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From Landscape to Mapscape: Robert Smithson's Maps — Bernhard Siegert

The Map is the Territory

The impressive body of works that Robert Smithson (b. 1938) produced in the short period between the early Sixties and 1973, the year of his untimely death in a plane crash, contains innumerable maps. They come in all kinds of manifestations: ordinary geographical maps, road maps, torn maps, folded maps, three-dimensional maps, earth maps, and the grid structures of buildings as well as of crystals. As Lawrence Alloway noticed, Smithson's interest in cartography was deep-rooted, and was in part stimulated by childhood access to detailed charts, which he used to plan extensive family excursions.[1] But although maps are an omnipresent and integral component of Smithson's works, only a few commentators have explored his cartographic practice and map use and considered their aesthetic, semiotic, deconstructive and media-theoretical aspects in relation to each other.[2]

In what follows I limit myself to an attempt to trace and disentangle some of the interwoven aspects of this multifaceted practice. I am doing this because I am convinced that Smithson's maps pave the way for a concept of 'Geo-Media' that goes beyond representation, and is not limited to the way space is perceived, disciplined and organised. In Smithson's work, maps and earth penetrate each other, or inform – and thereby transform – each other recursively. Smithson's maps turn into territory and vice versa by an interrelated set of operations such as scaling, transporting, making present, and the suspension of perspectival vision. In a commentary on Alfred Korzybski's famous statement that 'the map is not the territory', Gregory Bateson argued that, even if map and territory are not the same, it is impossible to distinguish between the two in either a logical or an ontological way, because it is the possibility of mapping that first of all generates a territory. What is signified is itself always already in the position of a signifier.

Only within the framework of Platonic metaphysics does the proposition of Korzybski make sense. Once one steps outside representational thinking, the relationship between map and territory becomes a chain of operations that consists of matter/form or sign/referent hinges by which differences are transformed into other differences. The mental and the physical worlds consist only of maps of maps *ad infinitum*, the territory as a thing-in-itself being useless.[3] In other words, map and territory feed back on to each other in a process of transformation that converts current distinctions into other differences. A conversion of mind into matter by way of a chain of references consisting of maps – this is a figure of thought that is not

unhelpful when examining the role of maps in the work of Robert Smithson. Smithson's maps are early examples of what has been called 'natureculture' (Donna Haraway), 'MediaNature' (Marie-Luise Angerer) or 'medianatures' (Jussi Parikka). In fact, Bateson's cybernetic way of back-coupling map and territory is not that different from Haraway's concept of 'situated naturecultures', in which companion species 'become what they are in a dance of relating'.[4] Although Smithson's maps consist of diagrammatic writing, printed matter, stones, shells, and the lattice of crystals, they nevertheless anticipate a concept like that of 'the becoming environmental of computation' by which Jennifer Gabrys indicates how computational sensor technologies and geographic spaces (like those of the oceans) or the climate co-constitute each other.[5] In Smithson, however, the question of the indistinguishability of map and territory, of writing and matter, is less a question of feedback loops than a question of scaling. Scaling, however, is not such a trivial operation as one may think. It entails consequences that trouble the divide between earth and media and thereby the very meaning of earth in relation to time and/or history. This, in turn, leads to a 'de-humanising' and 'geologising' of imagination as a classical faculty of the subject and a classical condition of objecthood since Kant.

Grids, Airports and Crystals

The fact that Smithson died in a plane crash is by no means coincidental. The act of leaving the ground and watching (and filming) the earth from a plane or helicopter was instrumental to his artistic development, as it became the catalyst for the large-scale environmental sculptures known as earthworks as well as the nonsite. Hence, it is significant that both the use of maps as an artistic practice and as a concept allowing him to reflect on art originate in a work concerning the design of an airport, a work that massively transformed Smithson's ideas about art, and became the seed of many of his later productions.

Between July 1966 and June 1967, Robert Smithson worked as a consultant for the architects Tibbets, Abbot, McCarthy and Stratton (TAMS) on a project for the Dallas–Fort Worth airport, Texas (DFW). *The New York Times* billed the construction of DFW as the 'biggest public-works project since the pyramids', an overstatement that certainly must have appealed to Smithson. Indeed, the airport covers nearly 30 square miles of prairie – an area greater than the island of Manhattan.[6] TAMS hired Smithson after Walther Prokosch of the firm had heard Smithson speaking on a panel entitled 'Shaping the Environment: The Artist and the City', held at Yale University in June 1966. Although the project was not realised because the architects did not win the competition, Smithson became acquainted with the professional use of maps and charts of all sorts: plans, aerial views, land surveys. He was fully aware of the significance of media as the historical conditions of a shift from landscape to earth, and from painting to bulldozing and dumping. Landscape does not exist independently of the media of transportation and the cultural techniques that picture it as a function of these media. In 1966 Smithson wrote in his article 'Aerial Art':

> The old landscape of naturalism and realism is replaced by the new landscape of abstraction and artifice. [...] The naturalism of seventeenth-, eighteenth- and nineteenth-century art is replaced by non-objective sense of site. The landscape begins to look more like a three dimensional map than a rustic garden. Aerial photography and air transportation bring into view the surface features of this shifting world of perspectives.[7]

Towards the end of the 18th century, Christian Cay Lorenz Hirschfeld argued in his *Theory of Gardening* (1779–85) for providing the fields next

to country roads with groups of trees and bushes that offer ‘perspectival openings’ in order to transform the landscape for those who travel through it by stagecoach into ‘a series of alternating paintings which come forward one after the other’.[8] Smithson, by contrast, called for ‘a type of art’, which pays tribute to the fact that the world when viewed from a plane no longer looks as if viewed from the window of a stagecoach but ‘more like a three-dimensional map’.

One can no longer conceive of the earth, which is now disclosed by the technical media of aerial photography and aeroplane, helicopter and film, through historical ideas of nature and landscape; aerial photography has rendered these concepts obsolete together with the notions of the beautiful, the sublime or the picturesque.[9] Lucy Lippard reported that Smithson avoided all kinds of ‘scenery’ and had not the slightest interest in ‘lovely views’.[10] The earth sites that modern media of perception challenge are sites like quarries, airfields, strip mining plants, forsaken industrial sites, and salt deserts left behind by evaporated oceans,[11] where ‘scenery’ gives way in a collapse of ‘gestalt unity’.[12]

In his work with TAMS, Smithson formulated a new approach to what ‘taking an aircraft’ means, and to what the meaning of an aircraft as an object is. In an article, ‘Towards the Development of an Air Terminal’, published in *Artforum* in 1967, Smithson developed for the first time a notion of the grid that allowed him to formulate an a-historical, non-human concept of ‘geo-art’, based on mapping, flight, and mineralogy. ‘As the aircraft ascends into higher and higher altitudes’, he wrote, ‘and flies at faster speeds its meaning as an object changes – one could even say reverses.’ Flight casts off the ‘old meaning of speed through space’ and acquires a ‘new meaning based on instantaneous time’. The aircraft, for Smithson, moves along a vector pointing to outer space which morphs it into a satellite. ‘The farther out an object goes in space, the less it represents the old rational idea of visible speed.’ The old idea of ‘visible speed’ is expressed by the streamlining of the forms of airplanes, which make visible ‘speed through space’. Such ‘streamlines of space are replaced by a crystalline structure of time’, as demonstrated by a surveying satellite fabricated by the Cubic Corporation. It is not only that the cube is one of the basic crystal forms, but that the surveying which it performs discloses an abstract system, a language, by which the earth, matter and architecture are connected to each other.

> The maps that surveyors develop by coordinating land and air masses resemble crystalline grid networks. Mapping the Earth, the Moon, or other planets is similar to the mapping of crystals. Because the world is round grid co-ordinates are shown to be spherical, rather than rectangular. Yet, the rectangular grid fits within the spherical grid. Latitude and longitude lines are a terrestrial system much like our city system of avenues and streets. In short, all air and land is locked into a vast lattice. This lattice may take the shape of any of the six Crystal Systems.[13]

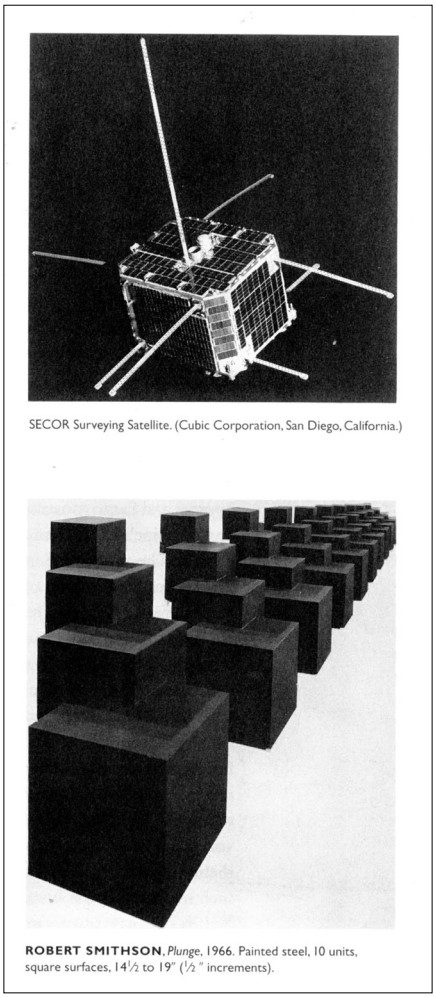
During the above-mentioned panel at Yale in 1966, Smithson discussed ‘the whole city in terms of a crystalline network’, which attracted the attention of Prokosch of TAMS, as it correlated with his interest in modular designs. In the same way, Smithson regarded the architecture of the Bauhaus and of the 1930s in New York as articulated by this language. He referred to the English translation of Konrad Wachsmann’s *Turning Point of Building: Structure and Design* (1961), which contains a series of diagrams that show architecture emerging entirely from an abstract system of rotating and interpenetrating planes. ‘His units’, Smithson comments, ‘were prefabricated, standardized and crystalline…’. Smithson’s mineralogically

educated eye had recognised at once that a diagram in Wachsmann corresponded to one that he had seen in Dana's *Textbook of Mineralogy*.[14] Wachsmann writes, with regard to the diagrams in his own book, that 'time and movement were controlled as a supplementary ordered system of interpenetrating planes'.[15] In his essay 'Ultramoderne' (German in the original), which he published the same year as his article on the DFW air terminal (1967), Smithson relates the idea of a non-linear time, connected to crystallisation, and 'ultraist' architecture to the opposition between a modernist chronotope, in which time is organised as organic history, and an ultraist chronotope, in which time is crystalline, a-historic, and non-human. Drawing on George Kubler's *Shapes of Time* and his notion of 'prime objects', he writes: 'The Modernist claims to originality have made the primes less rigorous. The more exact the primes, the clearer the Time-Crystal. There are two types of time – organic (Modernist) and crystalline (Ultraist).'[16] The concept of the time-crystal Smithson derived from J.G. Ballard's science-fiction novel *Crystal World*. In Ballard's novel an explanation of the crystallisation phenomenon is provided by the character of Captain Radek, who likens the crystalline proliferation to a temporal mutation:

> Tatlin believes that this Hubble Effect, as they call it, is closer to a cancer than anything else—and about as curable—an actual proliferation of the sub-atomic identity of all matter. It's as if a sequence of displaced but identical images of the same object were being produced by refraction through a prism, but with the element of time replacing the role of light.[17]

In Ballard's story, crystals embody a radically non-linear model of time, a vision which must have reminded Smithson of Wachsmann's design of a crystal grid of planes that penetrate each other and that control time and movement. Smithson's notion of the map locks such an 'ultraist' crystalline time concept to what he later would have called 'the site': 'The surfaces of most 'thirties buildings may be viewed as topographic maps or interminable landscapes [...]. The outer walls of the Bell Telephone Building near Sixth Avenue and 17th Street are vertiginous maps that reach into the immensities of nowhere.' Smithson refers to the Art Deco Walker Tower in Chelsea. 'Vertiginous maps that reach into the immensities of nowhere'[18] – in a quite similar way Smithson described his nonsites as 'map[s] that tells you how to get nowhere'.

Not by chance, Smithson placed an image of one of his 'minimalist' sculptures below the image of the cubic satellite (Fig.1).[19] *Plunge* represents a version of an incommensurability to which Smithson usually refers with titles like 'Alogon' or 'Surd'.[20] The two series of cubes are incommensurable in the sense that the factual spatial reduction of the cubes in the transversal rows disturbs the perspectival (i.e. fictional) foreshortening of the cubes in the orthogonal rows, and vice versa. The structure of the space (of the sculpture) and the structure of perception stand in conflict with each other. Minimalist sculpture and the surveying satellite both suspend perspectival vision.



SECOR Surveying Satellite. (Cubic Corporation, San Diego, California.)

ROBERT SMITHSON, *Plunge*, 1966. Painted steel, 10 units, square surfaces, 14½ to 19" (½" increments).

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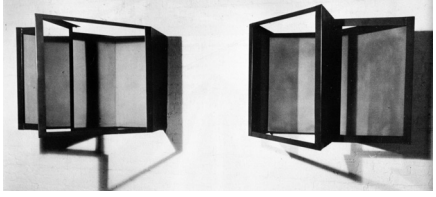


2—

Suspension of perspectival vision is a dominant theme of Smithson's earlier work in the 1960s. His *Enantiomorphic Chambers* (Fig.2) are in principle nothing but an altered stereoscopic viewer, in which the two separate pictures are replaced by two separate mirrors, with the effect that any fused image is excluded. 'This negates any central vanishing point.'[21] The term 'enantiomorphic' was borrowed by the artist from crystallography, where it refers 'to either of a pair of crystalline chemical compounds whose molecular structures have a mirror image relationship to each other.'[22] In the 1966 article, however, the suspension of stereoscopic vision by the

Larger illustrations and captions on pp. 13–21

medium of the crystal is associated with the map – as 'maps resemble crystalline grid networks'.[23]

In the 'Ultramoderne' article crystalline properties were linked to Kubler's 'prime objects', which reappear in Bauhaus architecture or minimalist sculpture, as geometric lattices, axes, vectors, planes and grids that supplanted the paintings (even those of Jackson Pollock) that belong to a modernist, organic, historic time.[24]

Non-linear (crystalline) time, the subversion of the system of linear perspective, and the grid networks of crystals and maps are from now on bound together in Smithson's mind. With the concept of the 'nonsite' Smithson found an art form that brought together the grid, the map, the abstraction from the raw material (which is the system of crystals) and the return to the raw material.

Nonsites: Maps that Tell You How to Get Nowhere

In his conversations with the film-maker Dennis Wheeler, Smithson came back to the idea, already formulated in the article on the DFW airport, that one can conceive of the grid of latitudes and longitudes as a scaled-up crystal lattice:

> The scale of a raw crystal is abstracted to the point where you get a crystal lattice. And this lattice is extended to the latitudes and longitudes of the world, so that you're drawing lines and grids over the world. [...] There are six crystal systems that can be drawn out of all raw material [...] Now if you take these six crystal systems and extend these to a global view with the lattice drawn over the earth, all the early works are dealing with that problem ... so that in the nonsite you have a return to the raw material where the abstract lattice and grids encompass raw material...[25]

The operation of scaling allows Smithson continuously to connect the Symbolic (in the Lacanian sense) of the global grid of parallels and meridians with the interior of matter. Writing, in Smithson, is not opposed to matter, the raw materials of the earth – on the contrary.

But how does the nonsite connect to the cartographic and crystal grid in a way that accounts for the dual nature of Smithson's maps? What the nonsite does in the first place is to draw a distinction. 'What you are really confronted with in a Nonsite', Smithson said in an interview, 'is the absence of the Site.'[26] This seduced early critics into equating the Nonsite/Site relation with that of the structuralist signifier/signified.[27] If the nonsite is a signifier, it is one that takes the form of a kind of writing. 'The nonsite exists as a kind of deep three-dimensional abstract map that points to a specific site on the surface of the earth.' Or: 'My nonsites in a sense are like large abstract maps made into three dimensions. You are thrown back to the site.'[28] As writing, the signifier is a material thing; but what is the structure of this embodied signifier? Obviously, the kind of representation with which we are dealing here is not of the type of Saussurian semiotics. It is of the same type that we encounter in anachronistic forms of representation, where representation still has its medieval meaning, as in relics, or effigies. These types of representations are metonymic, which means that a part of what is represented is present in the representation – and in Smithson's case, as with relics, this is a real present, not memorised or imagined. Alexander Nagel therefore was right, when he related Smithson's artistic practice of collecting to the tradition of transporting material from holy sites to church spaces and other places by pilgrims.[29] Something that belongs to the referent has travelled from its site to the nonsite of the signifier, where it has become part of it.[30] The

documentations pertaining to the nonsites Pine Barrens and Franklin tell you that 'Tours between the Nonsite and the site are possible'.[31]

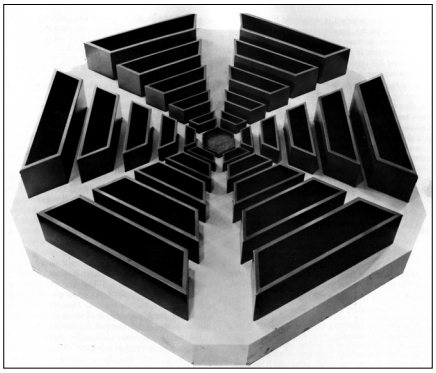
The fact that maps are not just representational, but operational media which allow 'tours between the Nonsite and the site', was utilised by Smithson also for certificates, a practice that placed him close to conceptual art. On 9 July 1969 Smithson wrote the following letter to Andy Warhol about *Mirror and Crushed Shells*:

> Dear Andy,
> This is to certify that the Mirror with Crushed Shells (Sanibel Island) is an original work of art. It consists of three mirrors which may be restored if broken, and one burlap bag of crushed shells collected by the artist at Sanibel Island, April, 1969. If any shells are ever lost, the owner has the right to restore the work by collecting more shells from Sanibel Island (northern part of island), see map of site (which is part of the work). The three mirrors are held in place in a corner by the pressure of the shells only. (See photo.) The work is owned by Andy Warhol, and can not be duplicated.[32]

The map, thus, is at the same time part of the work and part of the certificate, because it designates the place where the owner of the piece, Warhol, is allowed to collect shells if any of the original shells are lost. Hence, the map not only represents the place where the shells are located, it also establishes a relation between the real shells in the museum (or in Warhol's collection) and the real shells at the beach of Sanibel Island. This operational relation transgresses the conventional (representational) sign relation; the shells in Warhol's collection are originals only inasmuch as they are part of an indefinite process of collecting, by which they can be replaced by other shells. The map allows matter, so to speak, to flow from site to nonsite. Still, ironically, the certificate certifies that the work cannot be duplicated.

However, other documents, such as the one that is part of the nonsite *The Palisades*, are warnings: 'Between the site and the Nonsite one may lapse into places of little organization and no direction.'[33] The route from nonsite to site is the route of entropy. Smithson's notion of entropy corresponds only slightly to the second law of thermodynamics. It is informed by two sources: first, Alfred Ehrenzweig's psychoanalytic concept of de-differentiation (which Smithson equated to the loss of gestalt perception); and secondly, J.G. Ballard's novel *The Crystal World*, through which the collapsing of gestalt unity is associated with the 'time crystal' – that is, the loss of the directionality of time's arrow. That is why, for Smithson, entropy is both a concept that suspends the distinction between mind and matter, subject and object, and is connected to the process of crystallisation. The closer one gets to the entropic pole, the less time is directional and the more time becomes crystalline. Of his experience during a visit to the slate quarry of Bangor-Pen Angyl in Pennsylvania, which he visited with Nancy Holt and Virginia Dwan in June 1968, he wrote: 'The present fell forward and backward into a tumult of "de-differentiation", to use Anton Ehrenzweig's word for entropy.'[34]

Finally, in 1970, Smithson said of the map that is part of the Mono Lake Nonsite: 'Maps are very elusive things. This map of Mono Lake is a map that tells you how to get nowhere.'[35] This does not mean that the map is misleading: it means literally that it suspends the very category of 'being somewhere'. Hence, the nonsite/site dialectic is not only a special semiotic structure, a metonymic sign, a tomb, or reliquary, in which a 'remainder' of the real is 'buried'; it is at the same time the deconstruction of the representational and culture-technical function of the sign, as it



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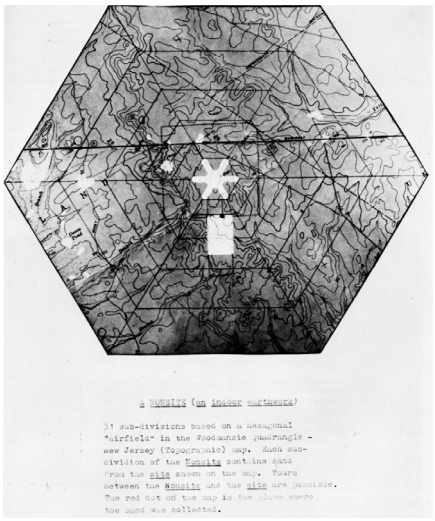
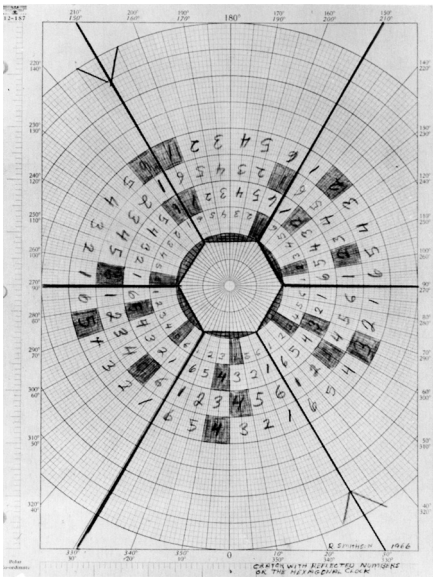


a NONSITE (an Amherst earthwork)

31 sub-divisions based on a hexagonal "airfield" in the Woodmansie quadrangle - new Jersey (Topographic) map. Each sub-division of the Nonsite contains sand from the site shown on the map. Tours between the Nonsite and the site are possible. The red dot on the map is the place where the sand was collected.

3b—



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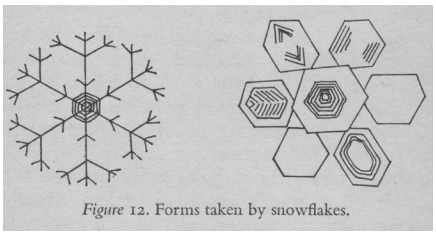

Figure 12. Forms taken by snowflakes.

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endlessly suspends the signified. Derrida's *différence* is an integral part of the nonsite/site-dialectic. Even if you manage to arrive at the site, at the signified of the signifier, you will never be in its presence, you will only encounter an absence, a 'sort of nonlocus in which an infinite number of sign-substitutions come into play.'[36]

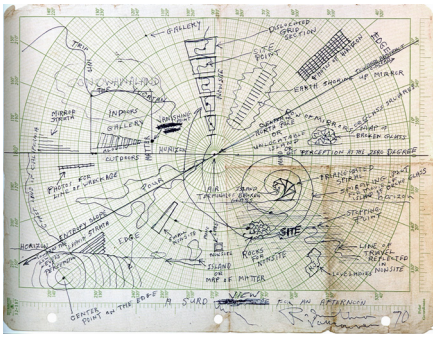
Let's look at an example (Fig.3). Smithson started to create the first of his nonsites, *A Nonsite Pine Barrens, New Jersey*, while he was still working as a consultant to TAMS Architects in 1967, allowing us to detect a clear connection between the nonsites and the airport project. The form of the nonsite was developed from a drawing (Fig.4) called *Crater with reflected Numbers, or the Hexagonal Clock*, which he produced on special graph paper with polar co-ordinates. He divided the 360 degrees into six 60-degree sections, each of which forms a corner of a hexagon, inscribed in a darkened circle. As you can read in the text below the map, the centre of the hexagon is an 'airfield', thus alluding to the 'crystalline structure of time' disclosed by aircraft, the epitome of which is the surveying satellite. As Smithson explains in the discussions with Heizer and Oppenheim: 'The first nonsite that I did was at the Pine Barrens in southern New Jersey. [...] There was a hexagon airfield there which lent itself very well to the application of certain crystalline structures which had preoccupied me in my earlier work. A crystal can be mapped out, and in fact I think it was crystallography which led me to mapmaking.'

The 'circular format of the flattened-out earth's hemisphere' is mapped on the hexagon, which, as Smithson well knew from his mineralogical textbooks, is one of the six crystal systems. For instance, as he tells Wheeler, ice crystals develop in a hexagonal lattice. And, *voilà*, when we open the chapter on 'Ice' in Leslie William Marrison's *Crystals, Diamonds and Transistors*, one of Smithson's favourite books, we discover the hexagon in the centre of a drawing of a snowflake (Fig.5), which branches into the same six sections of 60 degrees as Smithson's *Crater* drawing and his Pine Barrens map. Here, finally, aerial map and crystal coincide. Aerial art, or mapping from above, turns the world into an ice crystal. 'The rationality of a grid on a map sinks into what it is supposed to define,' Smithson writes in the 'Spiral Jetty' essay. Today, in the days of gene databasing, we could say that the rationality of the database sinks into what it is supposed to define. The map *is* the territory.[37] Period.

Polar Co-ordinates

Smithson was familiar with the various literary antitheses to Korzybski's famous dictum that the map is not the territory. A chapter from his essay 'A Museum of Language in the Vicinity of Art', to which he gave the telling title 'Mapscapes or Cartographic Sites', is prefaced with a quotation from Borges' *Del rigor en la ciencia*, and in the same section of the text Smithson also quotes the famous maps from Lewis Carroll's *The Hunting of the Snark* and *Sylvie and Bruno Concluded*.

Smithson reads the map on the scale of 'a mile to the mile' as an analogy of the fate of painting since the 1950s: 'Perhaps museums and galleries should start planning square mile interiors.'[38] However, if the museum space cannot become co-extensive with the surface of the earth, one needs to find other solutions, such as taking one square of the grid on a scale of one mile to the mile, filling it up with material from the site to which it refers, and transporting it to the museum space. As a consequence, one has to read the nonsites as metonymies of maps-which-are-the-territory. But now you will object that in many cases the form of the nonsites is not quadratic; usually they have the form of a prism with trapezoidal base. This objection, however, vanishes into thin air once one realises that Smithson does not think in terms of cartesian but rather of polar co-ordinates.



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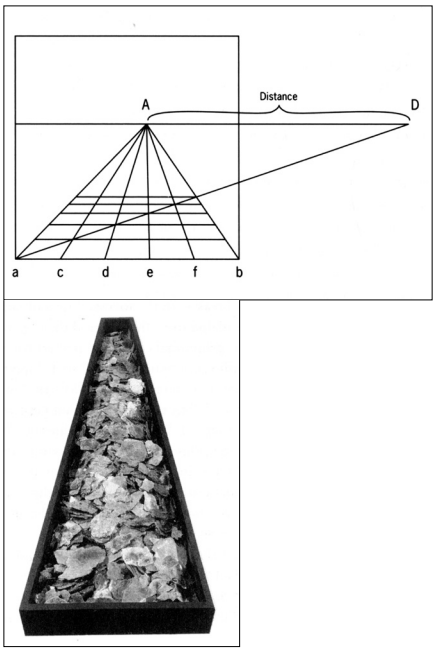

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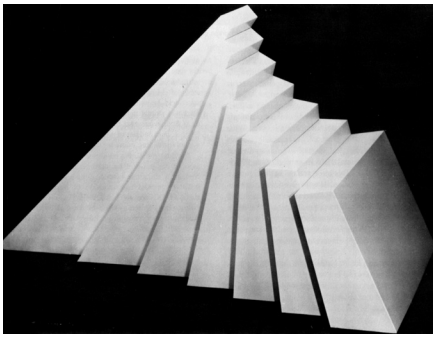

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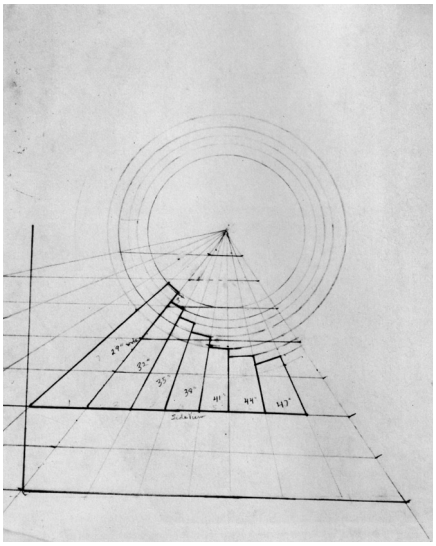
For many of his drawings Smithson used a sketch block with gridded graph paper detailing polar co-ordinates. On one of these pages he drew the *Surd View for an Afternoon*, but several spirals, too. Art historians have usually interpreted the *Surd View for an Afternoon*, which Smithson drew during the interview sessions with Dennis Wheeler, as a mapping of Smithson's works up to that point, and have ignored the polar co-ordinates completely. On maps, where the grid is formed according to polar co-ordinates, the basic units of the grid have the typical form of the Smithsonian nonsites. This is well proven by the *Surd View* (Fig.6) – in the third quadrant we find inscribed a nonsite, and in the second quadrant another between 90° and 105°. Next to this is the inscription 'Dislocated Grid Section'. Now, here is the key question: why did Smithson favour polar co-ordinates? The answer is that polar co-ordinates make possible the convergence between central perspective and cartography. The form of these nonsites, which results from the grid of polar co-ordinates, coincides with the form of a basic unit of the perspectival grid, which consists of orthogonal and transversal lines. This becomes evident if we look at two well-known examples that demonstrate the construction of central perspective: Erwin Panofsky's demonstration of Alberti's method of *costruzione leggittima*, and the *veduta* of ideal architecture attributed to Francesco di Giorgio Martini. If photographed from the appropriate angle, a typical nonsite could be fitted perfectly into the respective grid of orthogonals (see Figs 7, 8, 9, 10). 'The converging outer edges of the bins continued the play on orthogonals that characterise *Pointless Vanishing Point*.'[39] This flipping back and forth between a unit of the grid of polar co-ordinates and a unit of the grid of central perspective I shall call 'Smithson's basic operation'. It can be traced back to the shift from landscape view to aerial view, from the horizontal to the vertical, i.e. the lesson the DFW airport project had taught Smithson. However, it is key that Smithson did not replace central perspective with map, but that he created a 'dialectic' in which both oscillate like the two series in an *Alogon* piece.

This oscillation between perspectival foreshortening and the cartographic, between vision and the cartographic grid, generates the geologic formation of *Leaning Strata* (Fig.11). *Leaning Strata* is a sculpture constructed by conflating the 'two systems for representing space – perspective and cartography – in an uneasy alliance'.[40] Smithson is forming geology from the intersections of the grid of polar co-ordinates and the perspectival grid (Fig.12). The grid of polar co-ordinates, when it intersects with the perspectival grid, turns into a geo-medium – or, in other words, by way of Smithson's basic operation, the imaginary third dimension of central perspective is turned into an imagination of geology. From this we have to conclude that earth matter, formed by sedimentation and compressive forces, is something that does not belong completely to the side of the object of perception but is formed by a passage from the order of the imaginary to the order of the real.[41] Hence, Smithson's imagination of geology is already also a geology of imagination. You need the deforming agency of the grid of polar co-ordinates in order to be able to make visible the faulting of geologic time within perspectival vision. *Leaning Strata* suggests a geologic formation, a syncline, an anticline, perhaps an angular unconformity. The deformation of the geometric construction of perspective makes the vanishing point appear pointless, and lets the subject become non-human. We need geo-media like Smithson's mapscapes in order to realise that we are 'geologic subjects', to borrow a term coined by Kathryn Yusoff. Smithson's basic operation twists sight into a physical thing which comes to us from alien, unimaginable horizons of time. Our seeing is not ours, it's heteronomic. Smithson's art is 'the art of becoming inhuman'.[42]



12—

Earth maps

In his essay on 'Aerial Art' Smithson holds that the negation of perspectival vision inherent in aerial art is able to disclose 'hidden dimensions of time apart from natural duration – an *artificial time* that can suggest galactic distance here on earth'.[43] The sites, thus, are not only absent in space. They are absent in time as well. In his conversation with Kenneth Baker, Smithson comments on the *Nonsite-Site Uncertain*, which is filled with pieces of coal:

> The coal was once a swamp of tropical vegetation. Virginia and Pennsylvania were once covered with seas. So, the site is prehistoric, gone forever. The rectilinearity of the bins and the interior of the gallery tell us nothing about the mines that the coal came from. Geography has a way of vanishing in my three-dimensional maps, which I call Nonsites.[44]

The earth maps and the island projects Smithson began with in 1969 are nonsites that point to sites that are absent in time; he is thereby relating the nonsite/site dialectic to land masses buried in geologic deep time.

> The pieces that I do on a landscape are maps of material, as opposed to maps of paper. They point back in time to prehistoric land masses that don't exist now. This points to gigantic land masses, or great scale properties that don't exist on the surface of the earth. So you are going into a kind of time situation in which the earth is submerged; one of the nonsites points to a site that is uncertain because a site is buried in the carboniferous period. It is not just a space concern. It involves a consciousness of time as well.[45]

Both *The Hypothetical Continent of Lemuria* and *The Hypothetical Continent of Cathaysia* were earth maps which consisted each of a 'map' made of rocks or seashells in the form of the hypothetical continent, and maps drawn on paper. The map of Cathaysia was built on quicksand in Alfred, New York. 'The map was made of rock', Smithson reported in an interview. 'It sank slowly. No sites exist at all; they are completely lost in time, so that the earth maps point to nonexistent sites.'[46] Cathaysia, situated to the north of Australia, existed in the lower Carboniferous Period 350 to 305 million years ago; the 'East Indies', including New Guinea, are – as one can see on Smithson's map – what is left of this continent. If collecting was the artistic practice that was typical for the nonsites, it is now sedimentation, which can only be achieved by a collaboration between artist and earth. The map drawn on paper refers to the map which, by sedimentation, becomes part of its referent.

'Between writing in the conventional sense', Gary Shapiro writes in *Earthwards*, 'and the earth, which can be considered as text, are maps.'[47] As a matter of fact, maps of material and maps of paper are not as opposed as Smithson sometimes implies, as in the quote above. In his essay 'A Sedimentation of the Mind: Earth Projects', Smithson writes about art as a practice by which 'mind and matter get endlessly confounded'. Mind exists only in the medium of language, and '[m]y sense of language is that it is matter and not ideas – i.e. "printed matter"',[48] Smithson notes in June 1972. In the beginning of the *Spiral Jetty* film we see printed matter – i.e. fragments of maps, torn out of a world atlas – falling down from a slope of Great Notch Quarry in New Jersey. Sedimentation layers the archive of maps on to the archive of the earth. Earth itself is made of fragmented and scattered maps.[49] Or, briefly: 'The ground becomes a map.'[50]

Another version of this stratification of printed matter and earth matter is Smithson's contribution to an issue of the journal *Aspen*, which was

dedicated to the Fluxus movement, and was published shortly after the building of the Spiral Jetty. Playing on the double meaning of 'fold', 'STRATA. A GEOPHOTOGRAPHIC FICTION'[51] is a fold-out, which folds paper as the earth folds geological strata. Strata of language alternate with photographs of fossils or geologic formations that represent the eras from the Cretaceous down to the Pre-Cambrium.[52] The printed lines pile one on top of another like sediments of words. The photographs of the rock layers, some of which contain fossils, dissolve due to upscaling into the half-tone raster of the silkscreen.[53] Some of the sentences can be read as self-references of the medium: 'THIS PERIOD IS LOSING ITSELF IN SAND AND PAGES. THE REGION BEGINS TO DISSIPATE.' 'The ground becomes a map', once more, but this time it is the ground of the photograph that discloses a grid.

The grid is a geo-medium because it allows art by way of scaling to enter a non-human earth time, a crystal time, which we today can oppose to the Anthropocene concept, which is doing the opposite thing: scaling up human history to geologic dimensions.

In the Anthropocene debate, as well as in geo-engineering, geologic deep time is anthropomorphised and tamed by the illusion of history. In Smithson's work grids allowed art to step out of history – out of art history in particular, but more generally out of human history, out of an anthropomorphic time – and to become part of a non-organic, non-linear, entropic geologic deep time. And, as this last example demonstrates, it is by grid-based technical media like photography and by the operation of scaling that language enters an a-historic, non-human geologic time. More precisely, it is by the interlocking of media-technical grids, crystalline grids, cartographic and perspectival grids, that representation and geologic strata merge. This comes close to the notion of some Earth System scientists who contend that in the Anthropocene we cannot distinguish any more between Earth Systems and media infrastructures, or, in other words, that the media have indeed become one of the Earth Systems.[54] Smithson may speak of Earthworks, Earth Maps or Earth Projects, but he is interested in the earth only inasmuch as earth is subjected to a process of entropy and de-differentiation – a process enabled by media and techniques of an altered perception by which earth is transduced into the 'surd', i.e. an elemental *alogon* which becomes noticeable within perception as a 'becoming formless'. This process is the process of scaling itself. Scale, as opposed to size, cannot be measured, i.e. put into proportion to a fixed unit of size or resolution. In particular, scale cannot be put in relation to linear time: by scaling 'the present falls forward and backward into a tumult of "de-differentiation"' or crystallisation. Scaling does not leave the subject and its imaginary powers of gestalt perception unaltered. As scale 'cannot be put in relation with anything [...] it sends us back in a state of incommensurability: the "surd situation"'.[55]

Smithson's maps, which – as I hope I have been able to show – on various levels oscillate between the Symbolic and the Real,[56] or form passages between the two, anticipate, or at least resonate with a media-ecological thinking which no longer studies how the earth is represented by media, but reveals how media and earth co-constitute each other. Media-ecology assumes that media and earth are ontologically equivalent – an assumption that Smithson anticipated when he wrote that 'the names of minerals and the minerals themselves do not differ from each other, because at the bottom of both the material and the print is the beginning of an abysmal number of fissures.'[57] However, what today's media-ecological thinking can still learn from Smithson is that the operations which enact these de-differentiations of the Symbolic and the Real always also imply the de-differentiation of the Imaginary and the Real (thus, all three Lacanian

registers are involved). Dissipation takes place ‘at the bottom’ (to go to the bottom is effectuated by scaling!) of the Symbolic, the Real, and the Imaginary. Smithson’s artistic practice discloses an imagination of geology that is an imagination of a posthuman nature because it is processed by the entropic dissipation of mind into matter, or, respectively, by the formation of a time-crystal which folds crystallography onto cartography onto architecture onto photography onto…

1 Lawrence Alloway, 'Site/Nonsite', in Robert Hobbs, *Robert Smithson, Sculpture* (Ithaca: Cornell university Press, 1981), 42.

2 Although Eugenie Tsai underlines Smithson's fascination with cartography, her take on Smithson's maps remains purely descriptive. See Eugenie Tsai and Robert Smithson, 'Plotting a line from Passaic, New Jersey, to Amarillo, Texas', in *Robert Smithson*, ed. Eugenie Tsai (Berkeley and Los Angeles: The Museum of Contemporary Art Los Angeles and University of California Press, 2005), 25, 28.

3 Cf. Gregory Bateson, 'Form, substance, and difference', in Gregory Bateson, *Steps to an Ecology of Mind. Essays in Anthropology, Psychiatry, Evolution, and Epistemology* (Northvale, New Jersey, and London: Jason Aronson Inc., 1987), 318–322.

4 Donna J. Haraway, *When Species Meet* (Minneapolis and London: University of Minnesota Press, 2008), 25. See also: Jussi Parikka, 'Medianatures', in *Posthuman Glossary*, eds Rosi Braidotti and Maria Hlavajova (London and New York: Bloomsbury Academic, 2018), 251–253.

5 Jennifer Gabrys, *Program Earth. Environmental Sensing Technology and the Making of a Computational Planet* (Minneapolis and London: University of Minnesota Press, 2016).

6 Janna Eggebeen, 'Between two worlds: Robert Smithson and Aerial Art', in *Public Art Dialogue*, 1:01, (2011), 87–111.

7 Robert Smithson, 'Aerial Art', in *The Collected Writings* (hereafter *CW*), ed. Jack Flam (Berkeley, Los Angeles, London: University of California Press, 1996), 116. The essay was published in 1969, but Smithson remarked somewhere else that the text was written already in 1966; cf. Kenneth Baker, 'Talking with Robert Smithson', in *Robert Smithson. Spiral Jetty*, eds Lynne Cooke and Karen Kelly with Bettina Funcke and Barbara Schröder (Berkeley, Los Angeles, New York, 2005), 158.

8 Christian Cay Lorenz Hirschfeld, *Theorie der Gartenkunst* (Leipzig, 1785), vol.V, 184.

9 Cf. Gary Shapiro, *Earthwards. Robert Smithson and Art after Babel* (Berkeley, Los Angeles, London: University of California Press, 1995), 113–114.

10 Lucy Lippard, 'Breaking Circles. The politics of prehistory', in Hobbs, *op. cit.*, 38.

11 Discussions with Oppenheim, Heizer and Smithson, in *CW*, *op. cit.*, 249–251.

12 Smithson, 'A Sedimentation of the Mind: Earth Projects', in *CW*, *op. cit.*, 110.

13 Smithson, 'Towards the Development of an Air Terminal Site', in *CW*, *op. cit.*, 54.

14 Cf. Edward Salisbury Dana, *Textbook of Mineralogy* (14th edn, New York and London: John Wiley & Sons, Inc./Chapman & Hall Ltd., 1898), 11.

15 Konrad Wachsmann, *Turning Point of Building: Structure and Design* (New York: Reinhold Publishing Co., 1961), 57. On Smithson and Wachsmann see also Ann Reynolds, *Robert Smithson: Learning from New Jersey and Elsewhere* (Cambridge, MA, London: MIT Press, 2003), 151–152.

16 Smithson, 'Ultramoderne', in *CW*, *op. cit.*, 63.

17 J.G. Ballard, *The Crystal World* (New York: Farrar, Straus & Giroux, 1966), 73.

18 'Ultramoderne', in *CW*, *op. cit.*, 63.

19 I put 'minimalist' in quotation marks, because Smithson's minimalism of the years 1965/66 represents a highly unorthodox interpretation of the principles pronounced by the minimalists. Cf. Maud Maffei, *Robert Smithson and Cybernetics: Language, Technology and Abstraction* (Dissertation, Kunsthistorisches Institut der Freien Universität Berlin and Université Paris 8 Vincennes Saint-Denis, 2016), 13. 'In 1965 he dares to publish a text on Donald Judd in which he completely diverts the work of the artist from the minimalist principles stated by the latter a short time before in *Specific objects*. He invented "Judd" as notes well Dan Graham, and Judd never forgave him.'

20 The word *alogon* designated in the discourse of the Pythagoreans the unutterable, and the irrational numbers in particular (like the square root of 2). The reason why Smithson uses the word *alogon* for the 'collapse of gestalt unity' is that Proklos Diadochus, in a scholium to the tenth book of Euclid's *Elements*, had identified the *alogon* with the *aneideon*, the formless. Smithson knew the scholium of Proklos from Tobias Dantzig's book *Number. The Language of Science* (1954), which he had in his library. The chapter 'The Unutterable' quotes the passage from Proklos verbatim. Dantzig translates the Greek *aneideon*, that which has no gestalt, by *formless*, and informs the reader that 'unutterable' stands for 'alogon' in the original.

21 Smithson, 'Pointless vanishing points', in *CW*, *op. cit.*, 359.

22 Hobbs, *op. cit.*, 59–61.

23 'Towards the development of an air terminal', in *CW*, *op. cit.*, 54.

24 Cf. Amelia Barikin and Chris McAuliffe, 'Robert Smithson: Time Crystals', in *Robert Smithson: Time Crystals*, exh. catalogue (Caulfield East, Australia: Monash University Museum of Art, and St Lucia: The University of Queensland Art Museum, 2018), 6.

25 Smithson, 'Four Conversations', *CW*, *op. cit.*, 197.

26 Smithson, 'Fragments of an interview with P. A. [Patsy] Norvell (1969)', in *CW*, *op. cit.*, 193.

27 Lawrence Alloway, 'Sites/Nonsites', in Hobbs, *op. cit.*, 42.

28 'Earth: Symposium at White Museum, Cornell University, 1970', in *CW*, *op. cit.*, 181.

29 Cf. Alexander Nagel, 'Robert Smithson removed from his sources', in *RES: Anthropology and Aesthetics*, No.63/64, Wet/Dry (spring/autumn 2013), 285–288.

30 The 'first' nonsite manifested itself in the form of a TV screen. Part of the Dallas–Fort Worth airport project was that the connection between Site at the fringe of the runways and the interior of the terminal was to be established by TV cameras. The rectangle of the TV screen would have anticipated the rectangular form of the nonsites. The idea of using TV screens as nonsites was then given up in favour of the two- and three-dimensional maps. But Smithson also talked about photographs as nonsites several times. Cf. 'Interview with Robert Smithson, ed. Paul Toner and Robert Smithson', in *CW*, *op. cit.*, 234.

31 Cf. Hobbs, *op. cit.*, 102. 'Tours to sites are possible', one reads in the documentation pertaining to *A Nonsite, Franklin, New Jersey*, 1968. Cf. Hobbs, *op. cit.*, 106.

32 Smithson, letter to Andy Warhol, 9 July 1969. Robert Smithson and Nancy Holt Papers, microfilm, Archives of American Art, Smithsonian Institution, Washington, DC, reel 3833.

33 Documentation for Nonsite (Palisades, Edgewater, New Jersey), 1968, map, typed description. Cf. Hobbs, *op. cit.*, 110.

34 'A sedimentation of the mind', in *CW*, *op. cit.*, 110.

35 Discussions with Heizer, Oppenheim, Smithson (1970), in *CW*, *op. cit.*, 249.

36 Jacques Derrida, 'Structure, sign, and play in the discourse of the human sciences', in *Writing and Difference*, trans. Alan Bass (Chicago, University of Chicago Press, 1978), 280.

37 Cf. Stefan Helmreich, 'Sequence maps become the territory', *Alien Ocean. Anthropological Voyages in Microbial Seas* (Berkeley and Los Angeles, CA: University of California Press, 2009), 194.

38 Smithson, 'A museum of language in the vicinity of art', in *CW*, *op. cit.*, 93.

39 Tsai and Smithson, 'Plotting a line', *op. cit.*, 26.

40 Hobbs, *op. cit.*, 103. Cf. also Ann Morris Reynolds, *Robert Smithson: Learning from New Jersey and Elsewhere*, 127.

41 Cf. Gilles A. Tiberghien, 'Robert Smithson and aerial art', in *Seeing from Above. The Aerial View in Visual Culture*, eds Mark Dorrian and Frédéric Pousin (London and New York: I.B. Tauris, 2013), 284.

42 Kathryn Yusoff, 'Geologic subjects, nonhuman origins, geomorphic aesthetics and the art of becoming *in*human', in *Cultural Geographies* 22(3) (2015), 384.

43 'Aerial art', in *CW*, *op. cit.*, 117.

44 Smithson in Baker, 'Talking with Robert Smithson', *op. cit.*, 150.

45 'Interview with Robert Smithson, ed. Paul Toner and Robert Smithson', in *CW*, *op. cit.*, 234–236.

46 'Fragments of an interview with P. A. [Patsy] Norvell (1969)', in *CW*, *op. cit.*, 193.

47 Shapiro, *op. cit.*, 185.

48 'Language to be looked at and/or things to be read', Dwan Gallery press release, June 1967, addendum by R.S., 2 June 1972, in *CW*, *op. cit.*, 61.

49 Cf. Uroskie, 'La Jetée en spirale. Robert Smithson's stratigraphic cinema', in *Grey Room*, No.19 (Spring 2005), 65.

50 'A sedimentation of the mind', in *CW, op. cit.*, 111.

51 *Aspen*, no.8, Fall–Winter 1970–71. An issue featuring the international Fluxus artists, ed. Dan Graham, designed by George Maciunas. Cf. *CW*, *op. cit.*, 75–77.

52 Cf. Shapiro, *op. cit.*, 161

53 Cf. Craig Owens, 'Earthwords', in *October*, 10 (Autumn 1979), 123.

54 See Peter Haff, 'Humans and technology in the Anthropocene: six rules', in *The Anthropocene Review* 1 (2014), issue 2, 1–11. See also Brad Allenby, 'The Anthropocene as media. Information systems and the creation of the human earth', in *American Behavioral Scientist* 52/1 (2008), 107–140.

55 Gilles A. Tiberghien, 'Robert Smithson and Aerial Art', *op. cit.*, 284.

56 As above, the terms of the 'Symbolic' and the 'Real' stem from Jacques Lacan's structural psychoanalysis, where the 'Symbolic' designates language as a structure of signifiers (as in Freud's analysis of dreams), and the 'Real' designates the 'impossible' in the sense of what cannot be symbolised (represented) by language (but possibly by analogue media or within the domain of 'real numbers' in mathematics).

57 'A sedimentation of the mind', in *CW, op. cit.*, 107. Derrida, 'Structure, sign, and play', *op. cit.*, 280.

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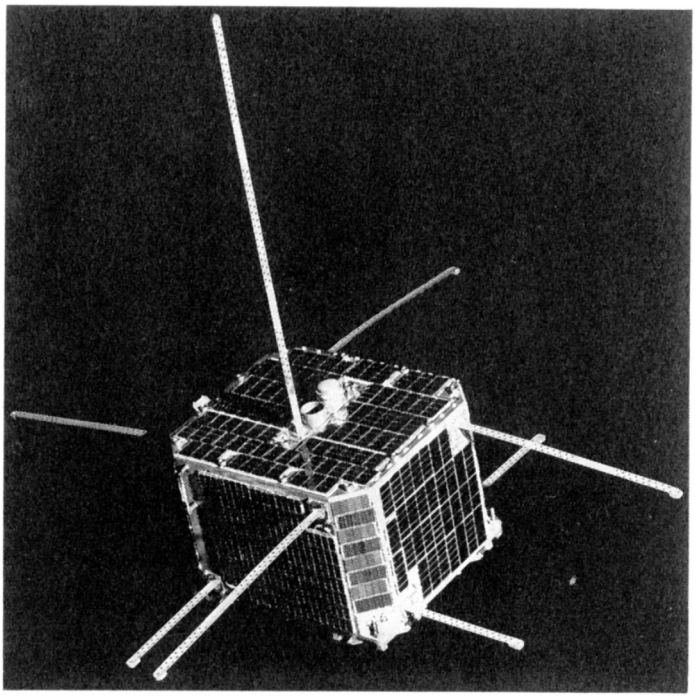
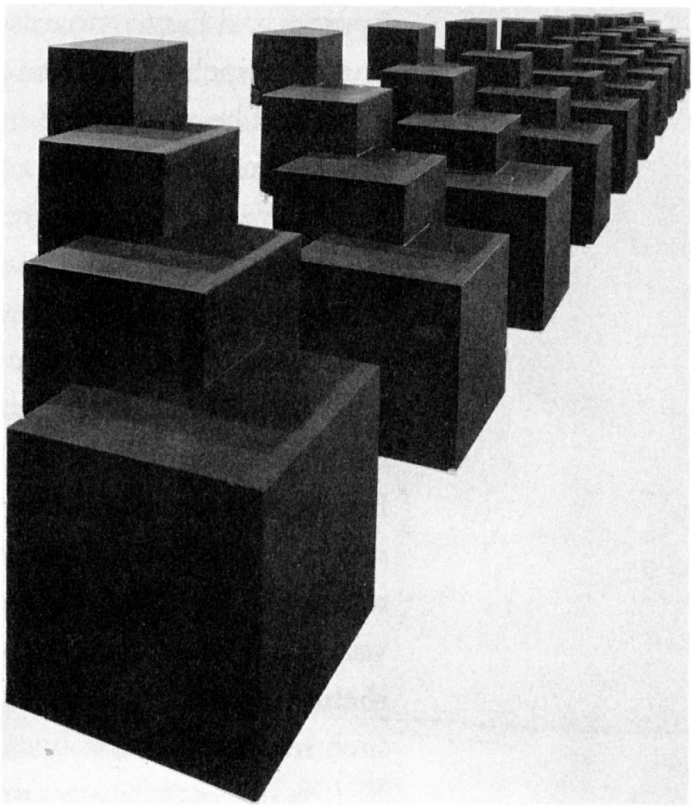


SECOR Surveying Satellite. (Cubic Corporation, San Diego, California.)



ROBERT SMITHSON, *Plunge*, 1966. Painted steel, 10 units, square surfaces, 14½ to 19″ (½ ″ increments).

From Robert Smithson, 'Towards the Development of an Air Terminal', *Artforum*, June 1967 (From: *Collected Writings*, p. 57). © Holt-Smithson Foundation ARS, NY and DACS, London 2022.

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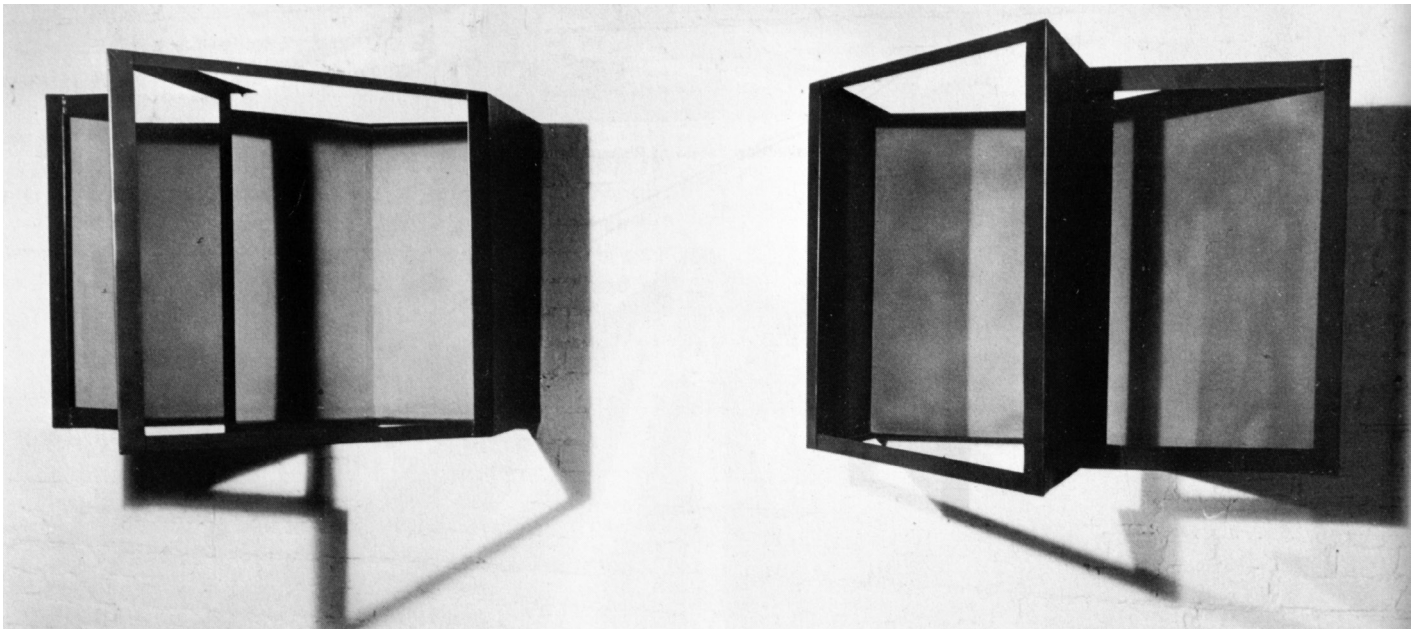

Robert Smithson, *Enantiomorphic Chambers*, 1965. Painted steel and mirrors, 61 x 76 x 79 cm. The Holt/Smithson Foundation. (From: Robert Hobbs, *Robert Smithson, Sculpture*, Ithaca: Cornell University Press, 1981, p. 60).

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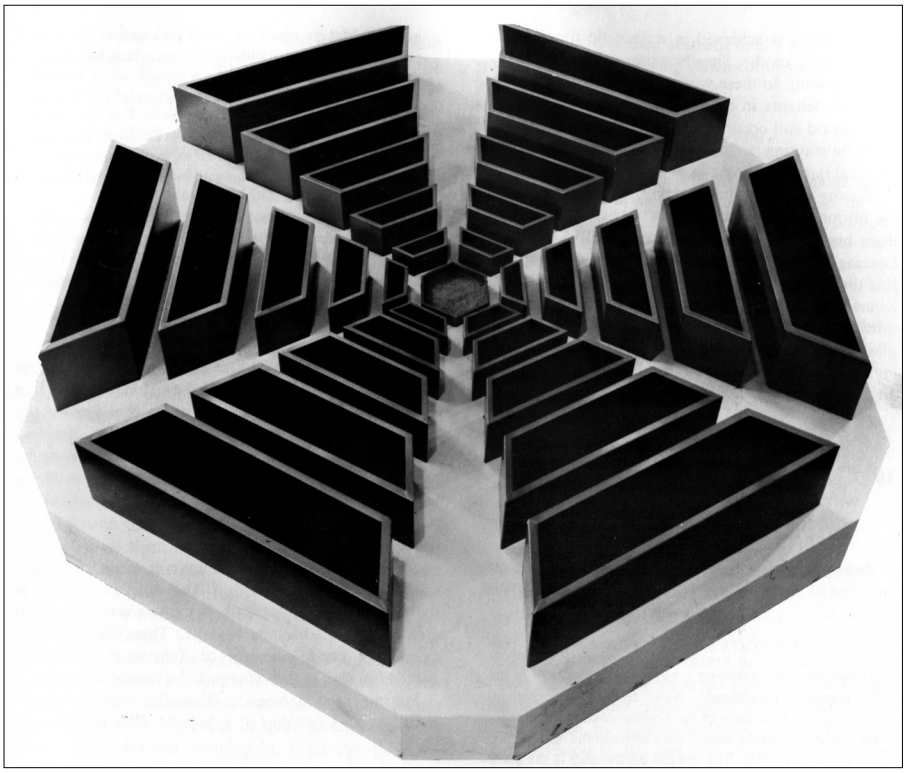

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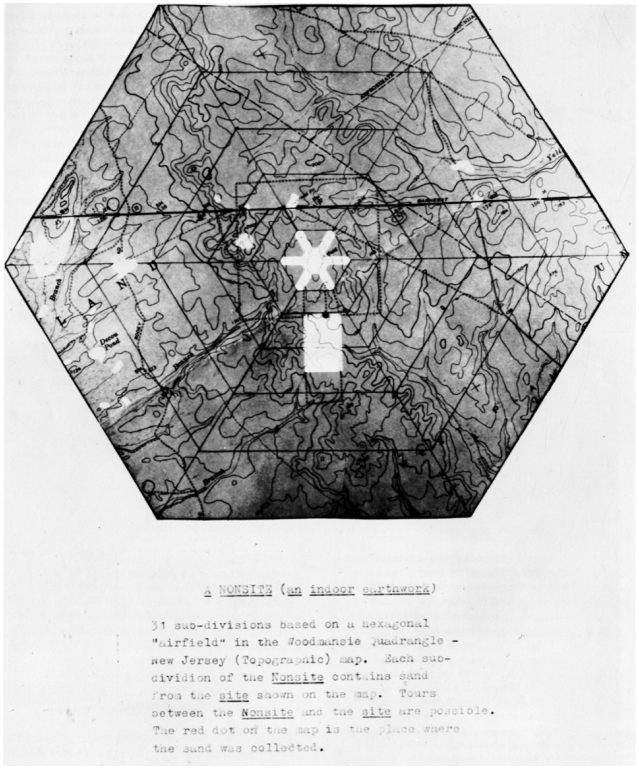
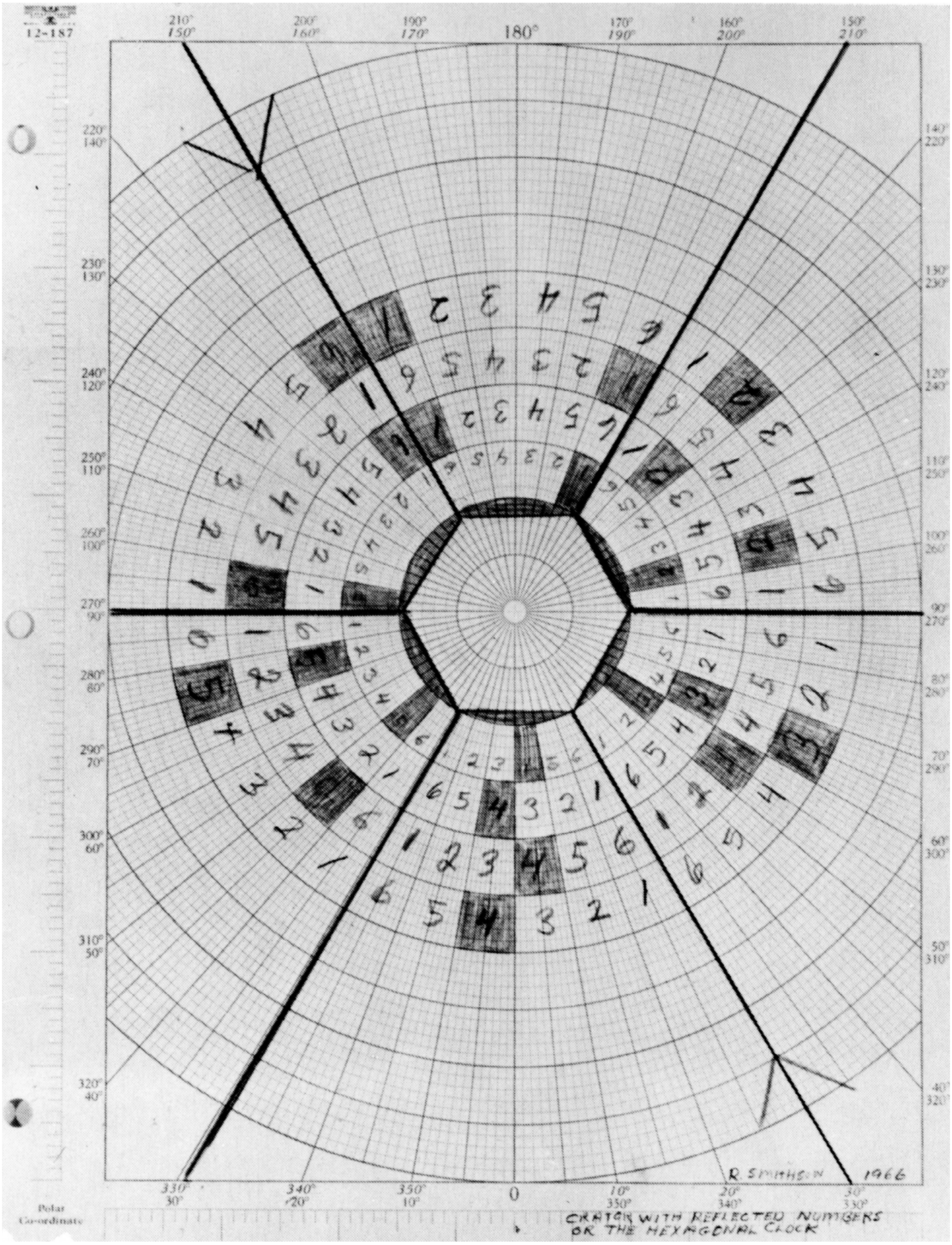


3a— Robert Smithson, *A Nonsite, Pine Barrens, New Jersey*, 1966. Painted aluminium, sand, painted wood, 30.48 x 166.37 x 166.37 cm. National Gallery of Art, Washington DC, Gift of Virginia Dwan, 2013. (From: Hobbs, *Robert Smithson, Sculpture*, p. 103). © Holt-Smithson Foundation ARS, NY and DACS, London 2022.
3b— Robert Smithson, *A Nonsite, Pine Barrens, New Jersey*, 1966. Photostat of map with typed text, 18.4 x 27.1 cm. National Gallery of Art, Washington DC, Gift of Virginia Dwan, 2013. (From: Hobbs, *Robert Smithson, Sculpture*, p. 102). © Holt-Smithson Foundation ARS, NY and DACS, London 2022.



Robert Smithson, *Crater with Reflected Numbers, or the Hexagonal Clock*, 1966. Pencil, crayon, ink on graph paper. Estate of Robert Smithson. (From: Hobbs, *Robert Smithson, Sculpture*, p. 96). © Holt-Smithson Foundation ARS, NY and DACS, London 2022.

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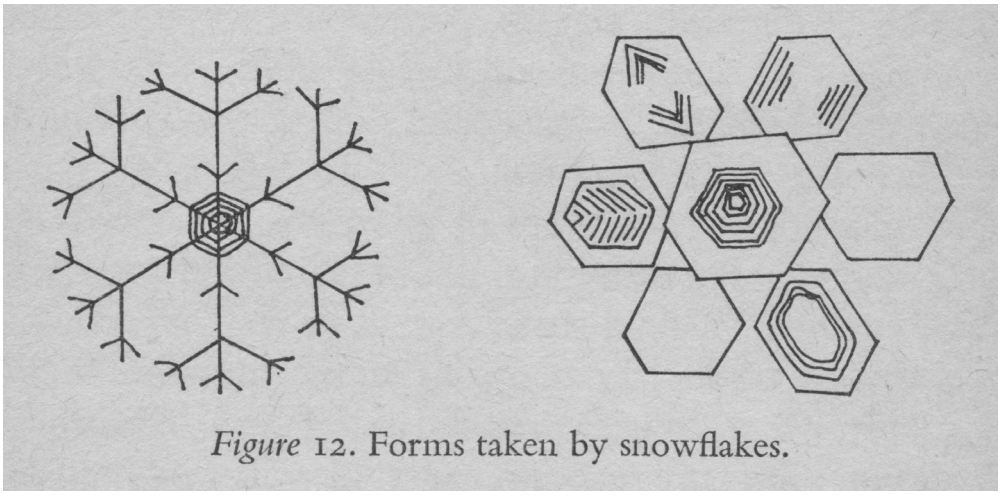

Figure 12. Forms taken by snowflakes.

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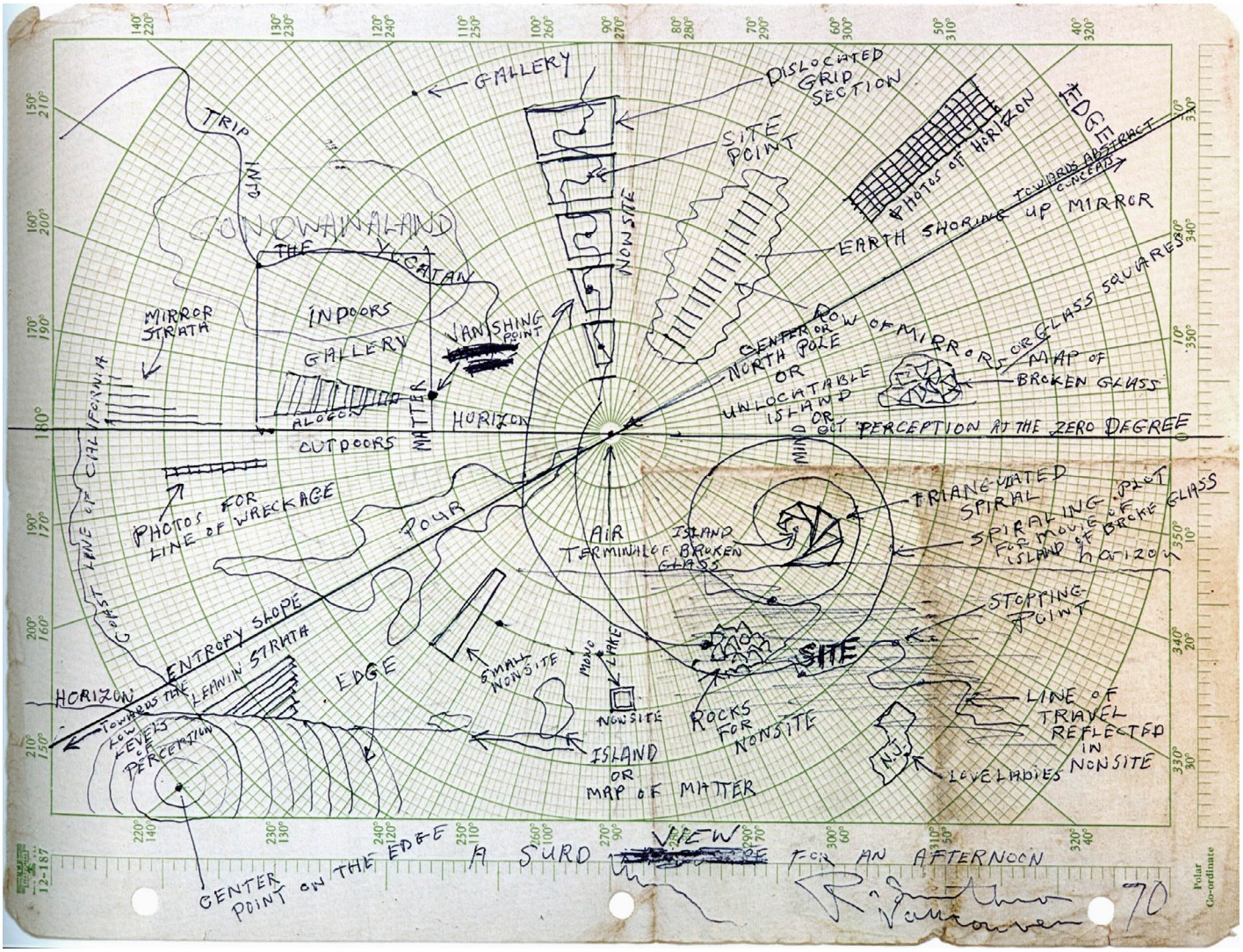

5— 'Forms taken by Snowflakes.' Leslie William Marrison, *Crystals, Diamonds and Transistors* (Harmondsworth, Middlesex, England: Penguin Books Ltd, 1966) p. 30.
6— Robert Smithson, *A Surd View For An Afternoon*, 1969 (signed 1970). Ink, 21.6 x 27.9 cm. Holt/Smithson Foundation. (From: Robert Smithson, *Spiral Jetty. True Fictions, False Realities*, ed. by Lynne Cooke and Karen Kelly, Berkeley, Los Angeles, London: University of California Press, 2005, p. 93). © Holt-Smithson Foundation ARS, NY and DACS, London 2022.

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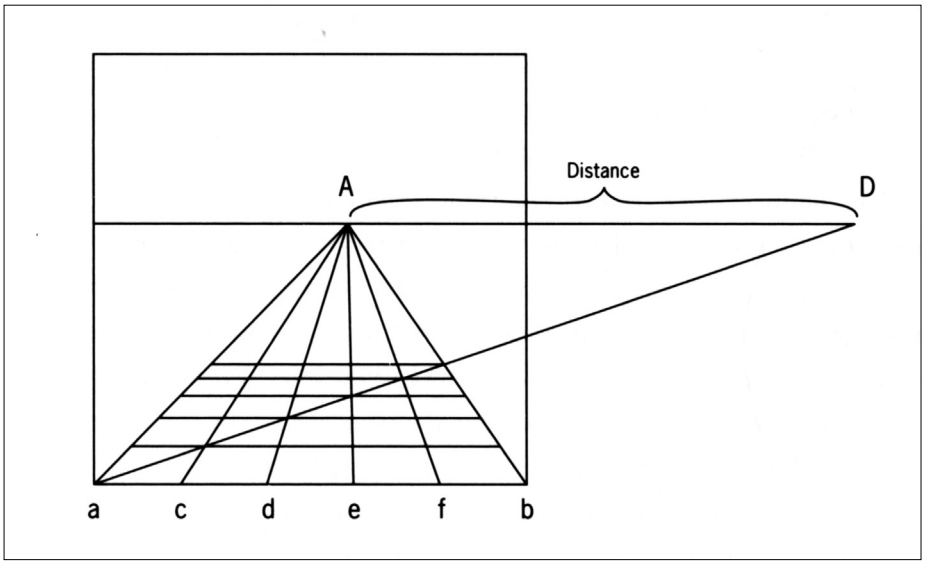

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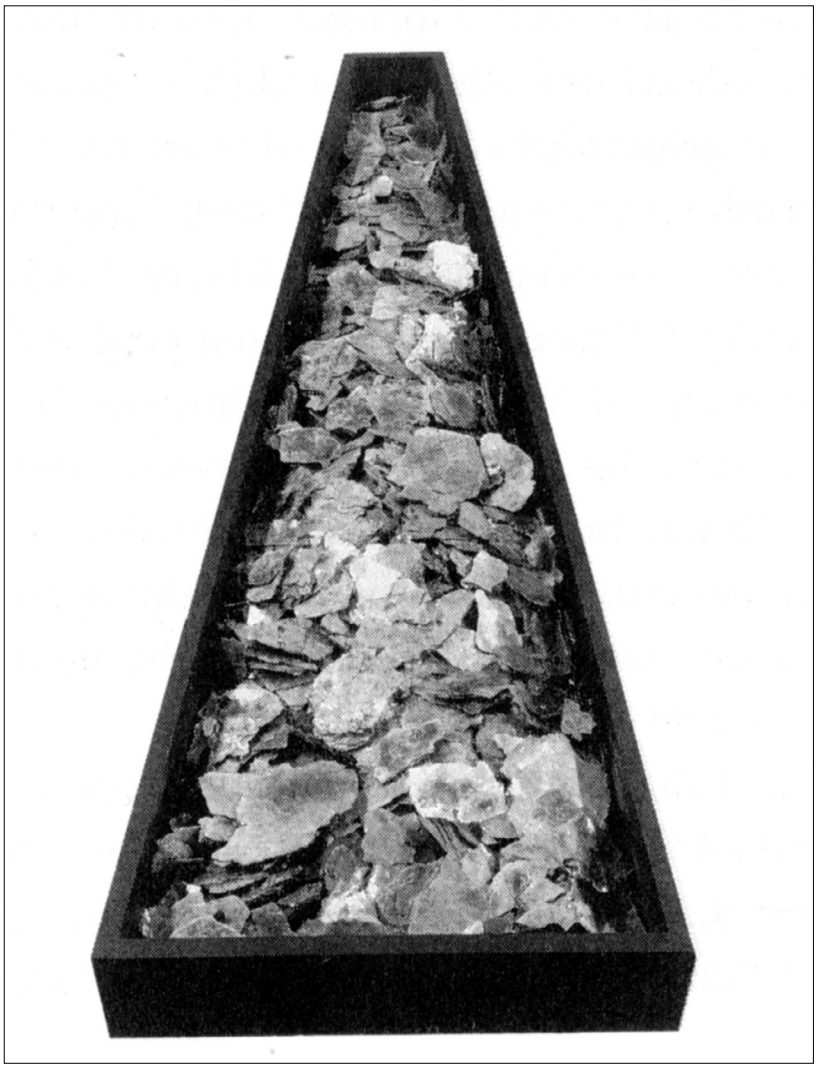

7— Alberti's principle of *costruzione leggitima* according to Erwin Panofsky. (From: Erwin Panofsky, *Perspective as Symbolic Form*, trans. by Christopher S. Wood, New York: Zone Books, 1991, p. 132).
8— Robert Smithson, *Non-Site*, 1968 (Mica from Portland, Conn.). (From: Collected Writings, p. 101). © Holt-Smithson Foundation ARS, NY and DACS, London 2022.

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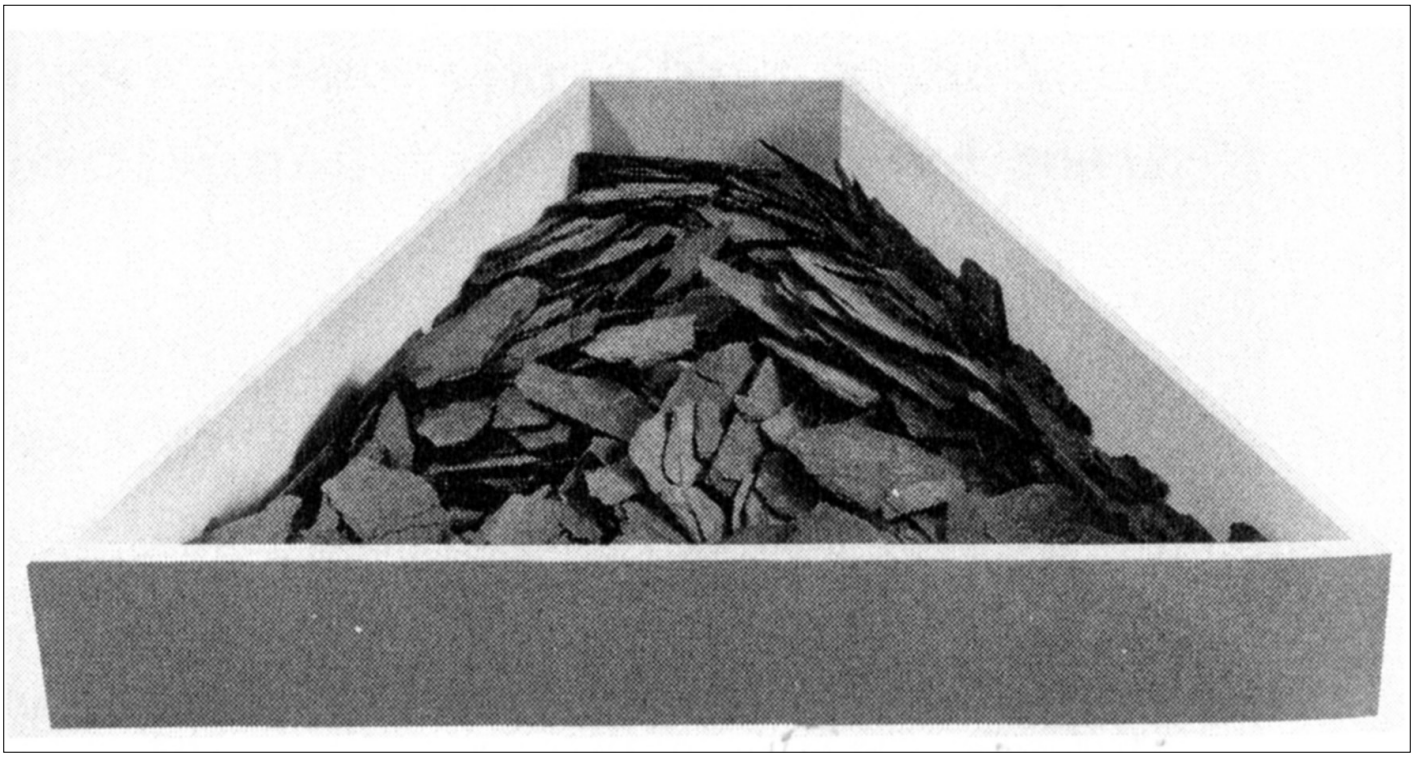
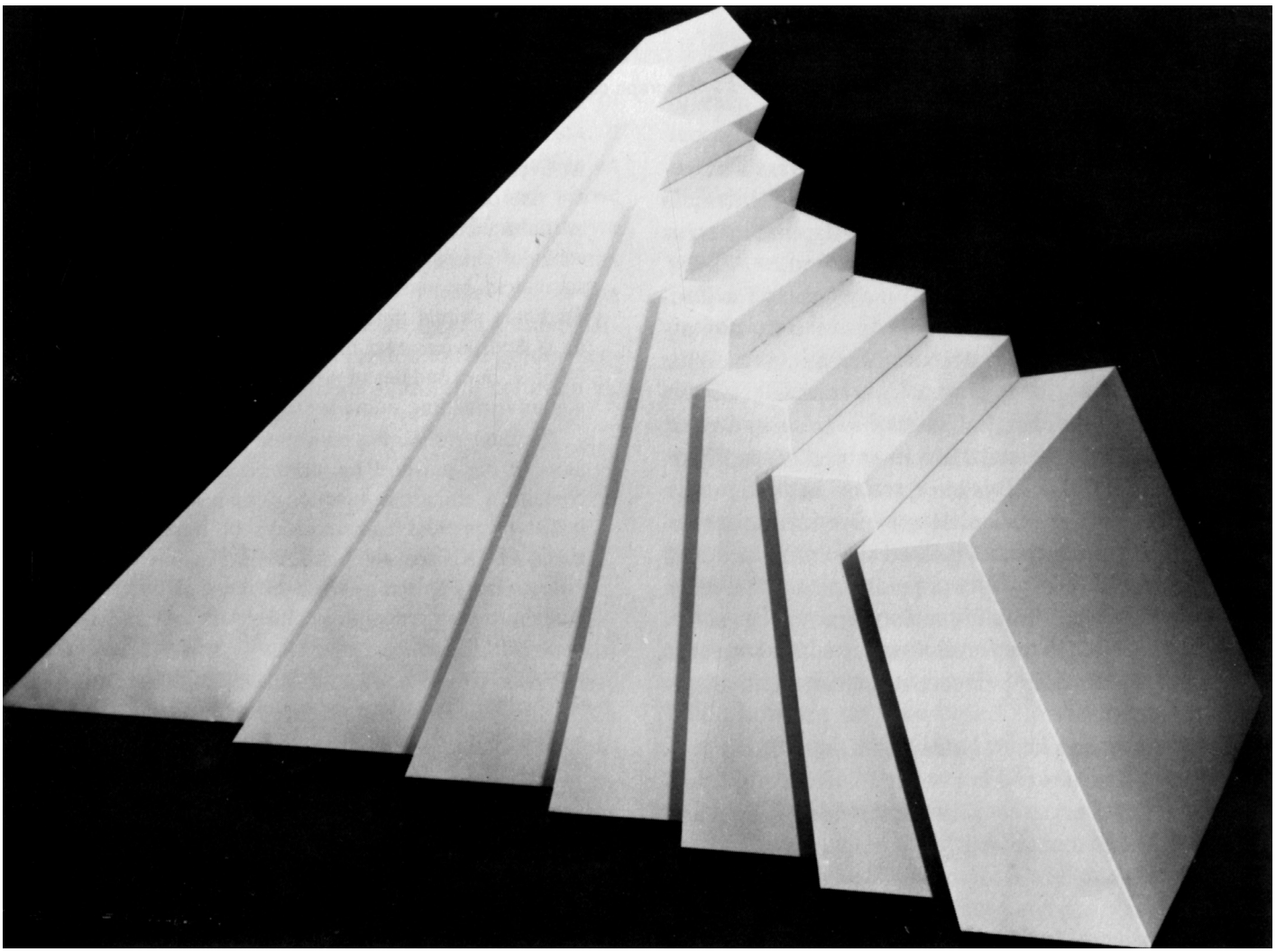
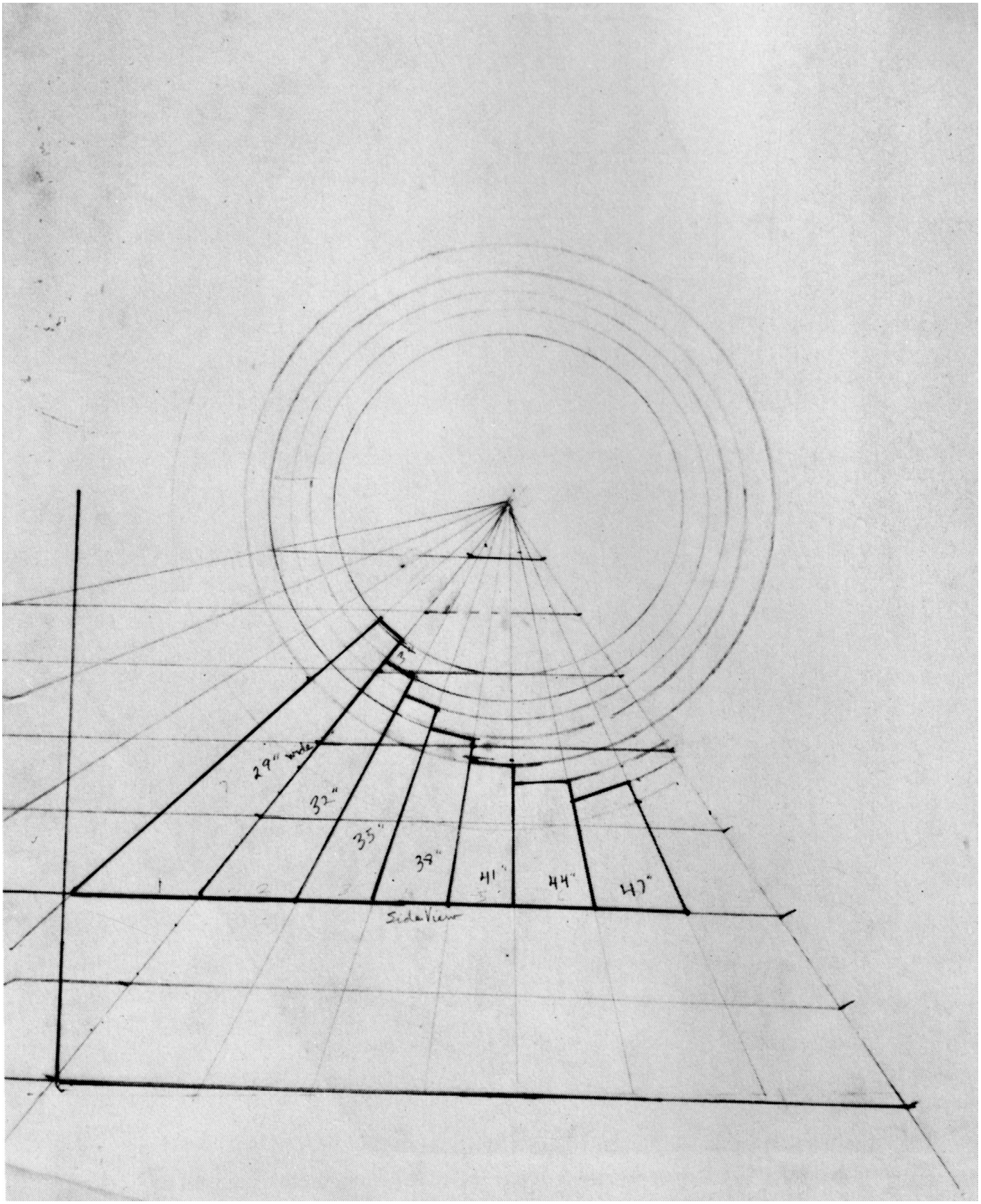


9— Francesco di Giorgio Martini (attr.), *Veduta architettonica ideale*, c. 1490/1500. Oil on poplar wood, 131 x 233 cm. Courtesy of Staatliche Museen zu Berlin, Gemäldegalerie / Jörg P. Anders.
10— Robert Smithson, *Non-Site*, 1968 (Slate from Bangor, Pa). (From: Collected Writings, p. 100). © Holt-Smithson Foundation ARS, NY and DACS, London 2022.



Robert Smithson, *Leaning Strata*. 1968. Painted aluminium, 124 x 266 x 67 cm. Walker Art Center, Minneapolis, Donation of Virginia Dwan, 1985. (From: Hobbs, *Robert Smithson, Sculpture*, p. 100). © Holt-Smithson Foundation ARS, NY and DACS, London 2022.



Robert Smithson, *Leaning Strata*, 1968. Pencil and ink. Estate of Robert Smithson. (From: Hobbs, *Robert Smithson, Sculpture*, p. 101). © Holt-Smithson Foundation ARS, NY and DACS, London 2022.