures "presences"

[2] Tony Smith was never a registered architect; his buildings were always constructed in conjunction with registered architects. He often worked with his brother, Thomas Smith, who had studied architecture with Mies van der Rohe at the Illinois Institute of Technology

[3] It is unclear exactly how long Smith was isolated in the small house, however it has assumed almost mythic proportions in the retelling of Smith's biography. He repeatedly referred to the wood-burning black stove that heated the house as "a little god". In addition, he wrote that the regularity of the prefabricated structure was at the root of his attraction to the inherent repetitive elements of industrial and International Style architecture. Smith Archive, autobiography, manuscript, n. d. See also, "Master of the Monumentalists", Time, October 13, 1967, p. 85 and "Tony Smith", interview with Elayne Varian, Schemata 7 (exh. cat.), Finch College Museum of Art, Contemporary Study Wing, New York, 1967, n. p.; Reprinted in Gregory Battcock (ed.), Minimal Art: A Critical Anthology, New York, 1968, p. 379.
The house later burned; The Black Box sculpture (1962) was originally placed on the site. Smith Archive, writing, c. 1966.
As a child, he attended Sacred Heart School, in Newark, New Jersey. He graduated from St. Xavier High School in New York City and briefly attended Fordham University in New York (February – September 1930) and Georgetown University in Washington, D. C. (September 1930 – January 1931). Smith Archive, job application, 1956

[4] Smith studied drawing and watercolor with George Grosz, anatomical drawing with George Bridgeman, and painting with Vaclav Vytlacil.
He began attending the Art Students League at night, while working days. Around 1933 he owned and operated a bookstore in Newark, New Jersey; from 1934 to 1936 he worked for the family waterworks business, A. P. Smith Manufacturing Company, in East Orange, New Jersey. Smith Archive, job application, c. 1954. See Phyllis Tuchman, "Tony Smith, A Modern Master", New Jersey Monthly, v. 5 (January 1981), p. 123

[5] He studied with Lazlo Moholy-Nagy, Alexander Archipenko, Gyorgy Kepes, Henry Holmes Smith and Hin Bredendieck, among others. Smith went to Chicago intending to study architecture. He expected that an architect the status of Walter Gropius would be invited to teach at the school. When he found out that the choice was to be Chicago architect Fred Keck, Smith was dissapointed; his displeasure contributed to the demise of the school. See transcript of Paul Cummings' interview with Tony Smith, 1978, the Archives of American Art, pp. 17-20

[6] They had three children: Chiara (Kiki), and twins, Seton and Beatrice (Bebe)

[7] During these two years, Smith began to develop his artwork based modular units. Drawings and paintings, such as the important Louisenberg series (1953-55), were based on a grid system; he constructed modular structures from milk cartons and sculptural assemblages from wood. In addition, he projected numerous architectural projects, including homes, apartment houses, a Roman Catholic church and a city.

[8] When Smith returned from Germany, he began to explore the plastic possibilities inherent in the geometry of nature. His sculpture "Throne", began as a class demonstration, in 1956, "to demonstrate an economical joint – one with four spokes meeting at the center of a tetrahedron". See Samuel Wagstaff Jr., "Talking with Tony Smith", Artforum, v. 5 (December 1966), p. 17; reprinted in Battcock, op. cit., pp. 381-386. (Please note, all references to this article are to its original publication). Attracted by the mass of the natural structure, he modified it, "making the piece less diagrammatic and more complete as a thing in itself". Smith Archive, sketchbook 20, c. 1976

[9] Plato was the first person to attempt a geometrical description of structure in nature. The five Platonic Solids include the tetrahedron, the cube, the octahedron, the icosahedron, and the dodecahedron.
Authors have commented on Smith's apparent search for a singular "Urform". For example, see Dore Ashton, Sculpture on the Edge of Dreams, The Institute for Advanced Study, Princeton, New Jersey, 1982, p. 15

[10] Smith Archive, writing, "The Pattern of Organic Life in America", c. 1943

[11] Tuchman, loc. cit., p. 123

[12] Ibid. Smith's visit to the Pueblos in Mesa Verde, New Mexico, when was four years old impressed him deeply. See Tuchman, op. cit.
In the mid-60s, Smith associated the late work of Le Corbusier with his memories of the Indian structures. He said, "The direct and primitive expression of the High Court Building at Chandigahr is like the Pueblos of the Southwest under a fantastic overhanging cliff". See Wagstaff, loc. cit., p. 16

[13] While Smith used the surrealist-inspired automatic techniques of drawing, believing strongly in the veracity of images sprung from the unconcious, his work was almost never narrative.

[14] Smith Archive, handwritten autobiography, n. d

[15] See interview with Renée Sabatello Neu in Tony Smith (exh. pamphlet), The Museum of Modern Art, New York, 1968. Any mention of the Bauhaus and Constructivst traditions are conspicuously absent in his comments.

[16] See D'Arcy Wentworth Thompson's Growth and Form, 1917; second edition, 2 vols, 1942, reprinted by Cambridge University Press, Cambridge. Jay Hambidge's The Elements or Dynamic Symmetry, originally published in article form in The Diagonal in winter 1919-20, and in book form in 1926; reprinted Dover Publications, New York, 1967.
Lucy Lippard, "Tony Smith: The Ineluctable Modality of the Visible", Art International, v. 11 (Summer 1967), p. 24, reported that Smith read the Hambidge book when he was 12 years old. This point is reiterated by the artist in Wagstaff, loc. cit., p. 15

[17] This principle was applied by Smith as part of a class exercise at Bennington College. A class of students in the spring of 1961 constructed a semi-architectural structure based on a complex of cose-packed tetrakaidecahedrons, fourteen-sided modules. See Lucy Lippard, Tony Smith, Abrams, New York, pp. 10-11, Sam Hunter, "The Sculpture of Tony Smith", Tony Smith: Ten Elements and Throwback (exh. cat.), The Pace Gallery, New York, 1979, p. 5, and Wagstaff, loc. cit., p. 15

[18] Smith's sculpture "The Wall" was based on the root-five rectangle, a central element of Hambidge's thesis. See Tony Smith: Two Exhibitions of Sculpture. Wadsworth Atheneum, Hartford 1966

[19] See Hambidge, "Preface" and "Introduction"

[20] Frank Lloyd Wright, "To the Young Man in Architecture (1931)", reprinted in The Future of Architecture, Horizon Press, New York, 1953, p. 236

[21] Smith wrote later, around 1954, that "The family for whom I built it preferred to their fifty year old miner's cabin and moved in". Smith Archive, writing, c. 1954. See also, Wagstaff, loc. cit., p. 15

[22] Smith also was in residence at Taliesin East, Spring Green, Wisconsin, for a short while, perhaps only less than a month, in 1939. Smith Archive

[23] In 1940 Smith went into practice with two friends who he had known since the New Bauhaus, Ted van Fossen and Laurence Cuneo. Cuneo dropped out of the partnership after June 1941; Smith remained with van Fossen until January 1945. Together, Smith van Fossen designed a number of houses, tried to patent an integrated service core in 1941, and planned to realize Wright's Usonian dream with low-cost, prefabricated housing and ideal community planning. Smith Archive, job applications: 1954, 1956

[24] Smith built approximately fourteen houses – in Washington State, Ohio, Connecticut, New Jersey, New York, Long Island and Massachusetts. In the mid-1950s, while living in Germany, he designed stage sets for Offenbach's Operetta "Orpheus in the Underworld". In addition, he designed and installed a number of exhibitions in the 1950s, especially at the Betty Parsons Gallery.

[25] "The Core of This House is Its Kitchen", House and Garden, v. 95 (January 1949), pp. 58-59

[26] Wagstaff, loc. cit., p. 16

[27] As late as 1962, Smith referred to the project as "the best thing I have ever done". Smith Archive, correspondence, 1962.
As early as 1943 he explored the imagined a "Flower Chapel", based on a cross section of a flower. Two years later, he designed a chapel based on stacked hexagonal modules, held in tension, and raised off the ground, for his friend, the painter Fritz Bultman, and his wife. Both proposals were included in "The Pattern of Organic Life in America".
On the Bultman chapel, see Rosalind Krauss, "Contra Carmean: The Abstract Pollock", Art in America, v. 70 (Summer 1982), p. 128.
In 1953, while living in Germany, he proposed "A Project for a Roman Catholic Church in an 'Ideal' American Landscape".

[28] Smith Archive, correspondence, 1954, to the editor of Arts and Architecture magazine.
See E. A. Carmean, "The Church Project: Pollock's Passion Themes", Art in America, v. 70 (Summer 1982), pp. 110-122, especially pp. 110-115, and Rosalind Krauss, loc. cit., pp. 123-131, 155, especially pp. 123-129. See also Wagstaff, loc. cit., p. 16

[29] The unique Church design combined the inspiration of Le Corbusier's raised villas of the 1920s, with Buckminster Fuller's designs, Mies van der Rohe's concept of Universal Space, and natural symmetry.

[30] The genesis of the cellular plan was a structural analysis he had read about Frank Lloyd Wright's Johnson Wax Administration building in Wisconsin. See Wagstaff, loc. cit., p. 15

[31] Smith's 1953 Church interior was to be white, except for a blown up, three-dimensional, painted, paper-maché replica of the Christ from Grünewald's Eisenheim Altarpiece and "Fourteen abstract paintings, symbolic in number and position of the Stations of the Cross", all the same size, and by one man: Barnett Newman, Jackson Pollock, Mark Rothko or Clyfford Still. Smith Archive, statement, July 4, 1953

[32] Wagstaff, loc. cit., p. 15

[33] Ibid

[34] Tony Smith: Two Exhibitions of Sculpture. Wadsworth Atheneum, Hartford 1966. Smith wrote to Fritz Bultman in the mid-1940s suggesting that the artist investigate the possibilities of the tetrahedral and octahedral structures as the basis for new kinds of sculpture. Smith Archive, correspondence, mid-1940s. I am grateful to Jean Bultman who has generously made available the correspondence between Tony Smith and Fritz Bultman.

[35] See Scale as Content (exh. cat.), text by Eleanor Green, The Corcoran Gallery of Art, Washington, D. C., 1967

[36] Sam Hunter, loc. cit., p. 7

[37] This dual level of reference is a central aspect of Hambidge's thesis. See Hambidge, p. XI

[38] Tony Smith: Two Exhibitions of Sculpture. See also Phyllis Tuchman, loc. cit., p. 126

[39] Le Corbusier was one of the most important influences on Smith's development. Smith decided to revise Le Corbusier's Modulor system after visiting Marseilles. He felt that the apartment spaces were "arty and pinched". He believed that he had arrived at a system, based on metric measure, which was not only simpler, but also "more human" and "more flexible". He wrote that "If I wrote a short book on this subject I could demonstrate the superiority of this system to the modular on every point that Corbusier bring up except its direct application to the body which I con-

sider mystical". Letter sent by Tony Smith to Hans Noë, November 15, 1954. Thanks to Hans Noë for sharing this correspondence with me.

[40] Smith Archive, statement, 1976. Lecture by Tony Smith at the Whitney Museum of American Art, New York, June 21, 1976, transcribed by Phyllis Tuchman

[41] See Michael Fried, "Art and Objecthood", Artforum, June 1967; Reprinted in Battcock, op. cit., p. 128

[42] "Master of the Monumentalists", loc. cit., p. 80 ff., was written in conjunction with two major exhibition in 1967, Smith's installation of "Smoke" in Washington for the Scale as Content exhibition at the Corcoran Gallery of Art, and American Sculpture of the Sixties, curated by Maurice Tuchman for the Los Angeles Museum of Art

[43] Smith Archive, writing, April 14, 1976. Smith often repeated the idea that a monument is "a particular spot on the face of the eart". His thoughts about what constitutes a monument are, in part, indebted to his reading of various works by the architect-philosopher Claude Bragdon. See, for example, "Tony Smith/81 More at the Museum of Modern Art", Press Release No. 139, December 1, 1971, p. 2

[44] On the Franklin Delano Roosevelt entry see Wagstaff, loc. cit., p. 16, and "Project for a Parking Lot", Design Quarterly, 1970, p. 64.
"Generation" is the first piece I thought of as citified monumental expression." See Wagstaff, loc. cit., p. 19

[45] "Wandering Rocks" were to be grouped more closely together in open grassy settings and further apart from each other in more closed urban contexts, such as plazas.

[46] "The Maze/Tony Smith", Aspen Magazine, no, 5 + 6, section 22. See also Lucy Lippard, "Tony Smith: Talk About Sculpture", Art News, v. 70 (April 1971), p. 68

[47] Smith felt that "... the drawings should make it plain that the passages are conceived of as integral, and that without them the configuration of boxes becomes a monument". Smith Archive, writing, 1968

[48] Scott Burton, "Old Master at the New Frontier", Art News, v. 65 (December 1966), p. 54

[49] See E. C. Goossen in Nine Sculptures by Tony Smith (exh. cat.), organized by the Newark Museum, the Montclair Museum, the Art Museum of Princeton and the New Jersey State Museum at Trenton, 1970, n. p.
See also Lunar Ammo Dump (1968) at the University of Illinois, Chicago Circle, and Haole Crater (1970), planned for the University of Hawaii at Manoa. Both of these works were to have been below ground.

[50] Tuchman, loc. cit., p. 126

[51] Lippard, "Tony Smith: Talk About Sculpture", loc. cit., p. 48

[52] Ashton, op. cit., p. 15

[53] Varian, loc. cit., p. 380. Mark Rothko also preferred his work viewed in dim light.

[54] Smith had his students build a large Moebius strip model when he taught at the University of Hawaii, Summer 1969.

[55] See Wagstaff, loc. cit., p. 18 and Lippard, loc. cit., p. 24

[56] Tony Smith: Two Exhibitions of Sculpture. On "telephone art", see "Master of the Monumentalists", loc. cit., p. 83

[57] The Industrial Welding Company in Newark, New Jersey, was Smith's first fabricator; Terminal Iron works was a commercial welding shop in Brooklyn, the site of David Smith's first welded metal sculptures.

[58] "Master of the Monumentalists," loc. cit., p. 84

[59] His working method recalls August Rodin's practice of using and reusing detached hands, arms and feet from his studio to create newly assembled figures.

[60] Smith Archive, writing, August 21, 1971

[61] Whitney Museum transcript. See also Wagstaff, loc. cit., p. 14

[62] Hunter, loc. cit., p. 6.
Perhaps his discomfort lead him to think of his "presences" as "black and probably malignant"; he felt that "the social organism can assimilate them only in areas which it has abandoned, its waste area ... oriented away from the focus of its wellbeing ..." Foreword, Tony Smith: Two Exhibitions of Sculpture, Wadsworth Atheneum, Hartford 1966.

Tony Smith
Skulpturen – Sculptures
und – and
Zeichnungen – Drawings
1961-1969

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