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The Imaginary Mountain

The Significance of Contour in Alvar Aalto's Sketches

Mark A. Hewitt

It is a paradox of modern architecture that, in an age dominated by rationalist theory, the sketch has become a legitimate means of expressing complete architectural concepts. The concept sketch, encapsulating many of the formal, theoretical and phenomenological aspects of a design in a single stroke, now occupies an important place in the canon of architectural representation. The sketch is fresher, more vivid, more personal than the mechanistically produced presentation drawing. In a sense, this seemingly informal and irrational drawing type can be proof of the clarity and objectivity of method which has been a hallmark of twentieth-century theory. And, as important, the sketch can express the romantic, avant-garde gesture of creative individualism that nearly all contemporary artists cultivate.

Study sketches were not always seen in this light. As Werner Oechslin has pointed out, sketches were historically considered to be personal, subjective explorations reserved for the architect in the privacy of his studio, not for public dissemination.[2] The earliest use of the study sketch dates from the *quattrocento*, when advances in papermaking made trial and error exploration possible for both painters and architects. It was not until the eighteenth century that architects developed the sketch as a drawing type in its own right. The baroque scenographic *cappricio* was one such form, brought to a high artistic level by such draftsmen as Filippo Juvarra. Travel sketches, recording the monuments of the grand tour, were the most significant eighteenth- and nineteenth-century instruments of the sketcher's art, sometimes shown in exhibitions. Great draftsmen such as Schinkel, Norman Shaw and C.R. Cockerell used the travel sketch as fodder for ideas, but never confused the freely conceived drawing with a fully formed architectural concept, which was always presented in precise renderings.

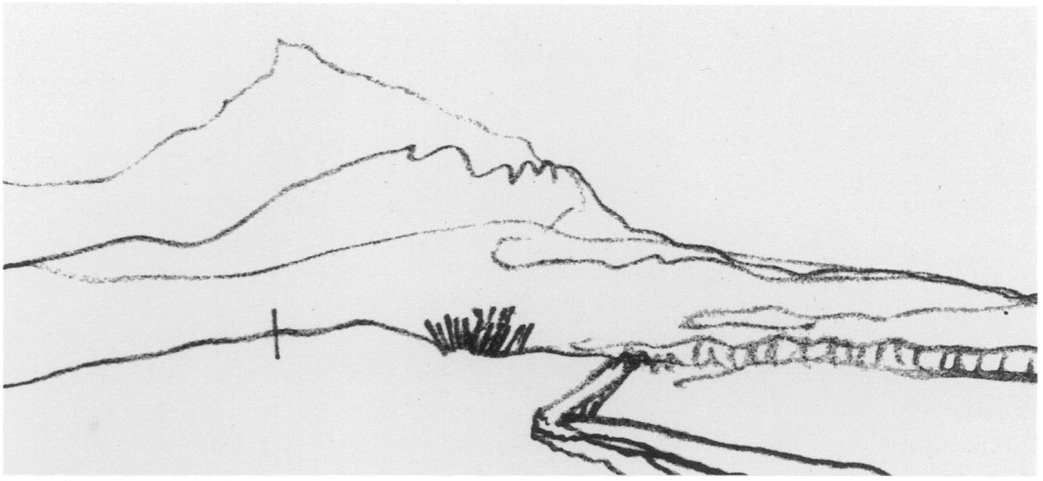
The first important use of the sketch as a codified instrument of design came through the French Beaux Arts system. The all important *esquisse*, an academic drawing more akin to a rough draft of the complete building, presented always in plan, section and elevation according to a conventionalized layout, was used in the *concours* process as a means of judging the quality of a *parti* or complete design concept. Yet this drawing was fundamentally different from the free, abstract "idea sketch" which emerged in the twentieth century as an icon of architectural expression.[3] With the advent of abstract, gestalt conceptualization fostered by the Bauhaus system, and the avant-garde linkage between abstract art and architecture, the idealized first sketch took on greater significance – somehow closer to the pure idea behind a design.

Architects make idea sketches in order to facilitate thinking. Especially in the earliest stages of design, when mental images and vague intuitions of a concept are all that inhabit the imagination, the sketch is the litmus test and first manifestation of an idea. A set of crude, incomplete and imperfectly formed drawings can aid in the crystallization of a formal concept. Because the interactive sequence of sketch representations records

1. Colin St. John Wilson, "Alvar Aalto and the State of Modernism," *International Architect* 1, no. 2 (1979): p. 30.

2. Werner Oechslin, "The Well-Tempered Sketch," *Daidalos* 5 (September 1982): pp. 99-112.

3. This valuation of the sketch is in part attributable to the close relationship between modern art and architecture achieved in European avant-garde circles. The fusion of painting, sculpture, architecture and applied arts in the Bauhaus *vorkurs* helped to legitimize the design techniques of the graphic artist for architects in the 1920s, and freed them from the representational constraints of academic drawing. Painters and architects were kindred spirits, as Ozenfant, Léger and Le Corbusier proved. Representational barriers and conventions were gradually broken down by such art movements as Constructivism, Futurism and De Stijl, so that the architect could invent his own modes of design and expression. The free sketch was only one of these new forms.



1 Landscape, Morocco, 1951

For the language of his architecture followed very closely the contours of the building programme he was following at the time. And it did this because of one very striking characteristic in the "structure" (abstractly speaking) of his creative attack. This can be epitomised by drawing two forms – an ideograph of two lines – one straight, the other serpentine; we can transform the lines into planes, and whether we view it as a plan or a section it will recall to us the archetypal Aalto space, in which the juxtaposition of a strictly flat plane with a rhythmically wavelike surface seems to charge the air of the space like the beating of a giant wing. But these two forms can also be imagined as the lines of an encephalogram – an imprint of the brain's processes, in the sense that there seems always to be in the "argument" of an Aalto building a complementareity between the rigorous plane of analysis and the turbulent wavelike surge of fantasy. Colin St. John Wilson [1]

a mental schema peculiar to each individual architect, a study of such drawings can help to unveil modes of conception and formal preoccupations. It is our purpose here to study the sketches of one architect in the hope of making such a discovery.

No modern architect is more closely associated with the freely composed *ideenskizze* than Alvar Aalto. A large part of the mystique of Finland's great master is bound up with his intuitive, expressionistic, wavy line sketches. It is impossible to think of his built projects without imagining those initial quivering, free-spirited, exploratory sketches. The amorphous forms of his later works are perfectly reflected in his drawing style. This essay will consider the significance of these drawings to Aalto's design method, with particular attention to the ways in which they are used to define form in mass and space. Through an analysis of his unique sketching method, several of his key formal innovations and preoccupations can be better understood, especially his attitude to the contouring of space in plan and section.

Alvar Aalto clearly believed that the act of sketching was fundamental to the creation of architectural form. With the publication of volume one of his *Complete Works* in 1963, his startling soft pencil "first sketches" appeared alongside formal presentation drawings and photographs of a given project. Here in print is the architect's official version of his creative process; the sketch is the key starting point of each design. Critics have been mystified by the seeming irrationality of these drawings. Werner Moser, writing in 1970, was spellbound, remarking that Aalto employed the soft line deliberately, "as if a more abruptly explicit procedure might hurt the basic idea which he is experiencing in his mind."[4] Malcolm Quantrill likewise found Aalto's design procedure more like "play"; he wrote, "his sketches are, in the true sense, explorations: they move towards solutions not at all in the conventional way but more in the free conceptual manner of the Baroque spatial tradition."[5] Other critics have pointed to the emotional qualities of the sketch as crucial to Aalto's view of design as an extension of the life force.[6] As Karl Flieg wrote after observing the atelier in 1968:

Personal contact with Aalto repeatedly shows how earnestly and with what awareness of his calling he attempts to grasp all the problems of life in our age and seeks to make them visible in some form. He has little time for formal architectural theories; to discover form literally and metaphorically is the task of every individual, and theories are of no help here; only life that is lived and observed can furnish guidelines.

Every project is elaborated by Aalto alone with countless sketches, ranging from purely conceptual drawings and designs to recognizable details. Then the chief architect responsible for the execution of the project interprets the material. In close collaboration with Aalto, he then works the sketches and the pictorial explanations into a presentable conceptual plan for the client and for the construction engineers.[7]

Here was testimony to the crucial importance of the sketch. In the post-war studio the project architect and draftsmen stood by to translate the master's murky doodles into finished buildings – often a rather challenging task. The architect thus abetted those interpreters who saw him as a child of nature, jettisoning in his later works the trappings of orthodox theory for a compositional process based upon speculation, exploration and formal discovery through freehand drawing.

Aalto's writings also support the notion that he was an intuitive designer who encouraged the subconscious to come forth while drawing. His now famous remarks on architecture and abstract art, first published in *Domus* in 1947, concerned the design of the Viipuri Library, in which "primitive" or "childlike sketches" of "fantastic mountain landscapes" and skies with "many suns" were used as metaphorical analogies for the building's *parti*.[8] He saw architectural form in line, figure, mass, color and texture, much as an abstract painter does, and deliberately connected his architectural ideas with those in his sporadic oil paintings, first extensively published in *Synopsis*. He spoke of sometimes forgetting "the maze of problems" in a complex program and drawing "in a manner rather like that of abstract art. Led only by my instincts I draw, not architectural synthesis, but sometimes even childish compositions, and via this route I eventually arrive at an abstract basis to the main concept, a kind

4. Werner M. Moser, "A Survey of the Work of Alvar Aalto," in *Alvar Aalto: Synopsis* (Basel: Birkhäuser Verlag, 1970), p. 184.

5. Malcolm Quantrill, *Alvar Aalto: A Critical Study* (London: 1983), p. 243.

6. See, for instance, Juhani Pallasmaa, "Towards a New Humanism: Aspects of Aalto's Architecture and Thinking," *Space Design* 1 and 2 (January and February 1977): pp. 10-12; and Carlo Ludovico Ragghianti, "Alvar Aalto's Creative Imagination," in *Alvar Aalto 1898-1976*, catalogue from the Finnish Museum of Architecture (1978): pp. 129-33.

7. Karl Flieg, "The Architect in his Workshop," in *Alvar Aalto 1963-70*, vol. 2 (Zurich: 1971), p. 9.

8. This apparent interview was republished by Göran Schildt in *Luonnoksia* in Finnish (Helsinki: Otava, 1972), and subsequently translated into Swedish as *Skisser* (Söderström & Co. Förlags Ab.) and into English as *Sketches: Alvar Aalto*, edited by Göran Schildt and translated by Stuart Wrede (Cambridge, Mass.: MIT Press, 1978) where it has been titled "The Trout and the Mountain Stream." The original article in *Domus* (nos. 223-225 (October - December 1947): pp. 3-15) bears the Italian title "Architettura e arte concreta." As might be expected, not only the title suffers from multiple translations and liberties taken with the text.

of universal substance with whose help the numerous quarreling sub-problems can be brought into harmony."[9] Viewed impressionistically, or as works of art, Aalto's sketches reinforce this apparently ironclad testament to the spontaneity of his design process.

The myth of Aalto's "irrationality" has excused some critics from probing his sophisticated thought processes. How, for instance, does one explain the fact that he used far more conventional representational techniques during his early years, and adopted a more objective drawing style for his International Style buildings in the late twenties? Did his mode of conception change from one phase of his career to the next?[10] Are his idea sketches merely free expressions of thought without a method, system or canon, or can a pattern of design be distinguished when considering his drawings over an extended period? On the basis of preliminary evidence from those drawings which have been released by the Aalto archives, it seems that a systematic, rational pattern is present in Aalto's design sketches. Aalto's supposed free approach to space and mass is in fact precise and sophisticated, and very much in line with his early training in both surveying and academic architectural design. For although he was perhaps uniquely aware of unconscious feelings for formal relationships, Aalto was also rigorously governed by a thought process that was architectural, not painterly.[11] Only via such a conceptual mode could he have produced the complex and ingeniously heteromorphic buildings of his later years.

The keys to understanding Aalto's approach to design are three, and they closely follow a methodology which I have outlined in an earlier essay on architectural drawing. First, the designer's habits of mind over an entire career must be analyzed; in Aalto's case this requires a comparison of drawing types during the various phases of his career. Second, the characteristics of the architect's drawings – media, type and mode – must be examined. While superficially different, Aalto's drawings demonstrate an invariance in several important facets. Thirdly, Aalto's attitudes toward the reciprocity of plan, section and massing may be studied using the idea sketch as a key to the ways in which forms were conceived and represented.

9. Schildt and Wrede, *Sketches*, p. 97.

10. My use of this term stems from an earlier essay of my own, "Representational Forms and Modes of Conception: An Approach to the History of Architectural Drawing," *Journal of Architectural Education* 39, no. 2 (Winter 1985): pp. 2-9.

11. According to Göran Schildt, painting played a vital role in Aalto's attitude toward design throughout his career. He gave up thoughts of becoming an artist early on, but used sculpture and painting actively as a means of exploring architectural ideas. "Aalto expressly stated that, unlike Le Corbusier, he had no independent ambitions as a painter." He painted because "it allowed him to develop his architectural sensibility in the same way as wood sculptures provided him with the experience of material." Schildt, *Alvar Aalto: The Early Years* (New York: Rizzoli, 1984), p. 157.

Aalto's academic training in architecture at the Helsinki Institute of Technology was a rigorous, Beaux-Arts-influenced curriculum in which drawing was emphasized.[12] Though little is known of the years Aalto spent as an architectural student (1916-21), his design habits were formed around conventional techniques of academic representation: the *esquisse/rendu* method, wash rendering, and the use of simultaneous plan/section/elevation modes on a single sheet. In the academic atelier system, the student is taught to understand architectural form holistically, by analyzing a building along the cardinal axes and drawing it orthogonally. By placing the plan, section and elevation on a single sheet in both the *esquisse* and the rendered design, the student is forced to conceive not only three-dimensionally, but pay particular attention to the relationships between plan and section. Aalto never forgot the lessons of the academic classical method, though he rejected its ideology in the 1920s.

Another strong influence on Aalto's drawing technique was the representational style of the National Romantic School, which reached its apex during his school years. Here he learned the conventions and preoccupations of picturesque composition in perspective. He was also attracted to soft media: charcoal and pencil. Eliel Saarinen's soft sketching pencil renderings can hardly have failed to influence the young Aalto.[13] There are striking similarities between the pencil line drawings of the two masters, though Aalto never became enamored of pencil renderings per se. The pencil or charcoal could suggest the textures of materials, flora and the influence of the hand more evocatively than any other medium, and was well suited to the romantic Arts and Crafts ideal. This feeling for texture and light can be seen in Aalto's 1926 sketch for the church at Muurame. (2) In his earliest years as a student, Aalto was drilled in the methods of an academic architect, while also witnessing the high point of National Romanticism. The lessons learned then cannot have dissipated as he developed his working techniques as a mature designer.

The pre-1925 drawings of Aalto's romantic classical buildings which have recently come to light bear this out. His presentation drawings (in ink or pencil line) and sketches depend on conventional orthogonal views which convey classical frontality. The only suggestions of Aalto's later free style occur in his use of perspective modes, such as in the *esquisse* for the 1924 Palais des Nations competition; here the plans run down the center of the sheet in Beaux Arts fashion, while picturesque views of the massing are studied on the sides of the page. (3) It is important to note that even in his early work the architect tended to resist heavy shade and shadow rendering in favor of line drawings, primarily in pencil.

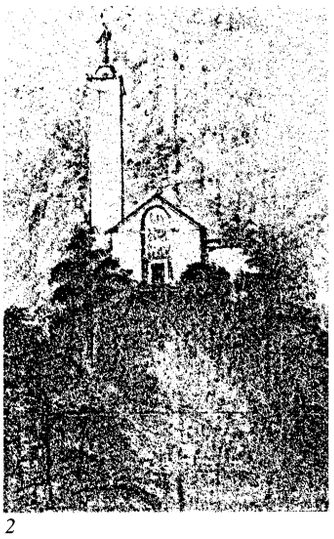
Aalto's other acknowledged early influence, Gunnar Asplund, contributed in two essential ways to the younger architect's attitude toward design. First, Asplund's almost Freudian use of the primitive, childlike, and subconscious realm in his work imparted itself to his protégé; this is the root of Aalto's professed reliance on the emotional realm in his later works, his naive freedom of formal speculation.[14] Equally important to the younger architect, Asplund was almost compulsively speculative in his design method, making sketch after sketch, revision after revision in each project, to arrive finally at a complex design.[15]

12. Schildt, *The Early Years*, pp. 172-82.

13. Frederick Gutheim, *Alvar Aalto* (New York: George Braziller, 1960), p. 10.

14. This has been demonstrated by Stuart Wrede in *The Architecture of Gunnar Asplund* (Cambridge, Mass.: MIT Press, 1980), p. 94.

15. Wrede, *Gunnar Asplund*, p. 221.



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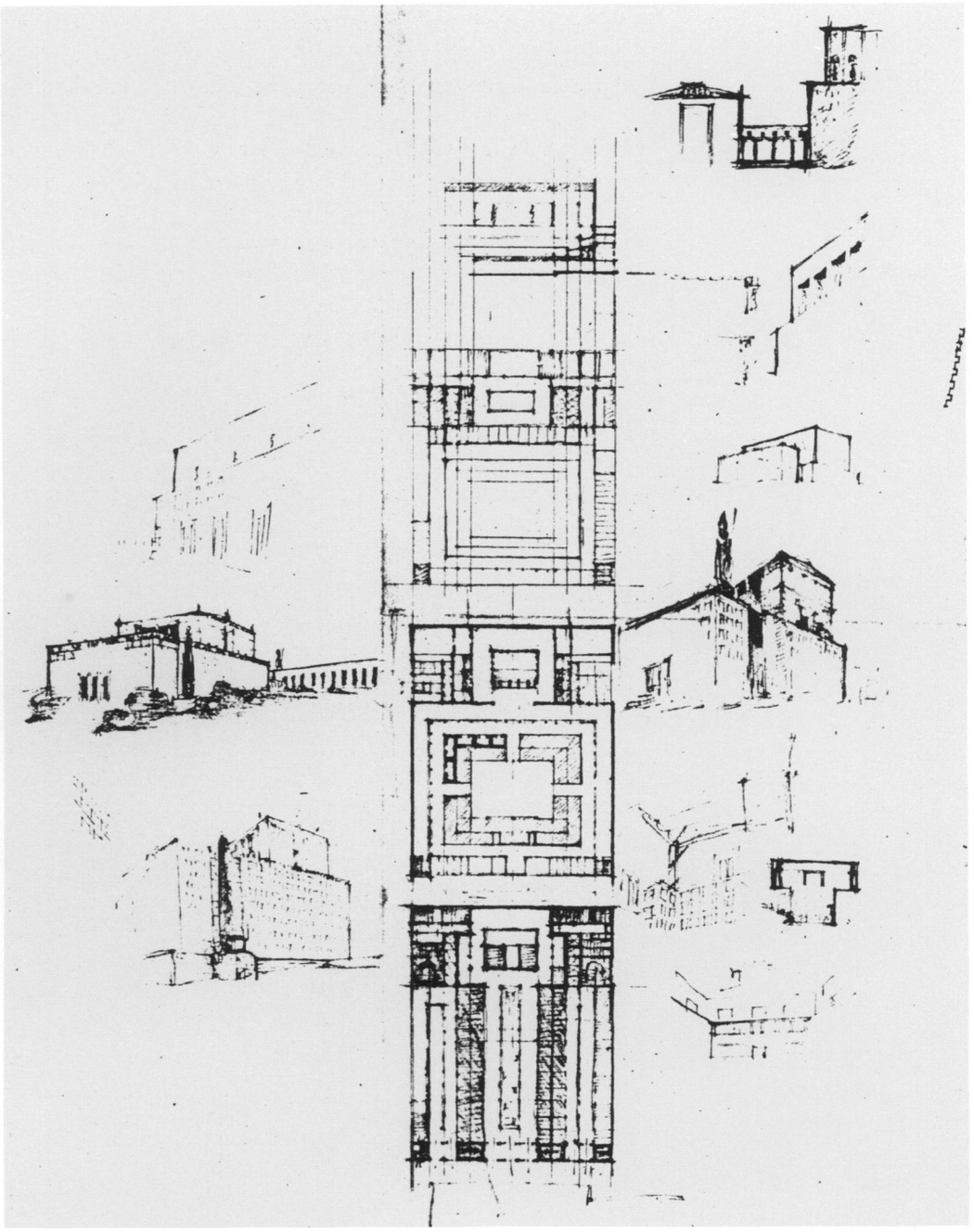

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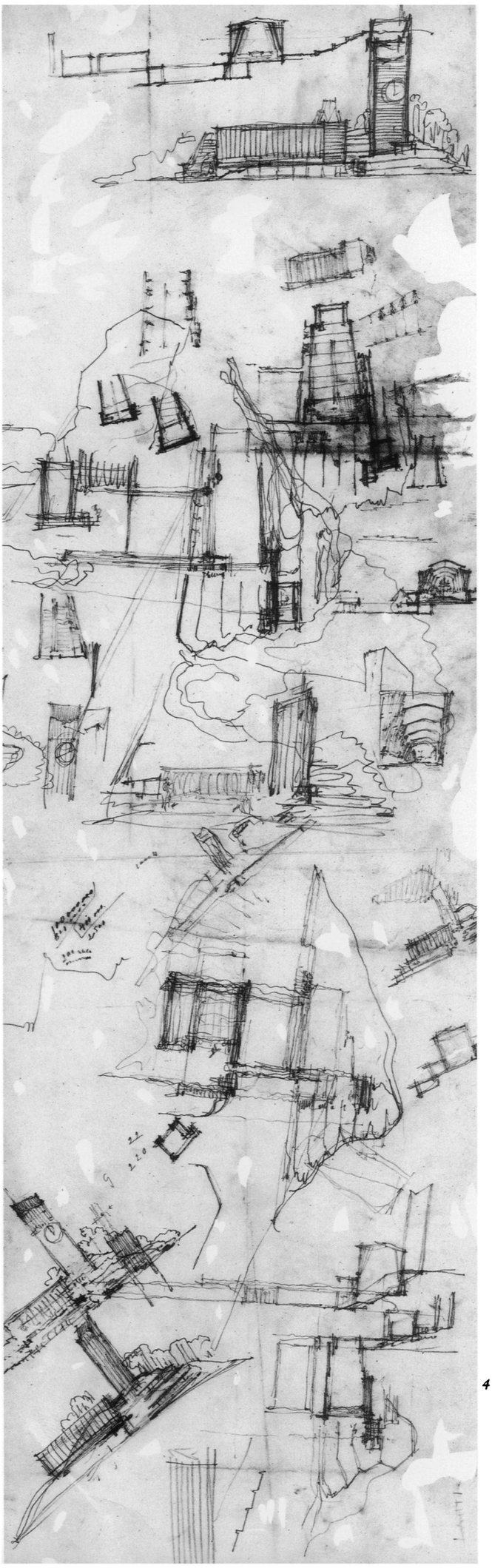
Though Aalto attributed his use of the sketch to his childhood experiences under his father's "white table," he must have assimilated Asplund's sketching penchant and used it in conjunction with more formal design methods learned in school.

Aalto's drawings themselves give us ample evidence of a consistent approach to design through medium and mode of representation. During the years following the end of World War II, Aalto's atelier was re-established and his working method and drawing style coalesced to a point at which neither Romantic Classicism nor the International Style exerted undue influence. Aalto's draftsmen continued to use precise, pencil line drawings in their presentations, drawings in which architectural elements are accurately delineated without overly abstracting or conceptualizing forms. Textures and materials are indicated without extensive rendering. In fact, when shadows are cast in hatching, they are almost as schematic notations, not realistic suggestions of shade and shadow. The modes of representation are conventional orthogonal drawings: elevations, sections, plans, site plans, with an occasional perspective or axonometric. Monochromatic wood or paper models of preliminary and final designs capped the presentation process. The architect clearly valued precision in his presentation drawings, a precision which only line could impart.

Paradoxically, Aalto's sketches from this period are among the earliest to display his loose, quivering line style. Although the apparent spontaneity of the line is suggestive of a purely speculative method, most of the published sketches follow a predictable problem-solving system based upon academic training. His apparently indecipherable concept sketch of the church at Lahti is in fact extraordinary multiple representations informed by the *esquisse* technique: a tiny plan or plans at the center surrounded by projections into section, elevation or perspective. (4) The use of a soft pencil or charcoal crayon is deliberate and important, for Aalto's sensitivity to line weight and his ability to build up forms out of many traces allow him to explore difficult and complex formal patterns with a precision unavailable to lesser draftsmen.



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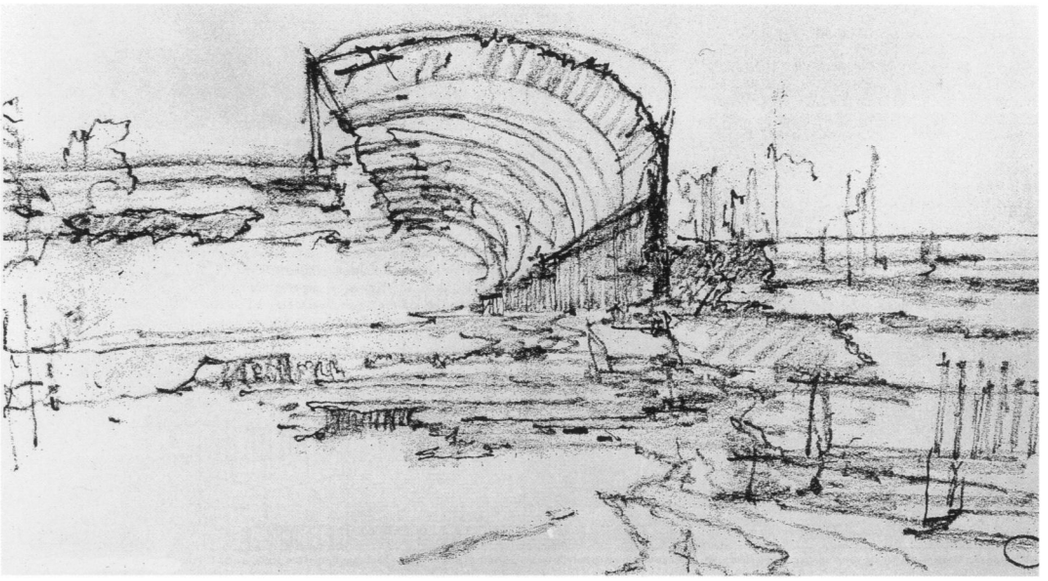

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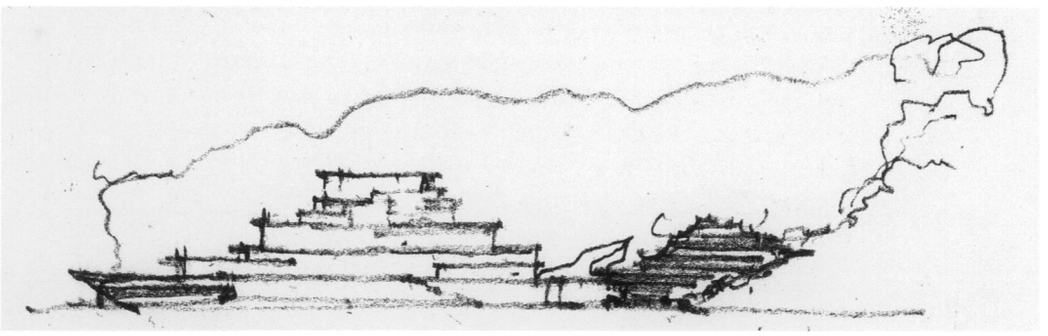

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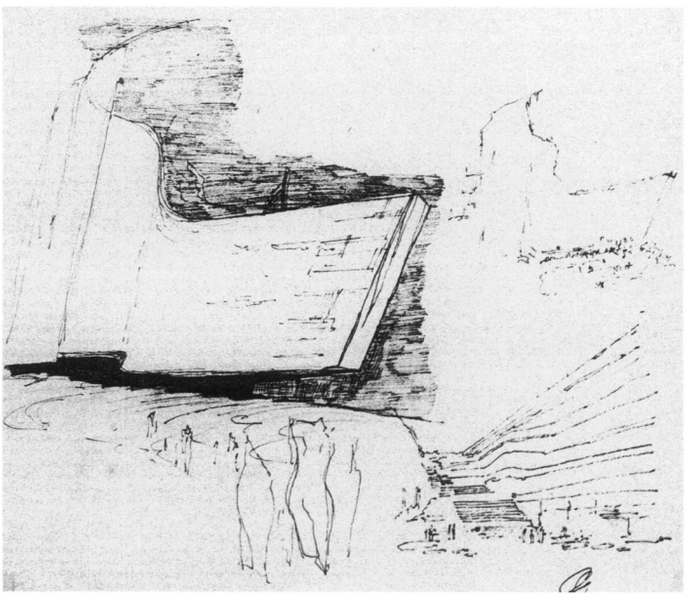
His formal ideas could be expressed with a subtle directness through the emerging lines themselves, tracing plan shapes, masses, and contours of land and building form. These sketches are very small, but have a scalar accuracy which is almost uncanny. Aalto was by this time an architect of twenty-five years experience, and his eye-hand perception was superb. Miniatur-ization allows a complete depiction of all aspects of the design on a single sheet, rolled out continuously like a Chinese scroll.



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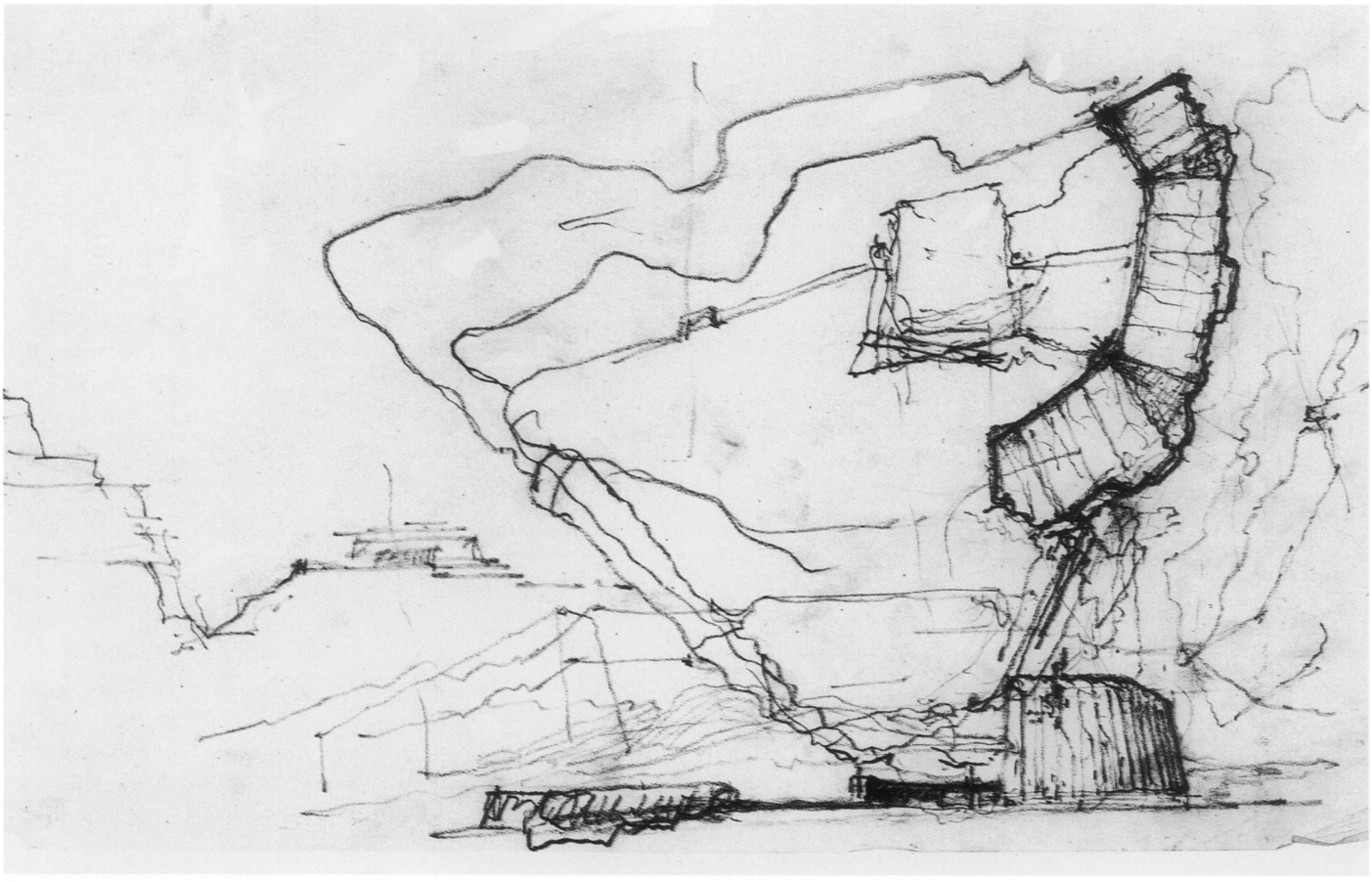
Aalto's sketches also demonstrate a willingness to find the representational mode suitable to each problem after the basic ideas were worked out. The great curved amphitheatrical form of the Otaniemi Technical Institute lecture hall, studied in multiple sketches, finally found expression in a bird's-eye perspective. (5) At the Aalborg Art Museum (6) and the unexecuted museum for Shiraz, Iran, an echeloned elevation sketch was used to depict relationships between building mass and landscape. One of Aalto's most evocative, naturalistic sketches is the 1959 interior perspective of the undulating balcony form of the Essen Opera House (7),

influenced by his earlier project for the 1939 New York World's Fair Finnish exhibition. The organic and geological metaphors in his work are rendered tangible in this brilliant drawing.

The pattern which emerges from an examination of a number of the sketches from the post-war atelier is one of a consistent conceptual process, through a predictable series of modes of representation: plans, sections and perspective views followed by details and tracings of drafted drawings to refine the design. What is significant is the way in which Aalto's line work builds a figure out of the page. Mature and self-confident draftsmanship coupled with the use of a soft drawing instrument allows him to literally search for answers through line, to make an intuitive search guided and prodded by the informed disposition and superposition of lead upon paper. It is not only his extraordinary control of the quality (thickness, gradation, opacity, etc.) and the composition of linework that clearly sets him apart from any other twentieth-century architect; it is also the way Aalto's personal drawing technique used line to define space and mass. His was fascinated by lines – as expressions of movement, as grids, as sinuous waves, as manifestations of natural forces, as laminations in wood furniture, as growth rings in trees, as striations of brick, tile, wood, even the bundled flutes of columns.

Painters and architects trained in the classical tradition recognize the role of contour in defining form. They are taught to understand figural relationships first through line and then through skiography or shade and shadow. Linear values depict the precise, geometric armature and overall mass of any object; lines are used to define planes (in this way the mathematician and the artist use the same conceptual schema). For Aalto, free form or geometric lines were the direct



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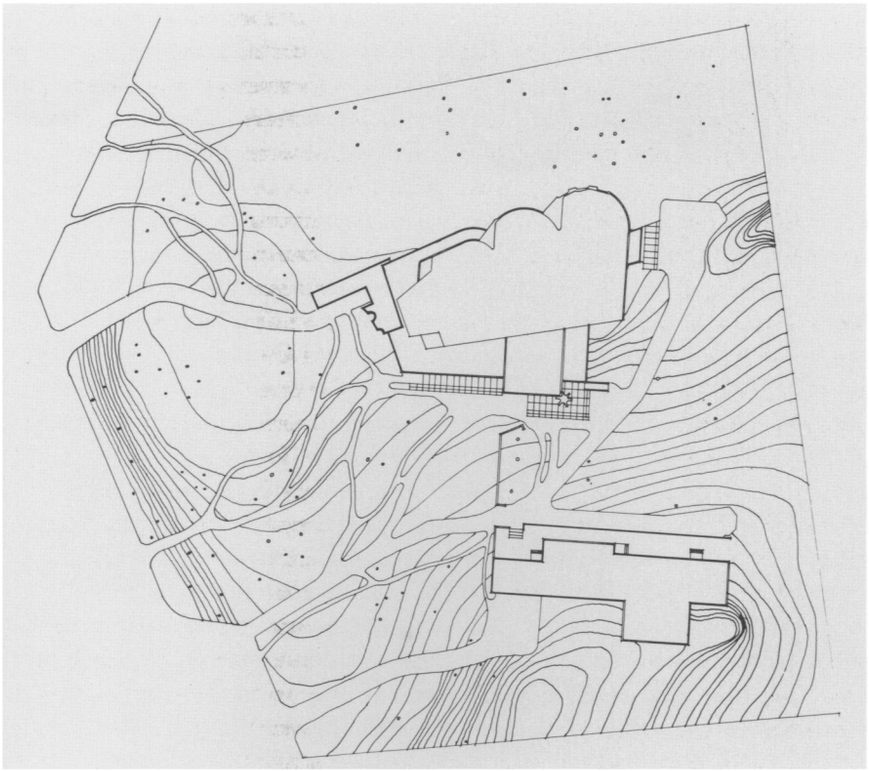

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notations of space-defining planes; the plan or section line of two dimensions on the page is, in reality, a three-dimensional plane. Searching for the right form meant exploring the relationship between the controlling contours of plan, section and elevation to achieve a visual and sculptural balance. Space and mass were in effect, interchangeable, in opposition yet also analogous.

The relationship between interior volume and exterior mass, manifested in outlines, is the fundamental plan/section dichotomy which all beginning architects learn to control and explore through drawing. Aalto's understanding of this relationship was particularly acute, as the complex volumetric and massing configurations of his buildings confirm. The contour line is the controlling force both in his buildings and his drawing technique. But contour holds for Aalto another significance which was associated with neither graphic art nor architecture.

As Göran Schildt has pointed out, Aalto was profoundly influenced as a boy by his father's surveying practice; he loved maps. The cartographer's use of the contour line to delineate both land masses and topographical features expresses itself forcefully in Aalto's buildings and site plans. As Schildt writes:

I would like to remind the reader of the "white table" under which he had played as a little boy, while his father and his assistants sat around the table-top, busy drawing maps. To be allowed to climb up onto some unoccupied chair and "draw with the others" in his own way was just as great a mark of distinction for the child as being allowed to accompany father out into the countryside was for the teenager. The surveyor's attitude to nature is flexible and dialogic of necessity; all that he does has to be adapted to the terrain, the landscape and previous building. [16]

It is striking when looking at Aalto's sketches how much the mapmaker's contour line asserts itself, and how the architect seems to build up forms as if he were marking the stepping contours of a mountain or hillside at conventional vertical intervals. [17] At times he seems to cut away the building form as if moving earth, or to build up organic masses out of rock-like planes. Yet he does so, not as a sculptor modeling clay, but analytically, like a surveyor describing a complex land form. A powerful example of this is the concept sketch for the town hall at Kiruna (ca. 1958), in which the cupped shape of the building plan seems to grow organically out of the wavy, concentric rings of landform and tree lines, eventually to appear at the bottom of the sheet in elevation. (8) In the site plans of the Säynätsalo town hall and Imatra church (9), and the almost archetypal figure/ground plan of the Muuratsalo summer house, the counterpoint between topographic contour lines and plan outlines achieves a poetry that is at the heart of Aalto's attitude toward building and landscape. This almost improvised reflexivity could only have been acquired by a cartographer's son. The buildings often appear quite literally to be the "imaginary mountains" which Aalto spoke of in his essay on the Viipuri Library.

The mountain metaphor not only forms the direct analogy for many of Aalto's building/landscape images, it also allows us to understand something of his complex handling of the critical relationship between interior and exterior. A section, like a plan, is formed by two related (inner and outer) contours, which conceptually slice the building apart along an axis, revealing planes (floor, ceiling, roof) of different registers.

16. Schildt, *The Early Years*, pp. 200-201.

17. I should like to thank one of my students, Ernest Maldonado, who pointed out this, among other things, in a fine paper on Aalto's drawings.

Aalto, the linear artist and the cartographer of form, explored space and mass with a rare perspicacity through his sketches, nearly always playing games with the dichotomy between plan and section. By drawing the plan and the section of a project in the earliest stages of conception, in miniature "idea sketch" format, Aalto represented complex ideas and spatial forms speculatively. The contour line motif appears in any number of forms and at various scales; it is a powerful means of representing forms that drawing alone possesses.

In his mature buildings, Aalto explored three primary juxtapositions between plan, section and massing contour. He worked somewhat in the vein of a composer using the interplay of rhythm and melodic line, or the multiple-part writing of counterpoint itself. He composed a building at various levels of inquiry beyond the plan/section dichotomy by setting interior spatial contours against exterior massing, massing against landscape contours, building grids against urban grids. His dependence on line in sketching allowed him to conceive in this way. It is appropriate to describe his three design strategies in terms that have musical as well as visual analogies:

Reflexive: This relationship between plan form and section form is the simple, direct translation of the contours of one to the other, with variations. As in a complex land form, the morphological contour of any cut along the horizontal plane approximates any cut along the vertical plane.

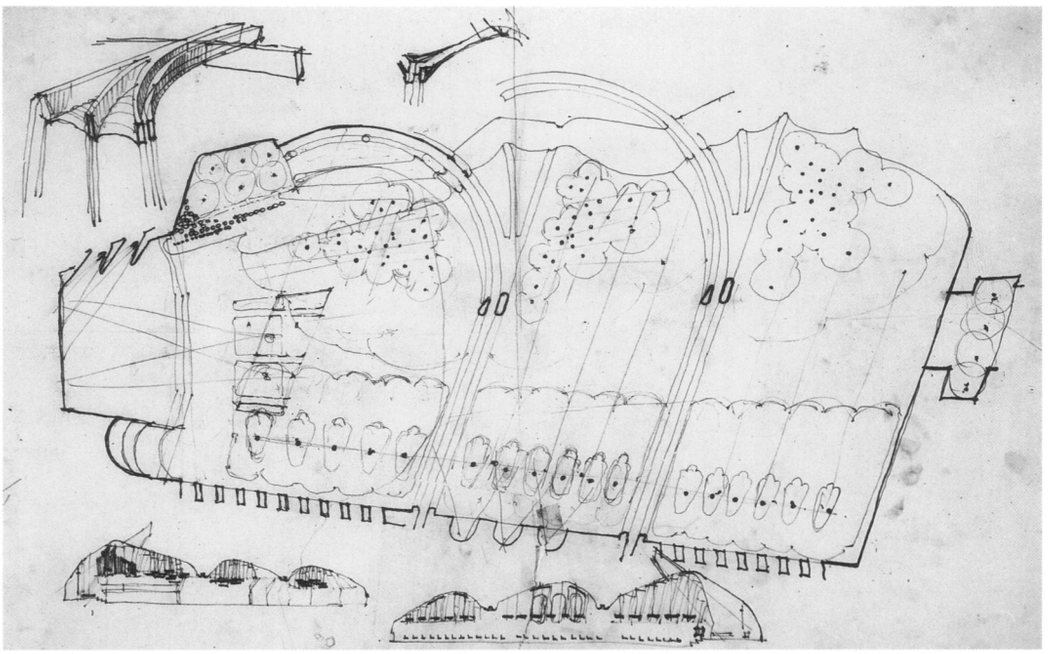
Contrapuntal: Here, deliberately contrasting interplay between plan and section is employed. Plan and section are given autonomy. This is the most difficult and dialectical strategy of spatial and massing design, and was used only sporadically by Aalto to brilliant effect. In topographical terms, the mathematical description of horizontally cut contours and vertically cut contours would be fundamentally different: a straight line against a wave, for instance.

Figure/field: This strategy sets up a bounded domain, often delineated by a common grid or orthogonal geometry, in which a single form or set of forms is positioned, not simply as a "composition" in the gestalt sense but as a unified architectural figure.

In order to illustrate these three concepts, let us examine the sketches and final designs for three seminal projects: the church at Imatra, the Maison Louis Carré near Bazoches, France, and the Finlandia Concert Hall. We will find that they are in fact manifestations of the very same thing, a mental schema which treated mass and space as reciprocal.

The most renowned of Aalto's projects to be guided by the reflexive approach is the beautiful white church at Vuoksenniska, Imatra (1956-59). Here Aalto began with a strong idea of a tripartite nave, modeled spatially around an undulating plan, and a reflexive section which emanates from a fixed point, the altar. This idea was a development of the acoustically informed section diagrams for the Viipuri Library lecture hall and the Helsinki Kulttuuritalo, where interior space and exterior massing are sharply differentiated. At Imatra, the dialogue between interior and exterior is even more intense as Aalto opens the space between the walls to allow light to refract within.

The extensive sketches for this building illustrate the many ways in which Aalto used lines to give definition to the formal and pragmatic aspects of a problem, so that each wall, space and geometric configuration could be appreciated both for its abstract qualities and its responsiveness to some requirement of the program. An early *esquisse* shows that the architect conceived the site organization from the start as a rectangular forecourt with the bell tower at its center, which would act as a foil for the three rounded volumes of the nave fanning outward from it. (11) Around the small plans on this sheet are drawn a schematic section revealing the close relationship to the plan volumes, and an elevation showing the slanting form of the roof (eventually in the opposite direction) juxtaposed with the vertical bell tower. Again, we see the architect employing a tightly controlled, *esquisse*-like technique to establish the basic ideas. Later section sketches refine the acoustic and lighting design of the interior, and explore the space between the inner and outer walls. (10)



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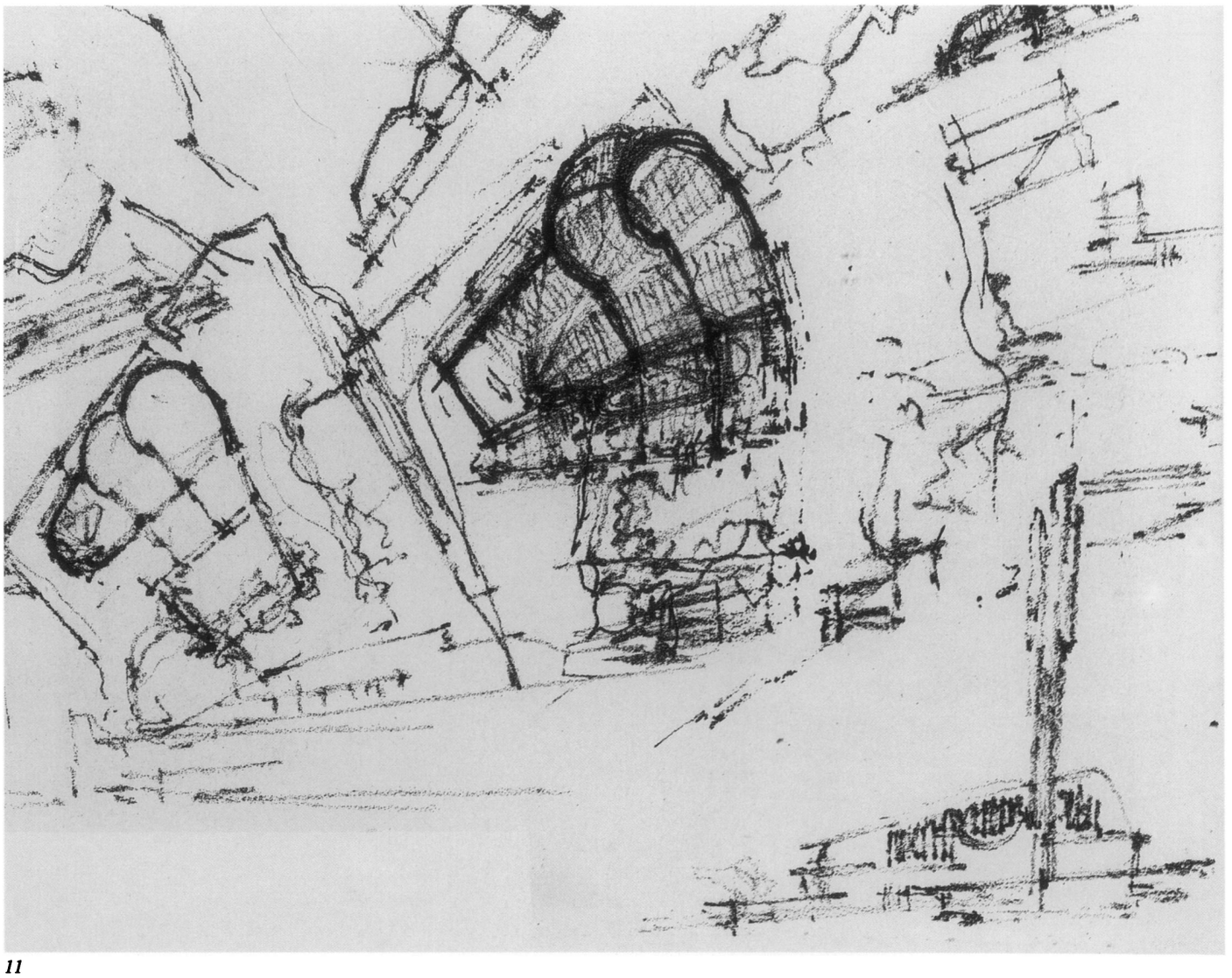

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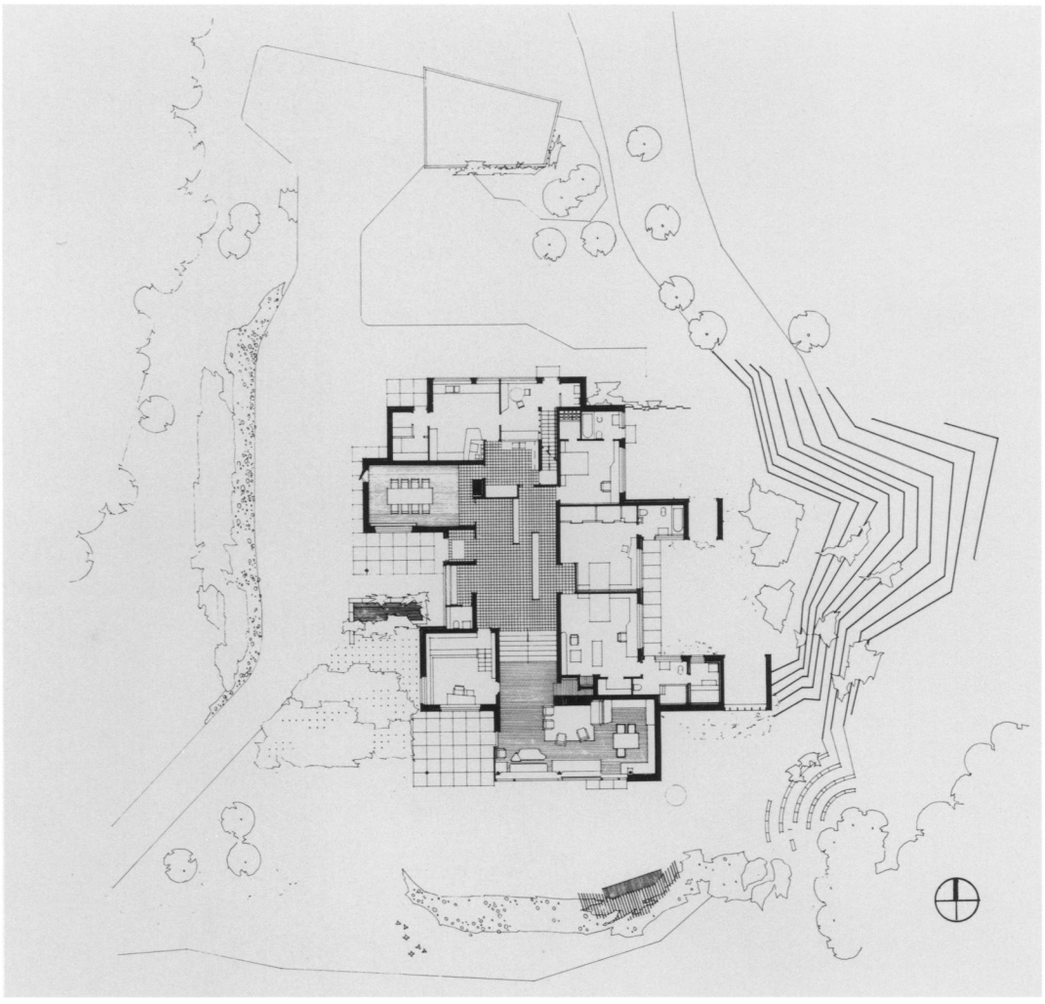

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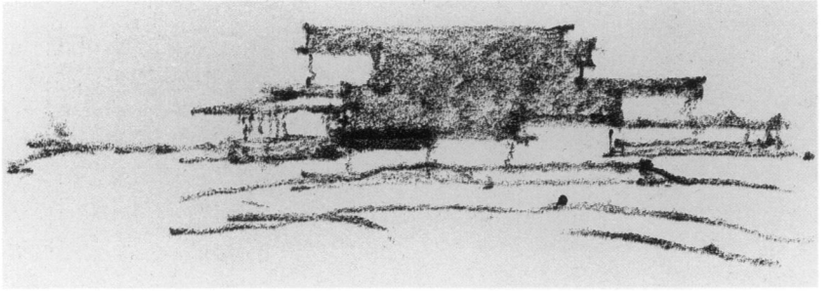

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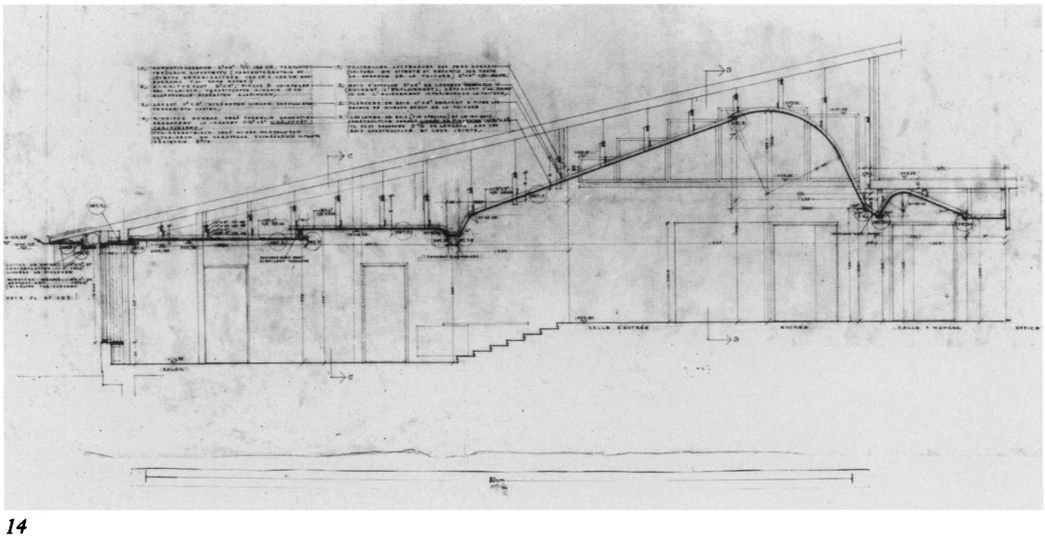

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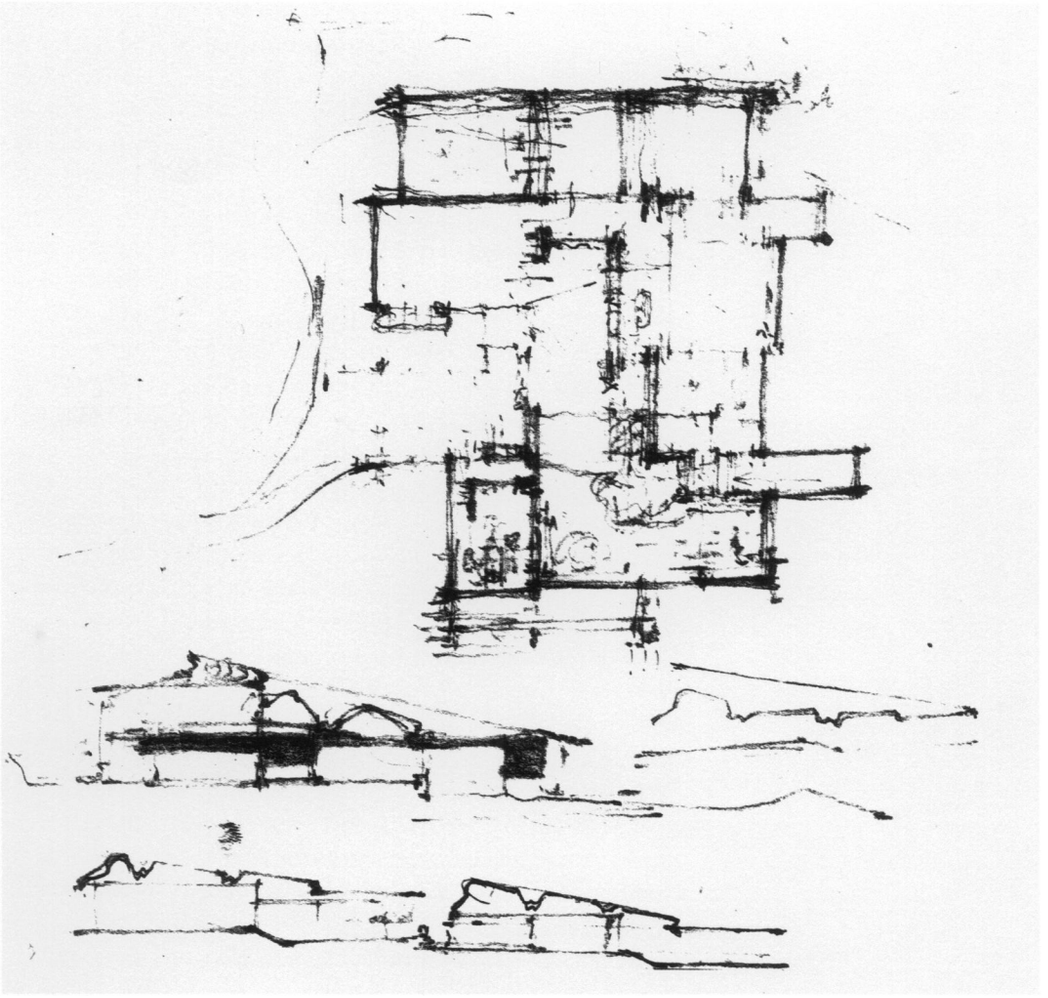

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In these drawings the basic wave-like shape of the plan seemed to conjure up out of itself a myriad of other related forms, as Aalto's imagination caught fire in the design process. His sketching technique facilitated a free thematic study of formal variations which seemed to lead him directly from one design to the next and from one subject to another during this fertile period in his creative life.

In the extraordinary 1956-58 summer house for the art collector and dealer Louis Carré, Aalto adopted a more dialectical approach in which he deliberately combined conflicting orders and lines of force in the same composition. The plan reads as an interlocking configuration of open and closed rectangles, which addresses the different views and conditions of the landscape and embraces private outdoor spaces. (12) The south elevation appears as a simple, single pitched roof running downhill, dramatically reinforcing the dominant characteristic of the site. (13) The major north/south section, buried within this rectangle and wedge massing, is hollowed out in a continuous wave, producing three semi-distinct spaces akin to those in the Imatra church. (14) When read together the effect is indeed contrapuntal, and that is precisely the way Aalto's sketches represent it, with all three ideas on the same sheet, as one unified architectural idea. (15)

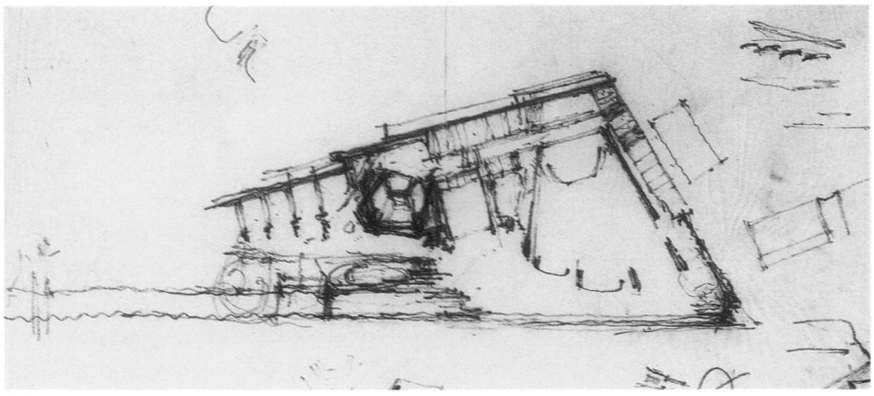
In the development of the building these concepts are tenaciously adhered to, as if to deliberately create dichotomies and contrasts: the plan becomes more fragmented to open up to the landscape and admit east/west light, with the dining room, hall and living room forming a continuous ⅂ shaped figure; the wedge-shaped roof form is cut away to allow the plan to work, but never so as to compromise its basic mass; and the surprising wave-like section through the hall develops as an expansive single volume which creates surprise and grandeur upon entry to the house. The apparent lack of integration, while seemingly incongruous in

relation to the preceding projects, is really an extension of the space/mass reciprocities which had been achieved at Vuoksenniska. A unity of concept is achieved without sacrificing formal diversity.

One of Aalto's last great works, the Finlandia Concert Hall (designed in 1962, constructed in 1967-71) in Helsinki shows the way in which his complex sketching technique had evolved to promote a kind of figure/field relationship. The famous juxtaposition of the two rock-like auditorium figures within the wall-like envelope defined by Aalto's civic center plan is almost a summation of his attitudes to building and landscape, to free forms versus urban grids, to the "imaginary mountain" on the fixed horizon. Aalto's design sketch for the hall level plan first defines the long line of movement up the multiple staircases, then the outer boundaries, and then tentatively sets the fan forms of the two auditoria in a dynamic relationship within these boundaries, as figures in a neutral field. (16) A second sketch of the entry level and sweeping staircase brilliantly depicts movement itself, the lines gradually darkening to find the proper forms. (17) The complex articulation of the plan eventually is projected into the organic, acoustically informed sections of the two halls. (20) It is important to note that while movement and acoustics formed a functional rationale for many of the gestures for this and other Aalto works, he perfected the contours of space and mass through the technique of sketching, basing the final lines on visual balance, dynamism and beauty. (18, 19)

Aalto found the naturalistic, formal poetry of his "imaginary mountains" through his uncanny ability to draw speculatively, yet with a descriptive precision that only a superbly rational architect could muster. By using the conventions of topographical contour from cartography and classical figural drawing simultaneously, Aalto combined science and tradition. He was thereby able to mold complex space and mass through the relatively simple conventions of drawing with lines – lines that articulated the outlines of form. This freed him to create the almost impossibly amorphous and "irrational" elements which increasingly distinguished his post-war buildings. He was able to juxtapose figural cut lines in several directions simultaneously, playing with spatial registrations in much the same way a composer sets one line against another. His three primary strategies for these juxtapositions, reflexive, contrapuntal and figure/field, formed the basis for an inventive canon of themes and variations in several dozen works from the 1950s onward.

Aalto's extraordinary synthesis of space/mass composition in his post-war work advanced the production of architectural form in ways which are only now bearing fruit in the work of contemporary architects. The sketch, far from being an improvisational or speculative notation, as it was for other modern architects, became the most powerful design tool in Aalto's repertoire, allowing him to proceed into realms of volumetric, planimetric and massing composition which most architects



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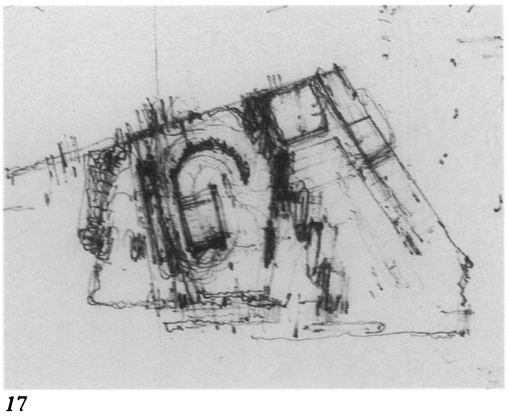

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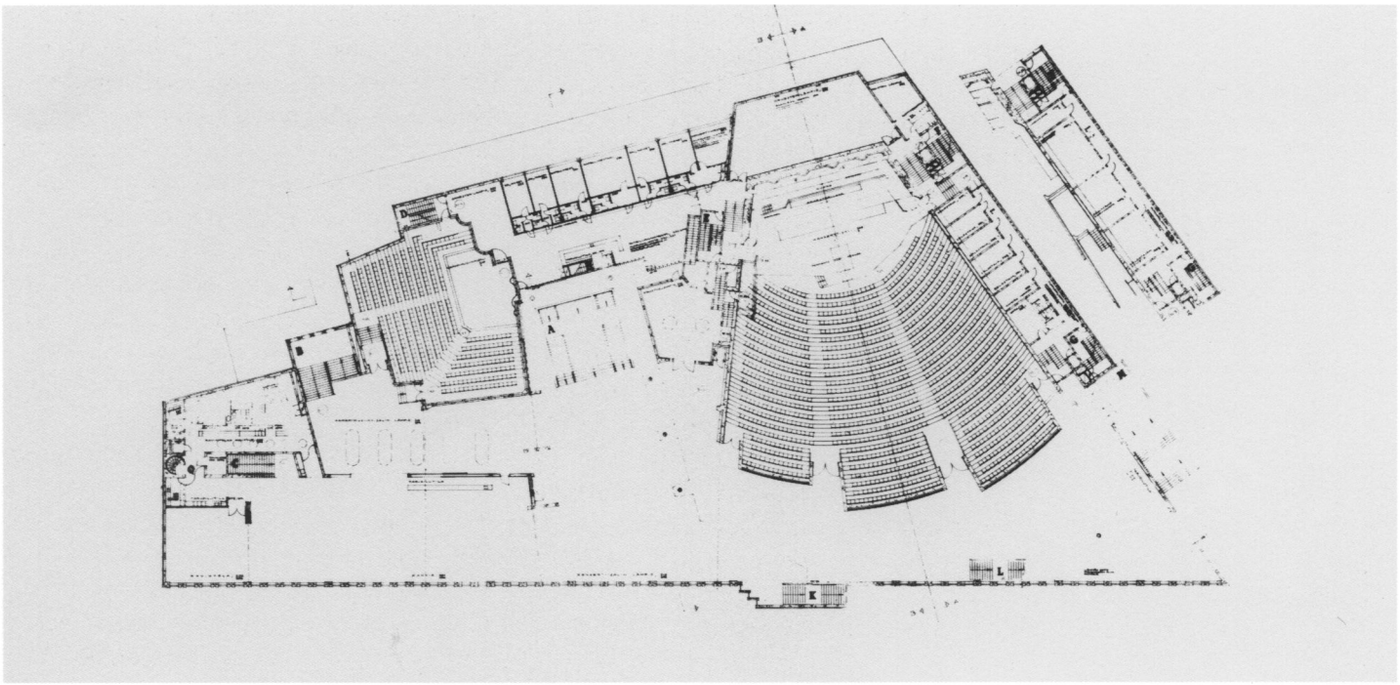

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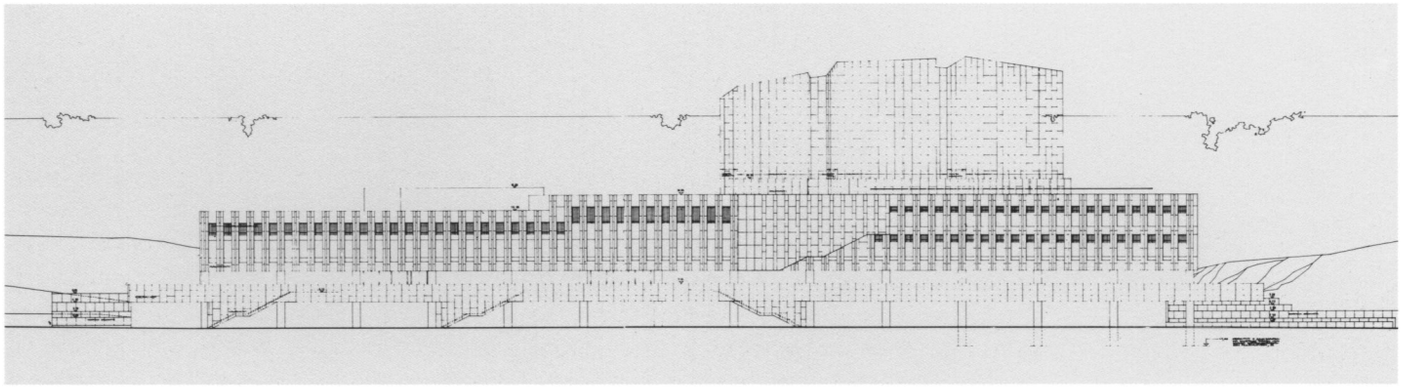

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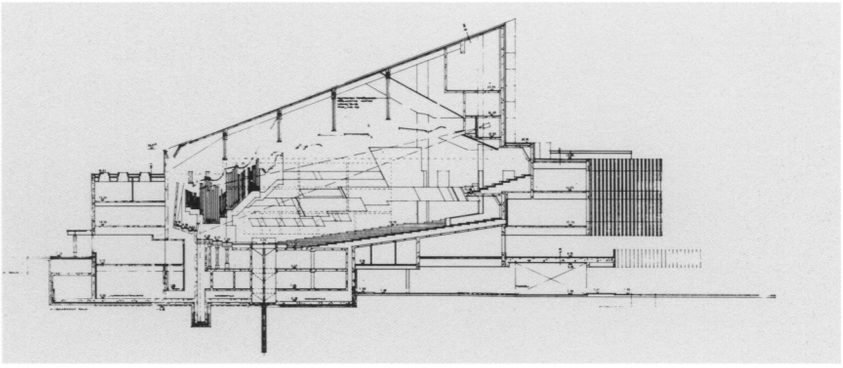
could not have conceived. His unique conceptual schema seemed to embrace the poetic qualities of form in drawing while simultaneously adhering to a precise, analytical methodology. Unlike many rationalist designers, he refused to separate the two, as his writings confirm.[18] It is impossible to ignore the primal, organic beauty behind his sketches, yet the romantic qualities of the drawings should not obscure for the observer the architectural clarity behind each idea. Alvar Aalto's sketches rank among the great works of twentieth-century draftsmanship, and are rightly considered works of abstract art. Yet they are also precise and descriptive keys to Aalto's complex mode of conception, offering a rare view of an imagination that somehow combined fantasy with rationality, fused mass and space into a single concept, and united building and landscape with a cartographer's eye.



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18. See, for instance, Alvar Aalto, "Rationalism and Man" (1935) in *Sketches*, edited by Schildt and Wrede, pp. 47-59.