Coordinating Method and Art: Alvar Aalto at Play

by HARRY CHARRINGTON

> Modern society is characterized by an exaggerated worship of theory, an attitude that reflects the human predicament and insecurity. We think that in it we can find salvation from the threat of chaos. But we must realise that pure theory without feeling cannot create anything. You cannot set up series of methods applicable to the most varied circumstances; only intuition can help here. Let me put it this way: theory and methodology should form a basis for an intuitive working method. The question is not which dominates the other, but how to co-ordinate them. Method is not the antithesis of art, not its enemy but its prerequisite. (Alvar Aalto, speech at Jvyäsklylä *Kesäpäivät* (Summer Days), 1965)[1]

INTRODUCTION

In January 2010, Helsinki University of Technology, Helsinki University of Economics and Helsinki University of Art & Design merged to form Aalto University, a recognition honouring an 'illustrious name' that 'symbolizes change and is a tribute to a courageous, overarching renaissance man'[2] (Fig. 1). The naming of a new university after Alvar Aalto (1898–1976) indicates his remarkable status in Finland and, given that this rebranding explicitly acknowledged his international reputation, confirms how the adulation of Alvar Aalto abroad has been implicit in the making of what Wilfred Nerdinger has called the 'marketing triumph of a modern Finland'.[3]

Fig. 1. *Cakes in the shape of Savoy Vases (cf. Fig. 14a), served at the celebrations marking the renovation of Inkeroinen, now Tehtäänmäki, Primary School, in 2005 (Author)*

A significant theme of this has been the notion of Alvar Aalto and Finland as exceptions to the Modern Movement mainstream, the motive for which, as Alvar Aalto commented in his 1962 lecture to the Finnish Academy — 'The International Status of Finnish Art'[4] — has as much to do with an international agenda as with any more local reality. Observing this, Alvar Aalto spoke of his 'many sentimental critics' and the fate they decreed, when 'they always list all the favourable points, and forget the unfavourable ones'.[5] Nevertheless, he was at least partly responsible for nurturing this tendency, for, as Göran Schildt (1917–2009), Alvar Aalto's biographer, remarked, he 'was no saint, not even a boy scout; he was a person who manoeuvred with considerable shrewdness in a complicated world'.[6]

It was Sigfried Giedion (1888–1968), Alvar Aalto's friend and collaborator since 1929, who in 1952 provided the first retrospective evaluation, Finnish or foreign, of the Alvar Aalto atelier, in his second edition of *Space, Time & Architecture*.[7] Giedion situated Alvar Aalto and Finnish architecture within an international context, conjuring an image of romantic remoteness at a remove from the rest of Modernism — 'the freedom of the view from the north' — in a manner equivalent to CIAM's (Congrès International d'Architecture Moderne) 1931 conception of a 'creative periphery', to which Giedion had himself been party. Giedion also analysed Alvar Aalto's work as a necessary 'leap from the rational-functional to the irrational-organic', a counterbalance to the earlier, more doctrinaire Modern Movement, which was permissible now that the first 'functional conception' had been secured.[8] Marc Treib has noted that this interpretation is summarized in the title of Giedion's chapter on Aalto in the fifth edition of *Space, Time and Architecture* (1967): 'Alvar Aalto: Irrationality and Standardisation'.[9]

Giedion's interpretation was supplemented by a group of British architects and critics who particularly admired Alvar Aalto in the 1940s, 1950s and 1960s. They desired to increase the Modern Movement's responsiveness to local contexts and traditions, an ambition that first saw light in J. M. Richards' editorship of the *Architectural Review*, and in his book *An Introduction to Modern Architecture* (1940). However, it was post-war visits to Finland by Leslie Martin, F. R. S. Yorke and others that established Alvar Aalto as a central figure in this endeavour. This would culminate in Alvar Aalto's first major international recognition, the Royal Institute of British Architects (RIBA) Gold Medal, in 1958.[10]

These structures of interpretation have endured, and, as Alvar Aalto also observed in 'The International Status of Finnish Art', have been accepted as much by Finnish critics as foreign ones.[11] Writing in the mid-1980s, at the beginning of the revival of interest in Alvar Aalto in Finland, and following the abandonment of the normative debates and aesthetics of the 'Ruusun falangi' ('rose-pink phalanx') that had largely dominated the architectural debate of the previous two decades, Göran Schildt stated, 'it is today Aalto's digressions from Functionalism rather than his contributions to it that arrest us'. 'Ruusun falangi' is a pun on the name of Aarno Ruusuvuori (1925–92, whose name translates as 'Rosehill'), often seen as the leader of the opposition to Alvar Aalto in Finland in the 1960s and 1970s.[12]

Alvar Aalto, in what Richard Weston has identified as 'wholesome Nordic sanity', seems to question, but at the same time extend, the tenets of the Modern Movement.[13] Together with it, yet at the same time apart from it, Alvar Aalto has developed a

remarkable and mutable position within Modernism's historiography as an architect who is both the exception to, and yet the saviour of, as Colin St John Wilson would term it, the 'uncompleted modern project'. Numerous writers have praised his work as a bulwark against a corrupted world. For instance, in *The Other Tradition of Modern Architecture: the Uncompleted Project*, Colin St John Wilson (who had worked with Leslie Martin) systematically sets case studies from Alvar Aalto's *oeuvre* against the trajectory of the mainstream Modern Movement, while Juhani Pallasmaa has viewed Alvar Aalto as an exceptional architect capable of reconciling seemingly insurmountable dualisms, writing of his work that:

> Instead of aiming at a conceptual and formal purity, it sought to reconcile opposites such as nature and culture, history and modernity, society and the individual, tradition and innovation, standardization and variety, the universal and the regional, the intellectual and the emotive, the rational and the intuitive.[14]

At the same time these binary qualities have been taken up by those making more damning critiques of the limitations of Modernism. In *Sources of Modern Eclecticism* Demetri Porpyhrios placed Alvar Aalto's 'indiscreet juxtaposition' at the centre of his critique of Modernism's singularity and intrinsic anti-urbanism. Meanwhile, Robert Venturi cast Alvar Aalto as a hero in his *Complexity and Contradiction in Architecture*, specifically for his exceptional capacity to manipulate 'impurity' beyond Modernism's impoverished language, intriguingly aligning his analysis with Wilson's.[15]

Finland — in Giedion's estimation corresponding to Alvar Aalto 'as Spain [...] to Picasso' — is a critical adjunct to these arguments, made all the more so as Alvar Aalto, almost uniquely among the great twentieth-century modern architects, worked at home. Yet, notwithstanding Alvar Aalto's unavoidably nuanced relationship with his Finnish homeland, ever since Giedion's scanty presentation of it as a pastoral and yet progressively urbane country, it has been increasingly characterized as a bucolic environment tinged with metaphysical qualities, a place where wood can 'reawaken the peasant and forest dweller concealed in the Finnish soul'.[16] Premised on a limited knowledge of Finland's history, this idealization of Finnish society and nature romanticism is also, once again, relative, with Finland acting as conscience to larger, more overtly industrialized countries, as an abstracted place in which a natural, Modernist architecture organically emerges.

This 'expediency of inexactitude', to use Roger Connah's phrase, is something that Finnish critics and architects, including Alvar Aalto himself, have also exploited; it appears to suit everyone to describe Finland and Finnish architecture as 'other'.[17] In 1954, Giedion's Swiss compatriots Claudia and Eduard Neuenschwander (the latter a former member of the Alvar Aalto atelier), with the atelier's cooperation, wrote *Alvar Aalto and Finnish Architecture*. In their brief history of Finnish architecture the Neuenschwanders omit any reference to periods of eclectic historicism (including the Aaltos' own), while emphasizing the 'purity' of the vernacular and classical wooden churches and towns.[18] Later, in 1959, Alvar Aalto's friend, the Finnish architectural historian, Nils Erik Wickberg (1909–2002) wrote *Suomen Rakennustaide* (Finnish Architecture), the first complete concept of a history of 'Finnish Architecture'. Wickberg established a more comprehensive narrative, but one shorn of any competing dissonances in which a natural yet progressive environment was formed from a succession of unified styles, each neatly

handing over to the next. This narrative was subsequently institutionalized by the Suomen Arkkitehtiliitto – Finsk Arkitektförbund (SAFA), the Finnish Association of Architects and accepted by foreign writers, including J. M. Richards, whose *A Guide to Finnish Architecture* (1966) is almost identical in its structure, and in turn forms the model for many subsequent books.[19]

Alvar Aalto was also aware that geographical distance from the mainstream made coverage and critiques of the Aalto atelier's work, and of Finland generally, even more than usually mediated and reliant on what Beatriz Colomina has called the 'photography and the layout [that] constructs another architecture in the space of the page'. Aided by Aino Aalto's (1893–1949) expertise as a photographer, Alvar Aalto took great care over the published presentation of his work. He commissioned the photographer Gustaf Welin in the 1930s, and later Heikki Havas and Eino Mäkinen, and also went to great lengths to secure the services of Ezra Stoller to photograph the Baker House Dormitory at the Massachusetts Institute of Technology (1946–49) in Cambridge, Massachusetts. Alvar Aalto's atelier also helped to design and edit the first comprehensive retrospective book of its work, entitled simply *Alvar Aalto*, published in 1963 and edited by a former employee, Karl Fleig.[20] Beautifully laid out, this contains redrawn plans of projects together with carefully cropped images that heighten the buildings' autonomous compositional forms and relation to an unadulterated landscape; so that even the vast Sunila cellulose factory (1936 onwards) becomes an exemplar of visual harmony. Petra Ceferin has written how at times props were introduced to emphasize this, as in Mäkinen's photograph of the grass steps of Säynätsalo Town Hall (1949–52), in which an assistant holds a leafy branch to 'correctly' frame the view (Fig. 2). In turn, many subsequent writers have accepted and discussed this reproduction as architectural reality, including Leonardo Benevolo, Kenneth Frampton, Siegfried Gidieon, H. R. Hitchcock and Charles Jencks.[21]

It is possible to argue that 'Aalto the exception' and the corollary 'Finland the exception' have now become so ubiquitous in coverage of Alvar Aalto's work as to have become invisible. Furthermore, while these comparative contentions have illuminated a wider critical context, it seems reasonable to state, as does Roger Connah, that the cultivation of Aalto and his milieu as anomalous phenomena 'isolated in the history of the twentieth century' means 'the less hold we have on its commonality, on its resonance [...] with the many events and movements of the twentieth century'.[22]

Many histories of modern architecture mask its diachronic nature with a synchronic image, behaviour that is typical of what Eric Hobsbawm has called the twentieth-century denial of history.[23] This is a belief that we can step outside history (that is to say, humanity) to overcome time and circumstance, and permit a more or less discrete will to be placed above the chaos of life. In turn, this will becomes the subject of its own history, which in architectural terms is a tale of timeless buildings that can have a mythical status but not a substantive one. In describing intention, such histories may, or may not, be representative of an architect's aspiration. But that so many of the assertions concerning Alvar Aalto — that a technological society must not relinquish values of nature, culture, spirituality and communality — so closely resemble those arguing for the *völkisch* architecture in the 1930s suggests that these arguments, at least in part, miss the actual characteristics of his contribution.[24]

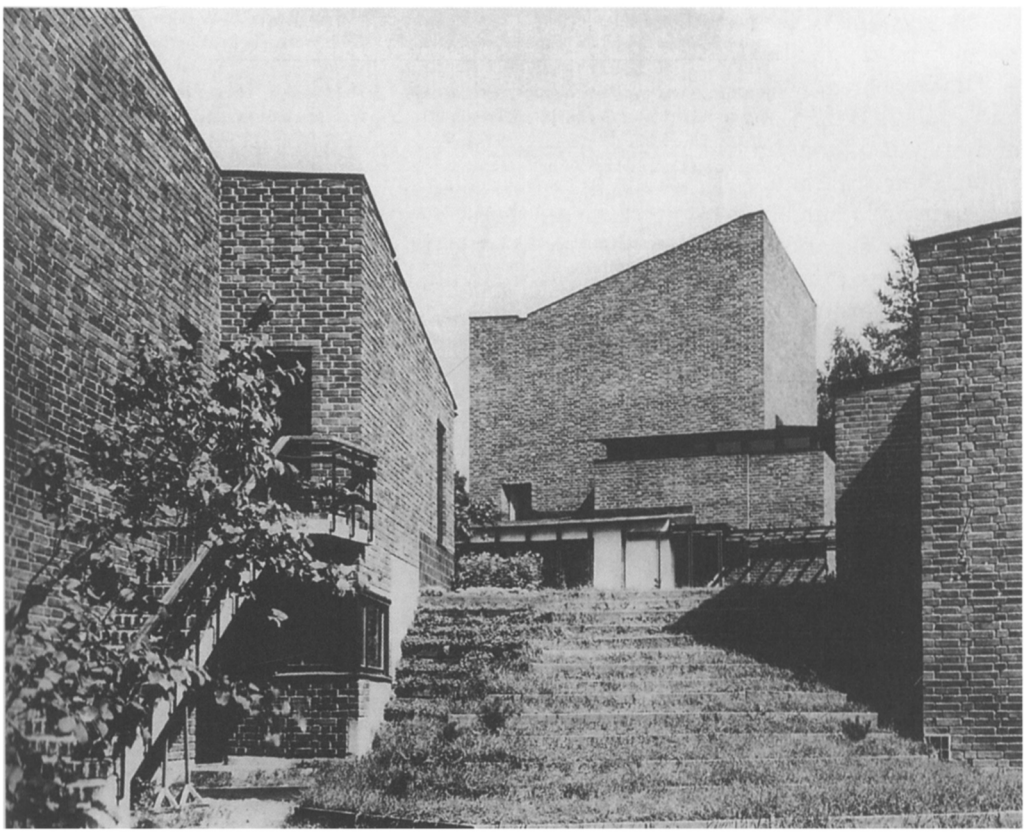

Fig. 2. *Uncropped version of Eino Mäkinen photograph of Säynätsalo Town Hall, 1949–52, originally reproduced minus the offending arm, in* Alvar Aalto, Band I 1922–1962, *ed. Karl Fleig (Zurich, 1962) (Petra Ceferin,* ptah *(2002/1))*

'WE DON'T NEED TO BE SO DOGMATIC!'[25]

This essay argues that, despite all the idealized representations of his work, Alvar Aalto's defining achievements as a designer have been overlooked. It inquires into how he evolved a way of working that enabled him to build well but, at the same time, reflexively and prolifically, within the conditions of the twentieth century. There are undoubted weaknesses to be found in the Aalto atelier's work, but in completing over four hundred building projects they evidently built out of what was there, not what they wished was there; theirs was an undertaking in which they demonstrated a capacity for contingency that allowed the particularities of physical and social ecology, brief, budget and materials to inform each other and the project.[26] As early as 1922 Alvar Aalto had praised his friend, the expressionist painter Tyko Sallinen (1879–1959), for his depiction of a Finnish landscape that was 'not idealized but intertwined with man [...] even in its violated forests and its desolate suburban development'. Later, in 1955, he said, 'It is unthinkable that anything of value that has been achieved in the shadow of ignorance

or of some kind of semi-civilization could bear witness to a highly civilized nation with development potential.'[27]

The 'bent knee' stool, Artek Model S60 (1932), is an example of the gap between image and process (Fig. 3). Familiar enough to genuinely merit the term iconic, it has been endlessly imitated, but the precise nature of its making, from which we might learn rather than just admire, is hidden. Legs of locally sourced birch are laminated at their top end with 3 mm birch strips, which are then bent in a jig and glued under pressure to form a seamless and stable 'knee-joint' with which to attach the leg to the sitting surface, the form preserving the tension of its manufacture. The stool is available with three or four legs according to need. The top is of linoleum, which is warm to the touch, 'gives' a little to the user and whose colour can be varied (the palette is derived from Aino and Alvar Aalto's friend Fernand Léger [1881–1955]).[28] The edges are neatly trimmed and protected with a birch strip matching the legs, while originally the varnish contained milk to give it a lighter appearance. The stool is stackable — and attractive when stacked — as well as enduring and recyclable. Mass-producible and affordable in intent, so it was in reality until very recently. Technique and artistry — international influences — are reinterpreted in a local instance and material.[29]

Taking its structure from Alvar Aalto's speech reproduced at the head of this article, this essay locates the connections and theories that led to the basis of an intuitive working method, and then examines the habits, skills and judgments of that method itself. It also argues that Alvar Aalto's artistry should be characterized as a social practice in the

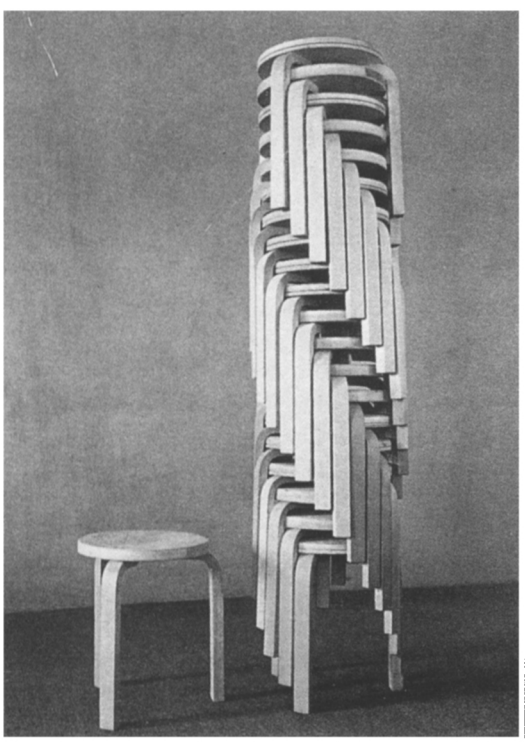

Fig. 3. *Aino and Alvar Aalto, Stacked Model S60 stools, 1933* (Architectural Review)

manner of his hero, Johann Wolfgang von Goethe (1749–1832), and that its accomplishments rest on an inventive design approach rooted in the values and freedom of play.

The essay draws on three major sources in addition to being indebted to a number of the studies already mentioned. First, there are the first-hand accounts by members of the Aalto atelier interviewed in a period over three years at the turn of the millennium, as well as colleagues I spoke to when working for the atelier under the direction of Elissa Aalto in the 1980s. Second, I have pursued sources, connections and friendships apparent in Alvar Aalto's writings and correspondence, in the fragments of the Aaltos' own library now housed in the Alvar Aalto Foundation, as well as in Göran Schildt's remarkable biography (which through its very nature as a biography did not delve into them, or treat them, as I will argue, as fundamental to his work). Finally, I have drawn on a significant re-documentation of Alvar Aalto's milieu that has taken place (mainly in Finnish scholarship) in the years around and since 1998, the centenary of Alvar Aalto's birth. This includes Pekka Korvenmaa's detailing of Alvar Aalto's relationships with Finnish industry, Elina Standertskjöld on Alvar Aalto's time in the United States and on Finnish architectural history in general, Eeva-Liisa Pelkonen on the Aaltos' relationship to Scandinavian geo-politics of the 1930s, and, in particular, Renja Suominen-Kokkonen's research into Alvar Aalto's relationship and creative interdependence with his partner Aino Aalto as a 'second and independent designer'. All of these have furthered an understanding of Alvar Aalto grounded not only in place, but by place.[30]

The activities of Alvar Aalto's partners and atelier are not the central focus of this essay, but it would be churlish not to acknowledge their artistic and social importance in this endeavour. From 1924 Alvar Aalto worked in partnership with Aino Aalto (*née* Marsio) until her death in 1949, insisting that 'only when we're together can an unexaggerated attitude be found'.[31] In 1952 Alvar Aalto married, and in 1958 formed a partnership with, the architect Elsa (Elissa) Mäkiniemi (1922–94) who, after Alvar Aalto's death in 1976, continued to run the atelier until her own death in 1994. During this latter period she took artistic responsibility for, and supervised the construction of, buildings such as the Essen Opera House (1959–88) that are now so evidently part of the 'Aalto' canon. Alvar Aalto also relied on his studio and the discipline of its iterative design process. The collective aspiration of the Alvar Aalto atelier was most strikingly expressed in the leaving of drawings unsigned, while its collegiate atmosphere reminded one of its members, Tore Tallqvist, of an architecture school studio: 'quite a bohemian place, considering how high a status an office it was'.[32] I will therefore avoid the blanket term 'Aalto', and pay due attention to these individuals.

CAUSE AND PLAY

Alvar Aalto's most famous essay, 'Architettura e arte concreta' (Architecture and Concrete Art, 1947), explores the empathetic and intuitive response of design to the relationship of inhabitant and site and stresses the experience of spatial strata — the horizontal layering of space — over the interplay of solid objects.[33] Through creating 'synthetic landscapes' Alvar Aalto sought to create affinities with the spectator over time, fostering, to use Jacob von Uexhüll's (1864–1944) term, a 'surrounding world' (*Umwelt*), a reflexive structure in which 'each *Umwelt* forms a closed unit in itself, which is

governed, in all its parts, by the meaning it has for the subject'.[34] In this apprehended environment the temporal is as important as the spatial, as it evolves through the cyclical interplay between the subject and the place, each acting on, and being acted upon, the other. This 'phenomenal world embracing each individual like a "soap bubble"' echoes Alvar Aalto's contention that 'Just as in nature every cell is related to the whole, so in architecture the parts must be "conscious of the whole"'[35] (an ideal that also reiterates the classical thought that in a perfected building the parts relate to the whole). It is also his view that:

> Architecture never exerts its influence all at once, in the form of a single impulse, provoking an immediate reaction in people. It acts slowly, its influence becomes engraved in peoples' minds so that they hardly notice it, gradually, over the lifetime of many generations.[36]

This is a pragmatic and opportunistic stance that is equally naive and wise in its faith in the capacity of empathy, about which Alvar Aalto quoted Nietzsche, 'Either I feel or I do not feel.'[37] The Alvar Aalto atelier's works are on the one hand immediately fit for purpose, and on the other are sublimated patterns of the enduring environments that Alvar Aalto visited and admired throughout his life — and whose ambience became part of his environmental make-up (*ympäristökäsitys*). Hence Alvar Aalto's paradoxical quotation of Nietzsche that 'Only men of the dark look back!', when he immersed his own practices in the past.[38]

As colleagues such as Leonardo Mosso have recalled, it was those places in which people might locate their commonality, and where enduring social institutions and material cultures continued to inform and encourage socially beneficial patterns of behaviour, that attracted Alvar Aalto's interest.[39] This is a conception analogous to what Henri Lefebvre would later call 'social space', and which Alvar Aalto expressed through quoting from August Strindberg's 1902 dialogic poem *Trefaldighetsnatten*:

> Gold powder in an iron deposit
> copper snake under a silver linden
> this is the wood nymph's riddle.
> This is yours and mine.[40]

Play offered Alvar Aalto an approach that could manifest such an approach within the conditions of modernity, harmonizing his intuitive artistic response with the fortuities of circumstance and the intellectual structures of civil society. He could invoke places that embody and legitimize a purposive intention (*Zweckmässigkeit*) premised on an active relationship between the spectator and the object, while at the same time meeting the more immediate, functional (*sachlich*) requirements of an architectural project. It is an art, in the words of Josef Albers, that is:

> revelation instead of information, expression instead of description, creation instead of imitation or repetition. Art is concerned with the HOW not the WHAT; not with literal content but with the performance of the factual content. The performance — how it is done — that is the content of art.[41] (Alber's capitalization)

Alvar Aalto's view of the role of play, and the value of art and the artist, in forming the purposive intention of a project was mediated by various sources dealing with, or even simply describing, the relationship between artistic production and experience. In this Alvar Aalto, a fluent German speaker, drew on the work of Goethe, and in

particular on his book *Italian Journey* (*Italienische Reise*, 1786–88) which he kept at his bedside:

> It is curious to find what a wide gap exists between the arts, sciences and practical work based on pure thought and literary effort, and those based on matter. One might almost say that the River Styx runs between them. Very occasionally one finds literature arising from an act of creation based in matter. An example of this is Goethe's *Italian Journey*.[42]

The Goethe of the *Italian Journey* is a long way from that of the storms and stresses of *Sturm und Drang*, and it is indicative of its importance that Alvar Aalto borrowed the title for his 1954 article in *Casabella-continuatà* — 'Viaggio in Italia' — in which he set out his own empathetic relationship with Italy. The suggestiveness of the Aalto atelier's work also parallels that of Goethe's contemporary Friedrich Schiller (1759–1805) and his conception of the 'play-drive' (*Spieltrieb*), which approximates to Alvar Aalto's working approach. This is also the case with the Finnish philosopher Yrjö Hirn's (1870–1952) analysis of play, which Alvar Aalto directly — and exceptionally — acknowledged.[43]

In a treatise derived from his own artistic experience, *On the Aesthetic Education of Man* (1794), Schiller postulates that it is only the artist who, by simultaneously reconciling the opposing sense-drive (*Stofftrieb*) and form-drive (*Formtrieb*) through the operation of a play-drive (*Spieltrieb*), can achieve true freedom. In Schiller's argument the sense-drive is based in the physical and temporal existence of man and his sensuous nature, whereas the form-drive derives from human reason and an absolute notion of humanity beyond immediate experience. Asserting that sensation precedes consciousness, Schiller argues that, while ideas may be conceived within the timeless realm of reason, it is only through engaging in the temporal flux of the senses that such ideas can be actualized. It is through balancing the two competing drives that the play-drive emerges, an intuition of a complete human nature that releases man to his freedom and to his humanity: 'The mind, then, passes from sensation to thought through a middle disposition in which sensuousness and reason are active at the same time.'[44]

Hirn's theory, while founded on a more anthropological basis than Schiller's, acknowledges the universality of the play-drive, but also the possibility of abolishing the distinction between art and life through rooting our experience in art, and its underlying 'play impulse'.[45] In *The Origins of Art* (1904), Hirn wrote of how art is a bodily, not a solely cognitive, experience in which the spectator imitates before he or she comprehends, and in which form takes on the role of a gesture to which a socially expressive response is a fundamental impulse. Such an impulse is not a solely cerebral activity, but engages our entire body, as in the instance of flying a kite, where the physical connection of holding the string extends the psychological fascination with flying into the physiological experience of the kite-flyer.[46]

Hirn states that aesthetics are a form of historical, social and psychological inquiry, as opposed to metaphysical theorizing, and he later rejects both philosophical and transcendental considerations: 'Beauty cannot be considered as a semi-transcendental reality, it must be interpreted as an object of human longing and a source of human enjoyment.'[47] The stress on enjoyment is significant, and it is this, together with an understanding that it is through play that an aesthetic sense can be divined in works that do not serve an aesthetic purpose, that recommended it to Alvar Aalto as a source for the pragmatic nature of architectural design:

> In the midst of our labouring, calculating, utilitarian age, we must continue to believe in the critical significance of play when building a society for human beings, those grown-up children. [...] A one-sided concentration on play, however, would lead us to play with forms, structures and eventually, the body and soul of other people; that would mean treating play as a jest. But Yrjö Hirn was a serious man, and he treated his theory of play with a deep seriousness.[48]

For Alvar Aalto, echoing Hirn, while the art impulse is individual, it innately serves the social purpose endemic to the practice of art, and it is play that unifies these. Through his contact with, among others, the Finnish philosopher Eino Kaila (1890–1958), Alvar Aalto was aware of many of the vitalist ideas of Bergson; Schiller and Hirn's rooting of play in its location ensured that it was never the exercise of an autonomous artist whose 'illuminated eye' is separate from the 'scientific eye' of actuality.[49] Instead, form is crystallized after consideration of the situated knowledge of the act, a linkage that Alvar Aalto articulated when he stated that, while solutions to problems might be rational, the process of finding them was not: 'what appears to be nothing but playing with forms may unexpectedly, much later, lead to the emergence of an architectural form'.[50]

Play represented an approach to an artistic unity formed around perceptions derived from direct observation. These precluded hasty teleological judgments that would block the artist's receptive faculties and distance his or her work from society. In 'Architettura e arte concreta', Alvar Aalto describes a process that he aptly calls 'child-like' in which, without any *a priori* concept of space or functional purpose, he was free to play with all causalities, and able to assemble 'a maze of possibilities' into a coherent design.[51]

There can be no preconception as to an aesthetic outcome in such an understanding, as art itself is a condition of intuition, and any attempt to anticipate the outcome of a project during its design process would interfere with the stimulation of an artistic response that matched the nuance of its location. To adopt a relativist approach akin to those critiques discussed at the beginning of this essay, this distinction between performance and product can be illustrated by contrasting Alvar Aalto's work with approaches such as Hugo Häring's (1882–1958) *Leistungsform* (performance form). Häring's self-conscious determination to create an *Organwerk* — an architectural 'organism' — leads to play with consequent forms rather than with formative ideas. In Alvar Aalto's terms this is self-limiting, a factor that accounts for the low regard members of the Alvar Aalto atelier had for the works of 'organic' architects such as Häring and Hans Scharoun (1873–1972). For example, Mikko Merckling has described the latter's Berlin Philharmonie (1956–63) as a forced 'onomatopoeic expressionism' achieved at the expense of the surrounding environment.[52]

For Alvar Aalto, playing as 'unhindered children', unconcerned with preconceived geometries, ensured an outcome that revealed each project's content, a foreign purpose that ensured a project was humanist in its orientation, rather than simply reproductive of its author's will. This is play as intervention, a disinterested aesthetic that turns instinctive activities into art and which resists any over-arching method that might compromise discovery: 'technique is only an aid, not a definite and independent phenomenon therein'.[53]

SOCIAL PRACTICE, ARTISTIC PROCESS

Play was also the synthesizing moment whereby design achieved an informed instinct. To use Yrjö Hirn's terms, Alvar Aalto's working process was as innate and intuitive as the performance of a trapeze artist, where rationalizing the act would be fatal.[54] It is simply, but not simplistically, the relation between idea and circumstance, akin to when a child plays in an unfamiliar room; a child will not say he or she cannot play because some element is missing from a fixed idea of what play is, but will play with what is there.

Alvar Aalto repudiated any representational approach in which the architect's *techne* might overwhelm the *poiesis* of his response to a project and its location, as Dalibor Veseley has written, 'replacing architectural reality as a whole by aesthetic or scientific fiction and, by manipulating that fiction, believing that we are manipulating or even creating reality itself'.[55] What disciplined this part of Alvar Aalto's process was direct observation, mediated through drawing and painting. While a dependency on the senses for the 'raw materials' on which we base our thought is superficially reminiscent of Rousseau, Alvar Aalto made clear that the senses must remain our servants, in the service of human laws of evolution and culture: our 'instinct and reason'. His position is more reminiscent of Schiller's distinction between the state of nature that we are born into, and that which we form 'in idea' through our independent experience; as Schiller notes, 'contemplation is Man's first free relation to the universe which surrounds him'.[56] Goethe's writings also reinforce a tradition in which artistic production is an outcome of dispassionate studies in the natural sciences that match any subjective expression with objective restraint. Their 'sensitive empiricism' (*zarte Empirie*) emphasizes knowledge won of the truth of the natural world in which things are perceived through extended attention to their qualities, which is to say that they are seen as though for the first time. It is these precise observations that form the basis for the Aalto atelier's idealizing perception of a surrounding world that is both shaped by, and shaping of, the inhabitants of their work.[57]

Alvar Aalto's sketchbooks and Aino Aalto's photographs of Italy are poor as archaeological records, but they are arresting mementoes of the ambiences that they experienced and idealized. Standing in front of Mantegna's frescoes in the Chapel of S. Eremitani in Padua during their 1924 honeymoon, Alvar Aalto remarked how, 'the synthetic landscape [of] the rising town [that] has become a religion [...] in which aesthetic value arose as a by-product, just like the beautiful lines that mark human civilization on Mantegna's frescoes'.[58] Similarly, Alvar Aalto's drawings reveal *milieus* in which no single thing appears in isolation but always as a fragment of wider experience. They likewise record the unity of buildings and landscapes, with weathering and invading vegetation being observed as attentively as the building that it is bringing under its hegemony. This merging of natural processes and architectural order was later given a political role in Alvar Aalto's designs for democratic institutions from the Avesta Town Centre (1944, with Albin Stark) project onwards, as at the Säynätsalo Town Hall (Fig. 2).

Unsurprisingly, in this humanist orientation intimate consideration is given to the body. Alvar Aalto draws a glimpse of St Mark's Basilica in Venice as he emerges from the Mercerie into the Piazzetta dei Leoni (Fig. 4). This shows an oblique framing of a

major building, as was later repeated in many of the Aalto atelier's works in which buildings are placed at an angle to the line of people's movement, and are thus engaged together with their surroundings, as for instance at the Finlandia Hall (1962–75, Fig. 6). Equally Aino Aalto's photographs of urban spaces are peopled with labourers, cleaners and children to stress their social contexts (Fig. 5).[59] As Sverker Gardberg of the Aalto atelier later recollected:

> It was interesting to hear how Alvar explained his design process. He used natural images: when we were drawing a bridge over a railway, he said it should cross diagonally, because when you cross a ridge on foot, you cross it diagonally.[60]

This observation and discriminatory perception is matched by a free experimentation with those perceptions. Whereas Goethe had taken history for granted as a part of architecture's compositional constitution, the Modernist and painterly Alvar was interested only in the conformity of sensations and sentiments that made history a felt present. This approach was most immediately derived from the influence and work of Aino and Alvar Aalto's friend László Moholy-Nagy (1893–1946), with whom Alvar Aalto established an enduring bond from the time of their first meeting at CIAM II in Frankfurt in 1929.[61] Moholy-Nagy initially brought the Aaltos an attitude of approaching a local context with the clarity of self-consciously radicalized European techniques that augmented the more Ruskinan sensibility of their sketches, paintings and photographs. Later, following his departure from Germany, and during his time in Britain, and more particularly in the United States, he forged a connection with an Anglo-American empirical tradition.

What made Moholy-Nagy's approach of particular value, in both instances, was that his work was underscored with a Goethean belief in the 'natural science' of contemplative judgment and the supremacy of art, a way of attaining all-embracing objective ideals that Moholy-Nagy sought through aligning penetrative study with the spontaneous discovery and synthesis of artistic experimentation. Upon establishing the New Bauhaus in Chicago in 1937, which the Aaltos visited in 1938, Moholy-Nagy attempted to unify laboratory and studio methods to produce 'objective' art. He did this by extending Walter Gropius' original curriculum and establishing courses in physical, life, human and social sciences, which coloured the New Bauhaus with a combination of Goethe's *Naturphilosophie* and John Dewey's (1859–1952) 'pragmatics'.[62] Dewey's *Art as Experience* (1934) helped move Moholy-Nagy towards a relativism based on situation and interaction in which 'no human phenomenon can be considered without its general physical and social environment'.[64] Such an attitude resonates with the aesthetic experience of the forest in which Alvar Aalto grew up, where, as Arnold Berleant has written, 'the distancing that is so important a part of traditional [aesthetic] appreciation is difficult to achieve when one is surrounded by the "object"'.[64]

Earlier in 1938, on disembarking in New York, Alvar Aalto had sought out Frederick Kiesler (1890–1965), head of the Laboratory for Design-Correlation at Columbia University from 1937 to 1943. Kiesler had earlier worked with Léger in Paris and Adolf Loos in Vienna, while as a member of the Dutch de Stijl group he had sought to develop an architecture of free-flowing spaces informed by film-making and installations that would later culminate in his Endless House, exhibited at the Museum of Modern Art

Fig. 4. *Alvar Aalto, sketch of St Mark's and Piazzetta dei Leoncini seen from the Mercerie, 1924 (Alvar Aalto Foundation)*

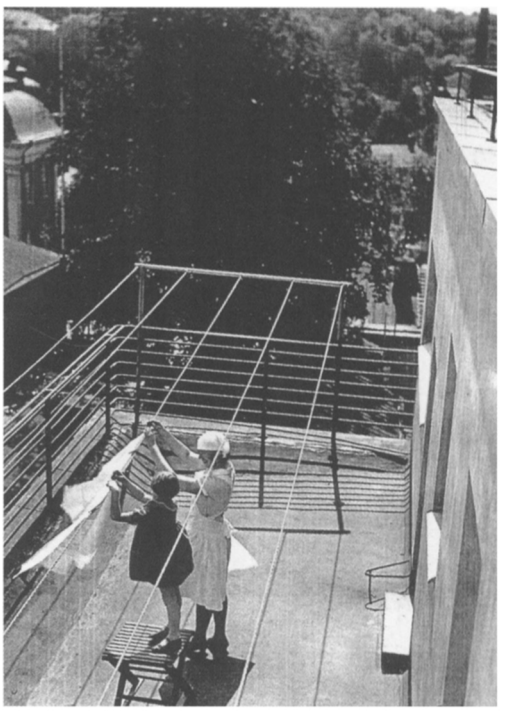

Fig. 5. *Aino Aalto, photograph of Turun Sanomat roof terrace, designed by Alvar Aalto, 1928–30 (Alvar Aalto Foundation)*

Fig. 6. *Alvar Aalto, Finlandia Hall, Helsinki, 1962–75. View from east in 2009 (Author)*

(MoMA) in 1959–60. At Columbia, Kiesler undertook to re-examine and redesign standard tools and building techniques in order to find appropriate and economical design solutions. He attacked what he saw as the rigid pseudo-functionalism of modernism, using expressive diagrams and images to develop a theory of 'correalism' in which interacting concepts, people, objects and space could inform each other and evolve into constantly improving types (Fig. 7).[65] This approach once again chimes with Alvar Aalto's past, and particularly with his grandfather, Hugo Hamilkar Hackstedt (1837–1909), a forester who from 1867 was the head of Finland's first Forestry Institute at Evo. As Göran Schildt notes, Alvar Aalto kept a patent drawing of a repeater rifle designed by his grandfather at home, the exquisite mechanism of which, although brutally functional, can in some ways stand as a reminder of his own work: a precise form that is an outcome of an attendance to its constituting contingencies (Fig. 9).[66]

By the late 1930s it is possible to identify an 'artistic' approach in Alvar Aalto's attitude to design, close to that of the 'designer' advocated by Herbert Read (1893–1968). Moholy-Nagy again offers a link. He knew Read from at least as early as 1933, when he helped to procure the illustrations for Read's *Art and Industry* (1934) and chose one of Aino and Alvar Aalto's experimental wood reliefs as the dust-jacket (Fig. 8). Read, like Alvar Aalto, described himself as an anarchist, and again like Alvar Aalto, he held a belief in the ability to influence industrial standards through an argument related solely to use rather than to profit. In *Art and Industry* Read proposed to bring about new aesthetic standards in industrial production through the artist working in industry; and he asserted that while society would establish what was needed, and industry would furnish the means, the key to the creation of new standards was the 'unconscious' process of the artist. Correspondingly, Alvar Aalto expressed his confidence in 'my belief that this preliminary laboratory phase should be as free as possible, often actually free from utilitarian ends, for the desired results to be attained'.[67]

Although neither Read's nor Alvar Aalto's approach possessed any obvious methodology or binding procedure, they both believed that an artistic process could promise a diversity of output while accommodating a unifying purposive intention. Read wrote of 'the autonomous mental activity that is constantly at work transforming the multiplicity of visual impressions into apprehensible unities, forms that intuitively reflect our feelings'.[68] For Alvar Aalto, as for Read, these apprehensible unities were the loss that society had been striving to recover since the Renaissance through the work of artists. It was in relation to this that Read made an idiosyncratic translation of Alberti's remark, '"il bene e beate vivere" (a serene and happy life) where *bene* and *beate* are indissolubly linked', and from his post-war 'Viaggio in Italia' onwards that would form a central part of Alvar Aalto's undertakings: 'A square, having perfect proportions, where the poorest man can live, is a better solution than a luxurious building.'[69]

Achieving such ethical and aesthetic unities is easy to comprehend in an unconsciously evolving vernacular, but less so in the context of industrialized culture where it falls to the individual designer to form an artistic process to bring it about. This situation led Yrjö Hirn to admonish the 'intellectualistic [*sic*] illusion that every artistic representation has something to teach us about the essential nature of the things represented'. Hirn stated that it was unlikely that a direct correspondence could ever be reached between the artist and modern society, and instead proposed that only 'poetical

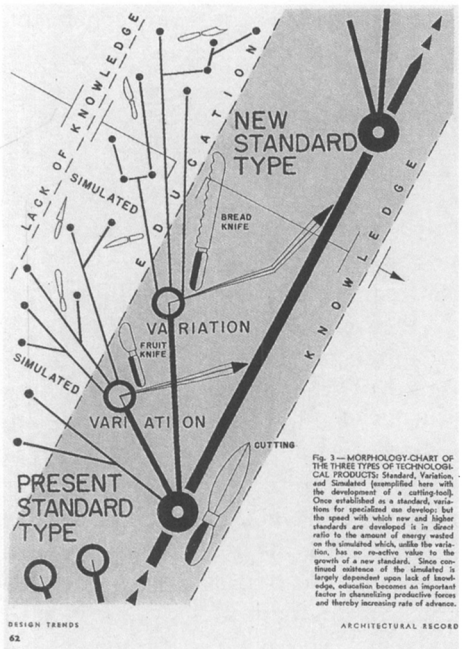

Fig. 7. *Frederick Kiesler, Correlation, 1937* (Architectural Record)

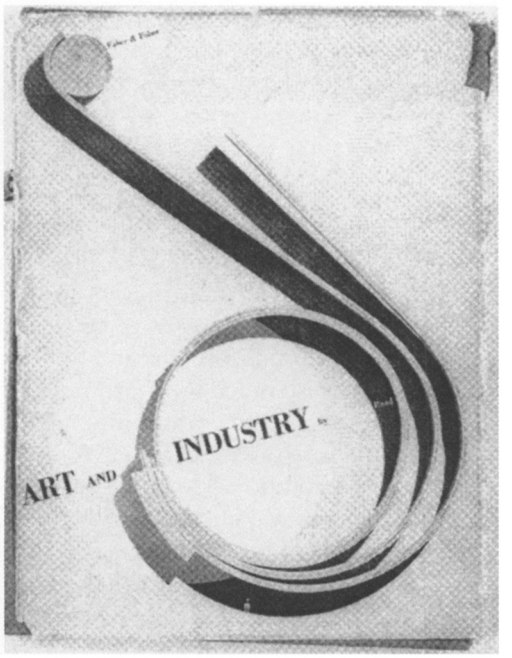

Fig. 8. *Herbert Read,* Art and Industry, *(1st edn London: Faber & Faber, 1934)*

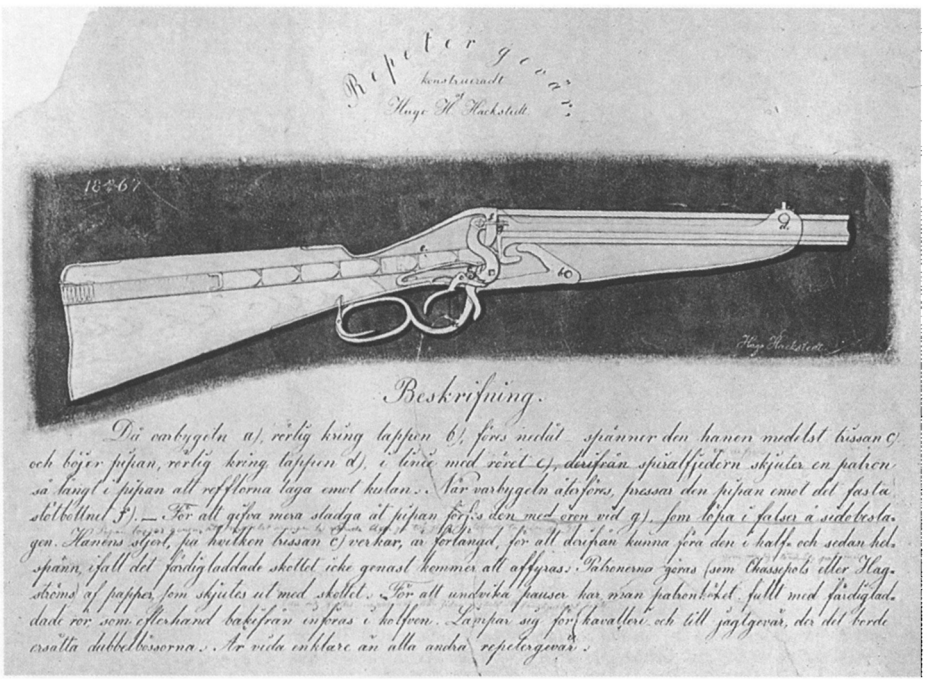

Fig. 9. *Hugo Hamilkar Hackstedt, patent drawing for repeater rifle, 1867 (Private collection)*

truthfulness' — the sincerity — of a work of art could be its measure. This conclusion would later lead to Alvar Aalto citing Hirn when referring to his feeling that artistic creativity was an erotic experience.[70]

PLAYING

Alvar Aalto's praxis therefore not only attempts to crystallize an architectural form that resolves contextual issues, but to infuse it with the 'flow of purely human feeling'. Working pragmatically, and with various phenomena at the same time, his play necessitates invention and allows for the myriad causalities and possibilities that contribute to an environment to be considered, be they visible constraints or invisible values such as 'humanism and materialism' or 'art and technology'.[71]

Alvar Aalto also noted that harmony only emerges over time, 'just as it takes time for a speck of fish spawn to mature into a fully-grown fish'.[72] Design, like play, is therefore evolutionary. As a saying of the Alvar Aalto atelier — 'never compose' — implies, there is only ever one solution that can emerge, or 'crystallize', to fulfil precisely a particular aesthetic and practical purpose.[73] Jaakko Suihkonen, one of the Aalto atelier's site architects for the Seinäjoki library (1959–65) has noted that, 'Aalto never made alternative designs or sketches out of which the best would have been chosen. Instead he used the one design which was then developed.'[74] This echoes, albeit far less dogmatically, Moholy-Nagy's citation of the philosopher Raoul Francé (1874–1943) that, 'There is for everything, be it a concrete thing or a thought, only one form that corresponds to the nature of that thing.'[75]

This approach was central to Alvar Aalto's critical skill, or rather habits, when undertaking a design. At the Baker House Dormitory a sequence of sketches explore the site in relation to the programme, and the building evolves 'in idea' almost exactly as it was built; the design forms a poetic and purposeful response to the Charles River, the MIT campus and its students, while at the same time pragmatically attending to the need to minimize the need for costly lift cores (Fig. 10). The formal social spaces of the building, including a common room and dining room, open off a single entrance hall from which two great staircases lead up to generous landings and thence the study rooms overlooking the river; Alvar Aalto chose this layout so as to maximize the range of social occasions and potential encounters between students that he saw as critical to university life (Fig. 11). However, to impress upon the client body that he had 'empirically' evaluated all potential scenarios, Alvar Aalto also drew up nine 'alternative designs', mainly variants of lamellar blocks and plinths that parody the methods of any number of his more functionalist contemporaries and mock mechanistic methods of evaluating different solutions (Fig. 12). As Veli Paatela, the site architect for Baker House, recounts, 'It was Alvar's tactics to present it like he did. Had he presented a curvy building to begin with, it would not have passed in the building committee.'[76]

This is a suggestive, open-ended design process underpinned by continuous iteration in which ideas come about through the process itself. The process might at times be kaleidoscopic, but the searching and deduction in relation to the purposive intention of the project displaces any notion of collage as intention, even if the juxtapositions of Alvar Aalto's compositional strategy do suggest the influence of his earlier collaboration with Max Ernst (1891–1976) and his knowledge of Georges Braque's (1882–1963) synthetic

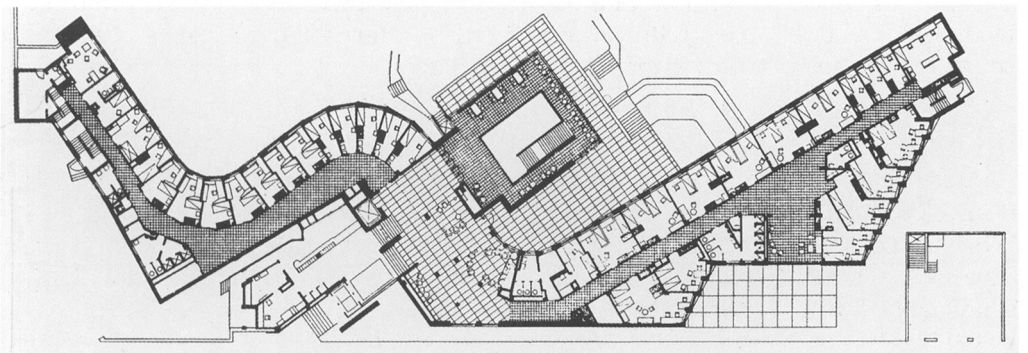

Fig. 10. *Alvar Aalto, Baker House Dormitory, MIT, Cambridge, MA, 1946–49. Plan (Alvar Aalto Foundation)*

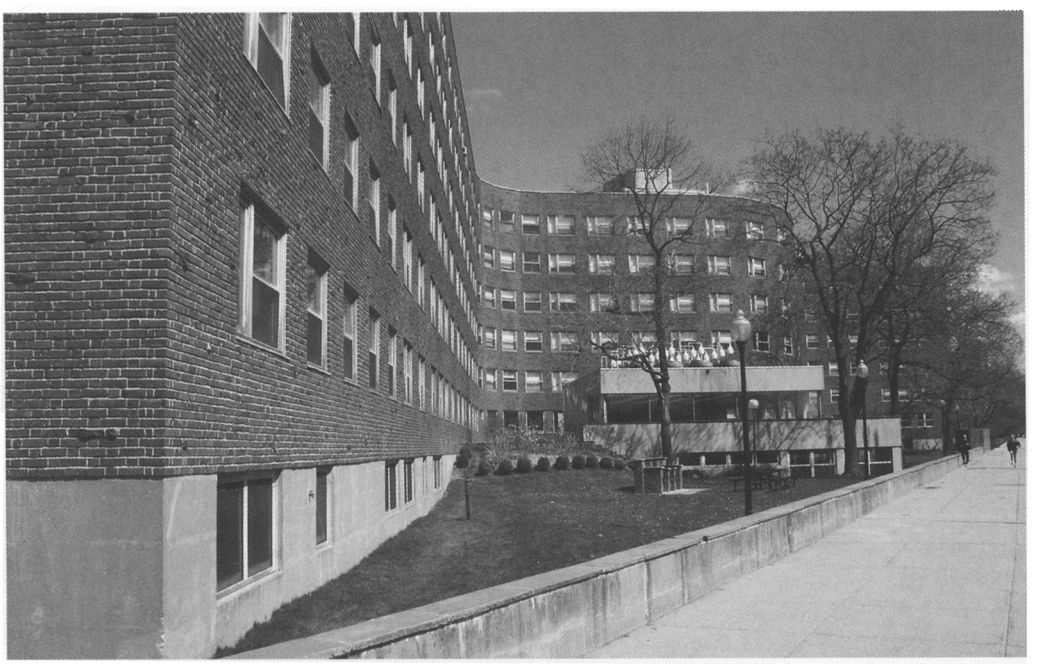

Fig. 11. *Alvar Aalto, Baker House Dormitory, MIT, Cambridge, MA, 1946–49. View of social areas nestling in the curvature of the student accommodation (Lee Stickells)*

Cubism.[77] It is an artistic process that availed itself of the play impulse through permitting materiality, type and the *schema* to participate in what Hirn termed 'the slow construction of the narrative'.[78]

Alvar Aalto's description in 'Architettura e arte concreta' of the design process for the Viipuri Library (1928–35) makes clear that emancipated knowledge can only become familiar, and thence intuitive, over time:

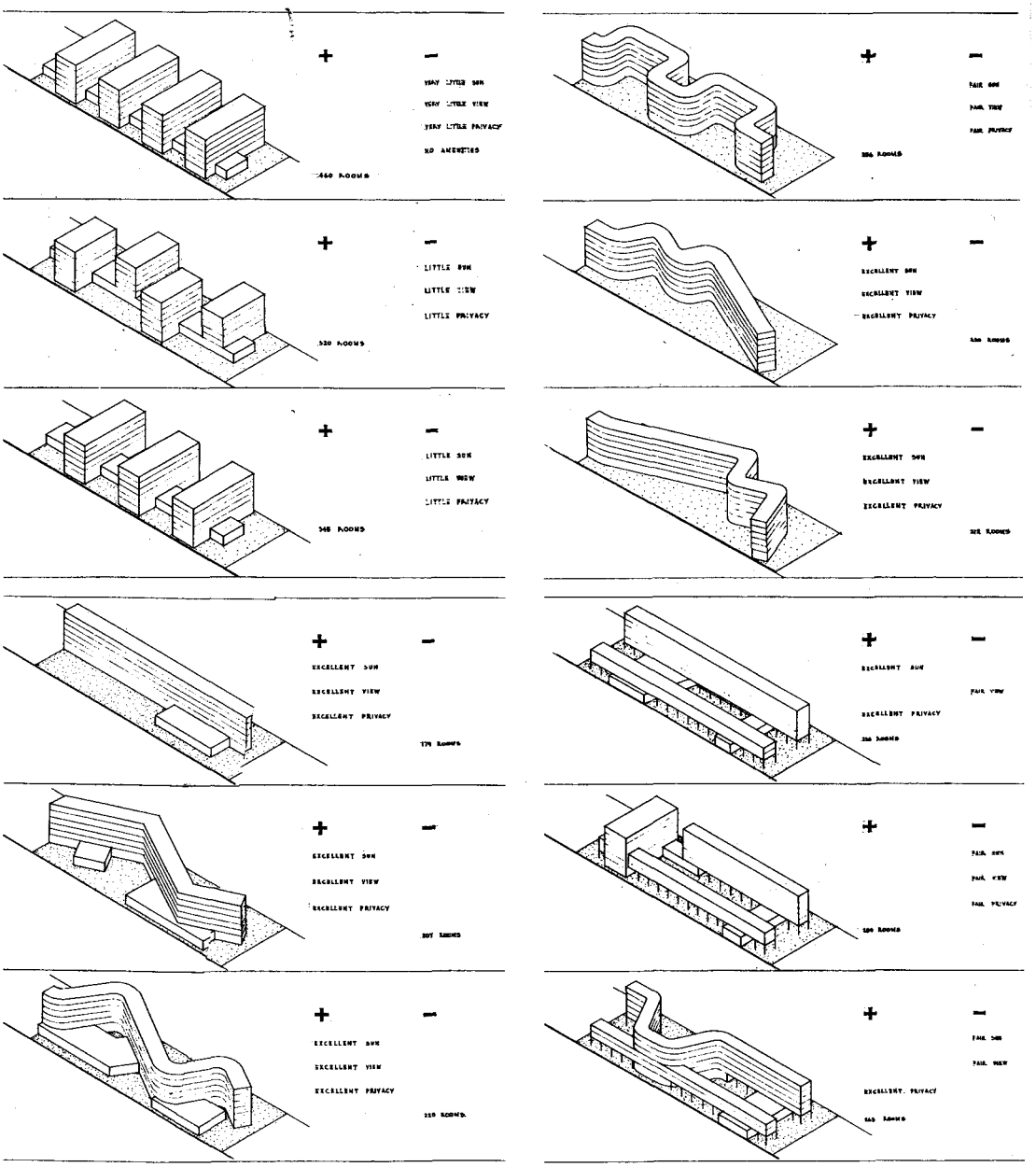

Fig. 12. *Alvar Aalto, 'empirical studies' for Baker House Dormitory, MIT, Cambridge, MA, 1946–49. This drawing is one redrawn for later publication, increasing the number of variants from 9 to 12 (Alvar Aalto Foundation)*

> this tangled web [...] cannot be straightened out rationally or mechanically [so as soon as] the feel of the assignment and the innumerable demands it involves have sunk into my subconscious [I drew] quite childlike compositions, and in this way, on an abstract basis, the main idea gradually takes shape [...] to bring the numerous contradictory components into harmony.[79]

Ideally a design process would follow initial observations and iterations with a prolonged period of respite, and only then would the final artistic crystallization of the project take place in a moment of intense application.

This praxis of reflection and action was enabled fortuitously by the flexibility of the Finnish construction industry and of Alvar Aalto's clients, as well as by the many inadvertent delays that Finland's small-scale and, until the 1970s, relatively non-industrialized building industry, contributed to the execution of projects. It is such a combination of slow pace and serendipity that is evident in numerous works by the Alvar Aalto atelier, including the Viipuri Library.[80] For instance, the Helsinki House of Culture's final free-form was achieved in a three-month burst of design work in early 1955, following an interregnum of nearly three years after the design of the initial Euclidean concept in 1952 (Fig. 13). Then, in late 1956, when the building had been on site for over a year and the main auditorium and office blocks were already completed, the sixty-metre-long timber and copper canopy was conceived. Now seen as a critical anchor of the composition as it skims along the brow of the hill and visually binds the two blocks together, this extemporization was prompted by Alvar Aalto's recognition of the weakness of the two buildings' distinct forms in relation to the cityscape and to the topography (Fig. 14).[81] Similarly, at the Finlandia Hall (Fig. 6), the hanging staircase that is so vital in binding the outcrop of the auditorium roof to the plinth of the main elevation was only arrived at after the building was onsite:

> Heino Paanajärvi: 'It's a brilliant solution. The façade is very long and the staircase breaks it up. A solution that was born out of necessity.'
> Tore Tallqvist: 'Maybe he would have thought of something else.'
> Heino Paanajärvi: 'You don't think of things unless you are under pressure, unless you have a motive.'
> Tore Tallqvist: 'I remember the day the news spread in the office.'
> Heino Paanajärvi: 'It was like a revolution.'[82]

Materials were even more a condition of intuition, without which Alvar Aalto could not form anything; thus he wrote, 'the word *materia* [...] translates purely material activity into the related mental process [...] Not only do sketches and superficial similarities of form influence each other, but *materia* does, too, through a mental confrontation with the selected material'.[83] The relationship that developed between Aino and Alvar Aalto's material play and design was symbiotic; the form of a building might derive from material play, but equally the resultant form might necessitate the invention of a new kind of material component.[84] Aino and Alvar Aalto began their first-hand manipulation of materials in the late 1920s, a time when, as Pirkko Stenros, a designer at Artek, has described, Aino and Alvar Aalto were 'boiling some bits of wood' in a basement workshop in Muurame, near Jyväskylä.[85]

Initially, the Aaltos' experiments were an attempt to translate the lightweight, sprung metal furniture of Mart Stam (1899–1986) and others into wood, and it can be assumed

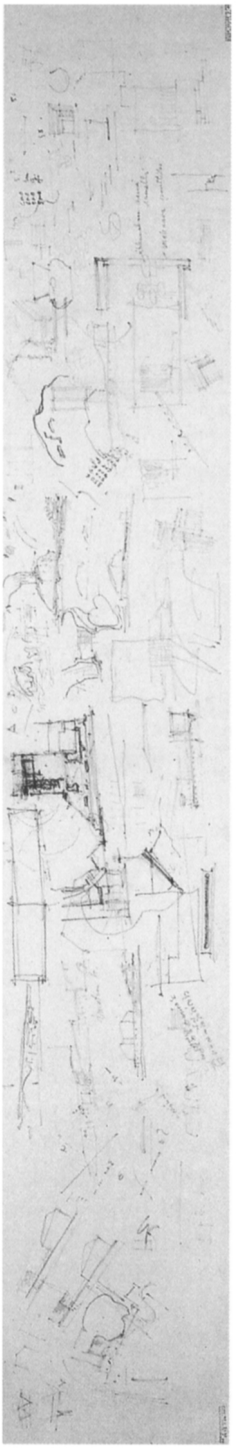

Fig. 13. *Alvar Aalto, sketches for House of Culture, Helsinki, 1952–58* (Process & Culture, *ed. Harry Charrington*)

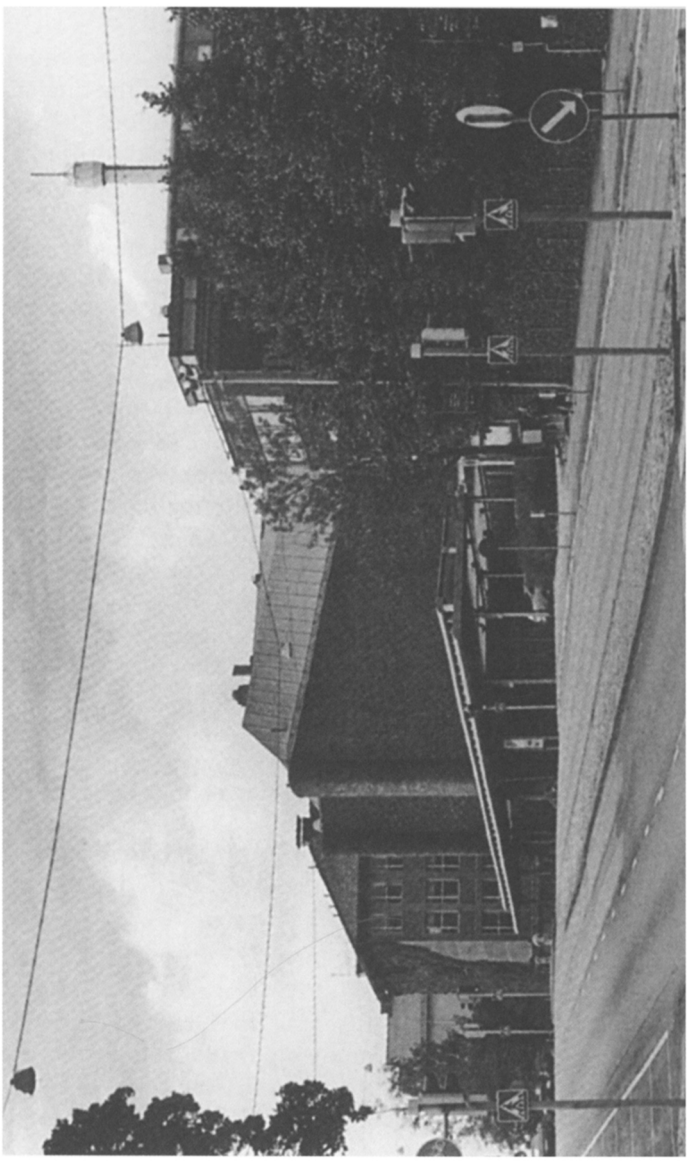

Fig. 14. *Alvar Aalto, House of Culture, Helsinki, 1952–58. View from Sturenkatu in 1998 (Author)*

that Aino Aalto's skills as a carpenter, developed through working with the Helsinki master-carpenter Niilo Wilander during her student days, were critical in this.[86] However, following their contact with Moholy-Nagy, a more rigorously experimental approach emerged. This followed the precepts and examples that Moholy-Nagy had set out in *Von Material Zu Architektur* (1930), a book that he gave to the Aaltos either later in that year or during his visit to Finland in 1931. This book includes time and motion studies and Kurt Schwitters' *Merz* collages, as well as student work from Moholy-Nagy's and Albers' *Vorkurs* at the Bauhaus. Moholy-Nagy and Albers declared that this course was intended 'to open eyes [...] Any artistic creation must involve a consideration of the specific potentialities of its medium if it is to achieve an intrinsic, organic quality'.[87] Following their move from Jyväskylä to Turku in order to supervise the construction of the South-western Finland Agricultural Co-operative (1927–28), the Aaltos met the master-carpenter Otto Korhonen (1884–1935) and began to make a sequence of timber reliefs and furniture prototypes in his Huonekalu– ja Rakennustyötehdas Oy workshops. These works relate Moholy-Nagy's approach to the specificities of their Finnish location and to all aspects of wood and its growth processes. They also show how wood's formal and material qualities might be adapted and developed through the use of modern glues and laminating techniques. The outcome would be their series of bentwood furniture (Figs 3 and 8).[88]

Collaboration also structured the design of the Aalto atelier's lamps. These were made together with the applied artist Paavo Tynell (1890–1973) and his company Taito Oy, and then, from 1952 onwards, by the lamp-maker Viljo Hirvonen and Valaistustyö Ky. Kaarlo Leppänen, a member of the Aalto atelier responsible for many of its furnishings, as well as its building projects, recalled:

> It was another tradition, that a small workshop made lamps for Alvar, starting from the prototype. The first versions were always horrible and clumsy, but when he turned up with his prototype and displayed it on Alvar's desk, Aalto would change something. This is how the design process should work, rather than finalising designs on paper[89] [Fig. 15].

Although Aino and Alvar Aalto shared the same aesthetic preoccupations as Moholy-Nagy and Albers, and the same ideal of discovering objective values and syntheses through spontaneous and free play, what made their reliefs radically different, and in many ways more revealing, was the fact of their collaboration with craftsmen, such as Korhonen and Hirvonen. The *Bauhäusler*, with their determination to create an industrial aesthetic, had excluded craftsmen from their workshops, and hence had severed their students from a tradition of craft.[90] Not so Aino and Alvar Aalto, who had an artisanal factory workshop at their disposal, and the careful manufacture and innovations of their work owes as much to its skills as to their own intuition. It was Korhonen who ascertained that birch was the ideal timber for the furniture, and it was his death in 1935 that marked an end to Aino and Alvar Aalto's inventiveness, rather than refinement, in furniture design.[91] This ease in collaboration points to the inventive freedom that underlay Alvar Aalto's way of working; play could be individual and to some extent reflective, but it could also be collaborative and more overtly experimental. Without recognizing it, Alvar Aalto had arrived at the 'laboratory ideal' that he would then spend the next ten to fifteen years trying to persuade universities and governmental departments to set up under his direction. This was evident to Lawrence Kocher (1885–1969) who wrote in his catalogue essay for the Aalto atelier's 1938 retrospective at MoMA in New York:

Fig. 15. *Alvar Aalto, Artek lamp no. A335, with the original jig from Valaistustyö Ky (Author)*

> after the first invention, imagination supplies intermediate steps. It is then that reason and science enter. They check and control the direction of intuitive thought [...] follow up [...] intuitions, using the laboratory and other technical means to control and develop concepts that at first were merely 'felt'.[92]

In formal terms, the reliefs and furniture also suggested a language of moulded space with a plasticity corollary to the shapely form that Paul Frankl (1878–1962) identified in the Baroque: 'The tectonic shell, which forms a continuous boundary for the enclosed spatial form, a skin so to speak, is so thoroughly modelled that it is possible to sense tactually everywhere beneath this skin the solid skeleton with all its joints.'[93] Alvar Aalto's Finnish Pavilion at the New York World's Fair (1939) was a timber lining suspended from an armature, which retained the communicative modelling, but not the structural integrity, of the Aaltos' furniture. While Alvar Aalto typically denied it, these curvilinear forms reappear in other projects as well, where they are not only reconfigured in terms of scale, but also in intention. In the Savoy vase (1936), the plan of the Baker House dormitory, and the auditorium wall of the Essen Opera House, the use of the same trope is deployed as a poetic response to the purposive intention of the project: respectively, the bunching of flowers within the curves of the vase, the desire to give each student an oblique view of the Charles River, and the suggestion of a ruined ancient Greek theatre (Figs 16, 10, 17).

Play was suggested by the material, but materiality was also literally malleable to the processes of play, as the Alvar Aalto atelier's manipulation of the flexibility and fluidity of reinforced concrete construction emphasizes. The structural engineer Aarne Hollmén in Magnus Mallberg's engineering office, who collaborated with the Aalto atelier from 1962 onwards, noted that:

> because these are in-situ structures — the compositional qualities of steel and concrete being very flexible — you can create shapes out of it, you can remove columns, you can

> hang structures from walls above. With pre-cast concrete elements that wouldn't be possible. So the use of in-situ reinforced concrete enabled Aalto's architecture.[94]

The National Pensions Institute in Helsinki (1948–58) sits on a triangular plot and its concrete frame is simply cut away, or reconstituted wherever necessary — in relation to the nature of the site, inhabitation, hierarchies of space — so that in all there are eight different formations of columns and grids. There is no concern for the emblematic grid of modernism, for, as Tide Huesser has said, 'When making a dress you do not cut around the flowers' (Fig. 18).[95] As the Aalto atelier's work evolved during the 1950s, the relationship between structure and surface became increasingly ambiguous, as at the House of Culture, where the brick skin of the auditorium is freed entirely from the concerns of structure so as to become a material veil (Fig. 19). These later works are compositions of freely disposed surfaces in which, as Harry Mallgrave says of Gottfried Semper, the intention was 'no longer the construction of an edifice, but rather the masking of constructional parts in a dramatic conundrum or artistic play'.[96]

It is the continual re-contextualization of its lissom 'line', not the line itself, which exemplifies Alvar Aalto's application of style, as well as his concern with style as a syntax that allowed him to work freely. In tracing his career there is a sense of him as a skilful observer gleaning from the world around him, sceptically assimilating and lovingly remaking it. As the aforementioned Baker House site architect, Veli Paatela recalled in 1946:

> Once when we were on a beach on Cape Cod, by the Atlantic, Alvar and I and were going to go for a swim, Alvar suddenly stopped. The waves had washed a few corals onto the sand and Alvar stood there and said: [...] 'I'm filming it into my head. I might need this shape one day'. Form was crucial to him, whether it displayed itself in glass, a lamp or wood or whatever[97] [Fig. 20].

The other formative influence on Alvar Aalto's work in *materia* was that of his *in pasto* paintings, carried out from the 1940s onwards. These paintings possess an architectural concern with materiality and depth of modelling and evoke what he called 'the mental image and that of [its] material implementation'.[98] Unlike his earlier figurative paintings of the 1920s, these paintings were not autonomous works of art for public show, but an integral part of his architectural conception:

> I am moving towards a manner of working that closely resembles abstract art. I draw according to instinct, not architectural syntheses but compositions that may be even childish at times, and arrive in this way, from an abstract basis, at a main idea, a kind of general substance.[99]

Alvar Aalto wrote of how freeing himself from the single vanishing point of painting had freed his architecture, and the paintings exhibit three major themes: a treatment of the ground and the paint as topological strata and textures, an apparently free but measured assemblage of expressive shapes, and a narrow colour, hue and tonal range (Fig. 21). These paintings are usually described as abstract, but should more accurately be termed as abstracted morphological and topographic studies; this is certainly a perception which renders the paintings more convincing, and one according to which they exude the empathetic naturalism of Alvar Aalto's architecture.

A recurrent compositional theme is the bringing together of independent shapes in a dynamic formation. Some of these suggest the fan-plan of a number of the Aalto

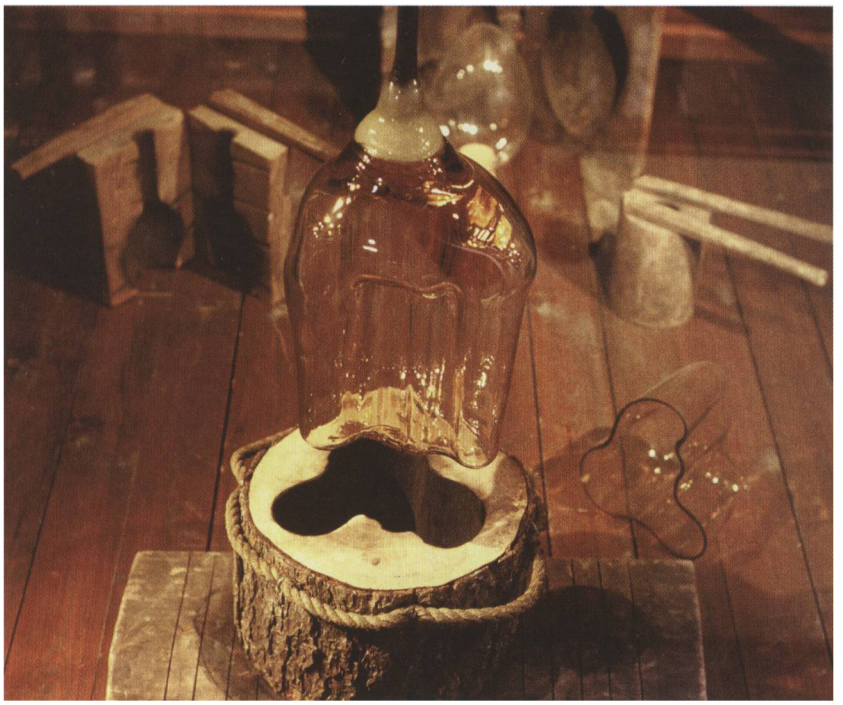

Fig. 16. *Alvar Aalto, Savoy Vase, 1936, and original wooden mould, Iittala Glass Museum (Author)*

Fig. 17. *Alvar Aalto, Essen Opera House, 1959–88. Auditorium model (Author)*

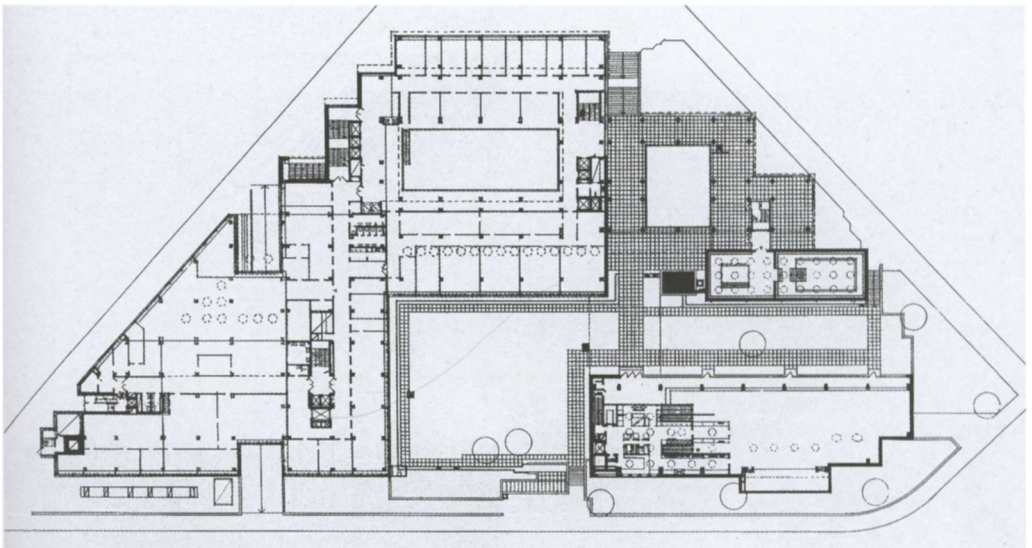

Fig. 18. *Alvar Aalto, National Pensions Institute, Helsinki, 1948–58. Plan (Alvar Aalto Foundation)*

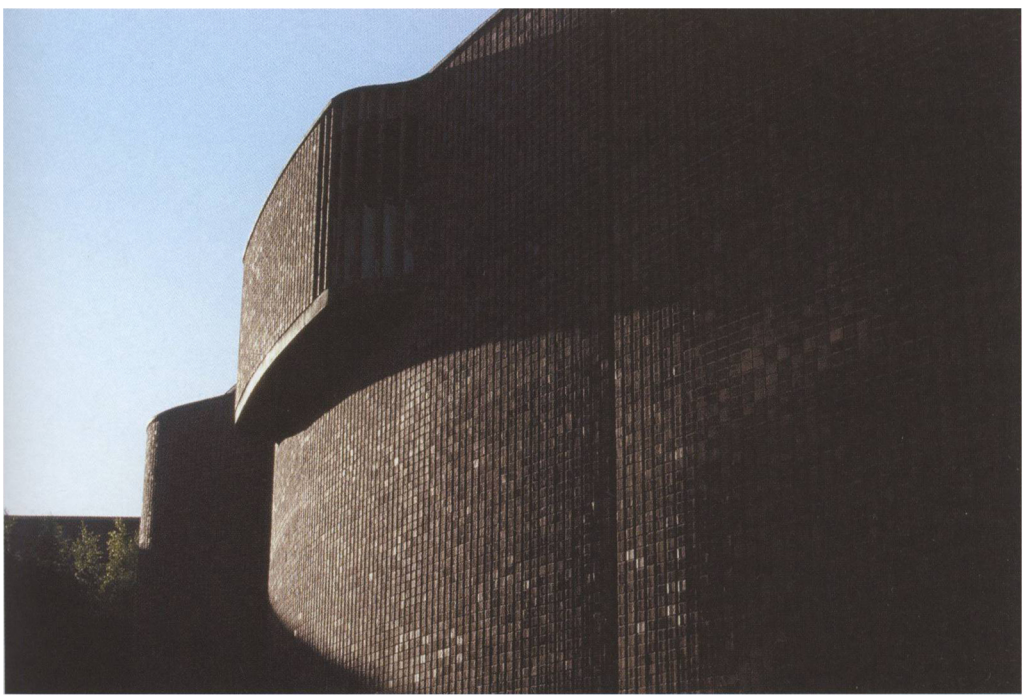

Fig. 19. *Alvar Aalto, House of Culture, Helsinki, 1952–58. View of auditorium in evening sun (Author)*

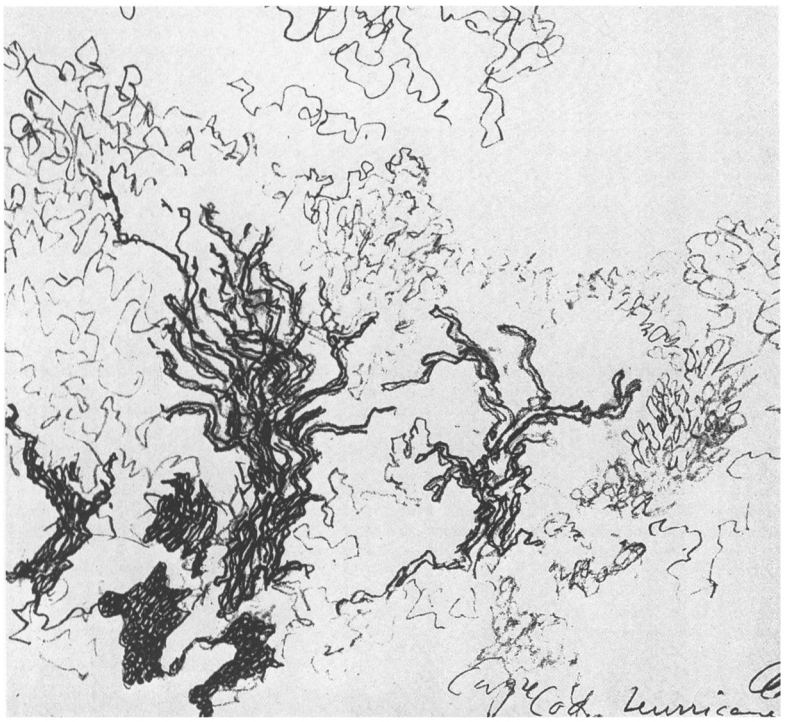

Fig. 20. *Alvar Aalto, sketch of trees in hurricane, Cape Cod, 1947 (Alvar Aalto Foundation)*

Fig. 21. *Alvar Aalto, untitled painting, 1949 (Private collection)*

atelier's buildings, while others adopt a unified tonal field on which blocks of modelled colour jostle or rest against one another, overlap and reciprocate with one another; a poise of free association is characteristic of the coming together of buildings, such as at the Malmi Crematorium (1950) or the Seinäjoki Centre (1951–88, Figs 22 and 23). These paintings possess a mannerist structure in which the spectator's memory and 'personal content' fill in the gaps of suggestive compositions; as Alvar Aalto wrote in relation to the design of the Villa Mairea, 'Modern painting may be on the way to developing a set of forms with the capacity to evoke personal experiences in connection with architecture, superseding architectural ornamentation.'[100] Technically, their most striking quality is their materiality; paint is treated as a three-dimensional material capable of all kinds of manipulation — layering, sculpting, smoothing and so forth — qualities that were exaggerated by the thick application of paint with a palette knife. In later paintings Alvar Aalto mixed sand into the oil paint, a technique that Heikki Hyytiänen suggests derives from the work of the artist Pauli Vuorisalo (b. 1944).[101]

As a student, Alvar Aalto had shared an interest in the sparse harmonies of Japanese prints, together with those of Hélène Schjerfbeck (1862–1946) and Eero Nelimarkka (1891–1977). He also socialized, while working as an art critic for the Helsinki *Iltalehti* newspaper, with members of the Septem and Marraskuu groups of artists that emerged under the guidance of his intellectual and artistic mentor Sigurd Frosterus (1876–1956), above all Tyko Sallinen (Fig. 24). Frosterus appealed for a 'scientific' understanding of colour in which, as colours only mix on the retina, so they should be placed side by side on the canvas, unmixed.[102] This was further reinforced by Aalto's friendship with Fernand Léger and, again, Moholy-Nagy's exploration of the individual's 'biological integration' — that is, sensory experience — as the basis of art.[103] Indeed, the Aalto atelier's manipulation of form, colour and contour is in many ways close to Moholy-Nagy's kinetic constructs centred on the occupant and their movement, a structuring of space as a continuum that was also a feature of Frederick Kiesler's de Stijl 'City in Space' installation at the Paris Exposition des Arts Décoratifs et Industriels in 1925.

Alvar Aalto's paintings of the 1940s and 1950s explore a palette of ultramarine, dark blues, ochre and broken whites which, although juxtaposed with black and greys, are contained within a tonal range that brings together even the most jarring forms: qualities familiar in later compositions.[104] Equally, Alvar Aalto made use of a complementary or contrasting counterpoint surface or colour to enlarge an architectural element, or to break up a volume and impart a scale or dimension (Figs 25 and 27). White paint dematerializes masonry and in-situ concrete to set a scene for the contained activities of an interior, within which a lining of warmer and more tactile materials mediate the occupant's contact with the structure and the environment. Sparsely distributed, these are carefully crafted, as with the bronze hand-rails set against the material austerity of the House of Culture, or the skinny curvature of the black-painted hand-rail wrapped around the concrete pillar of the Tiilimäki atelier (Fig. 26).

The return to painting also affected Alvar Aalto's sketches. As late as the Villa Mairea (1936–39), surviving sketches are relatively crude and uncommunicative of material and spatial qualities, iterations being more or less a mechanical notation of Alvar Aalto's

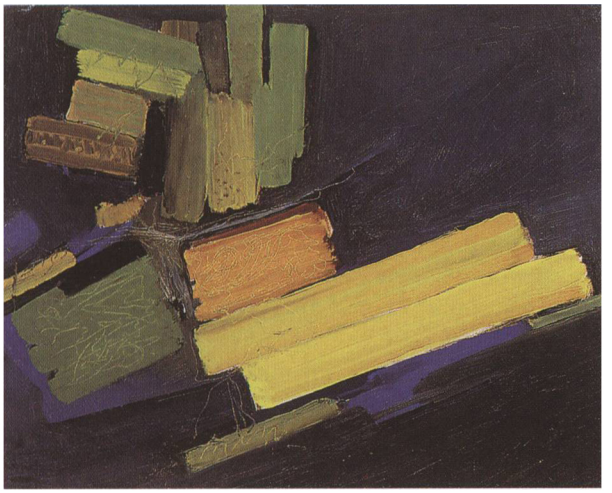

Fig. 22. *Alvar Aalto, painting, 1946–47 (Private collection)*

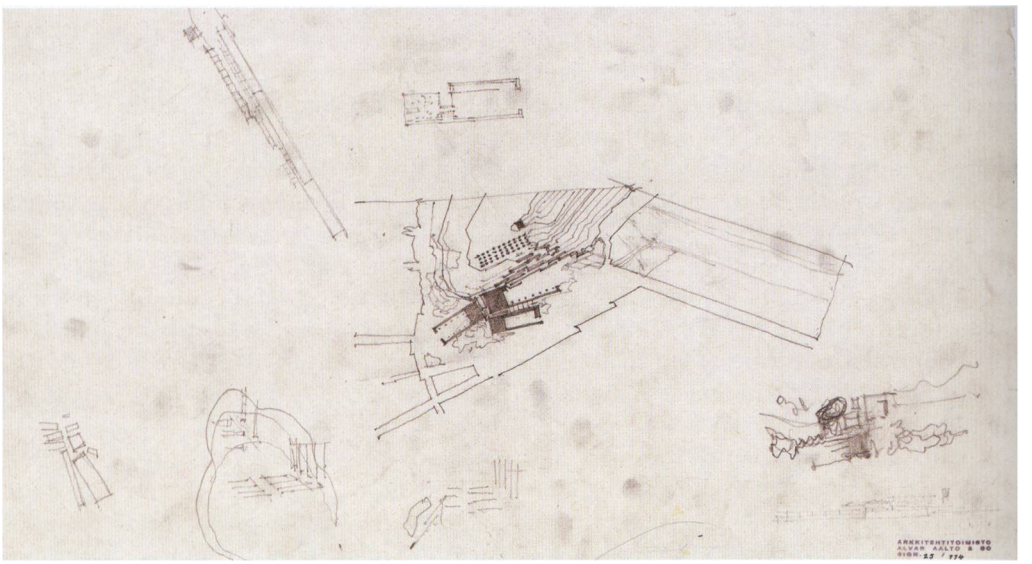

Fig. 23. *Alvar Aalto, sketch for Malmi Crematorium, 1950 (Alvar Aalto Foundation)*

change of mind. Now, with the return to painting, sketches appear almost identical in their texture and freedom to Alvar Aalto's observational and atmospheric travel sketches, so that in some instances it is almost impossible to discriminate between the two (Figs 28 and 29). Soft Koh-i-noor 6B pencil allows for sensitivity to the possibilities of line weight, and Alvar Aalto's thick, uneven line unifies building and landscape form with materials and plants implied through hatching and silhouette. Mass is invoked by the simple act of pressing harder, and the forms of buildings are built up through the gradual building up of lines. At times marks extend to include the contours of people's movement (Fig. 30).

Fig. 24. *Tyko Sallinen,* Wet Rain *(*Spring Rain*), 1911 (Private collection)*

What is striking in these drawings is their sense of completeness while avoiding too early a commitment to a single line. Alvar Aalto elucidates form from a palimpsest of traces that bring to mind Giacometti's vibrating lines, and allude to the work of Borromini and other Mannerist and Baroque architects whose drawings build up layers of soft lines to suggest a sculpted and voluminous presence. Through constant iterations, and an ability born of years of habit, the ambiguities of soft pencil line impart the critical dimensions of a project, so that realized buildings differed little from the initial sketches. Ilona Lehtinen, the site architect for the Nordens Hus in Reykjavik (1962–68) has pointed out that 'when you received a sketch from Aalto and started drawing it out with a ruler, you found most things that you needed to know in the sketch'.[105]

Alvar Aalto's play is perhaps most vivid in the surviving 'stream of consciousness' drawings that can be found in the archives of the Alvar Aalto Foundation (Fig. 13). What is intuited in one drawing is immediately checked from another point of view, fragments inform a whole, suggestions evoked in three dimensions are tested in two dimensions, scale changes from the smallest diagram to the most precise detail, and so on and so forth. This is what Marc Treib has called 'the ricochet aspect of the creative process', with as many dead-ends as free paths, a process born of an understanding of what Barry Gasson sees as 'the most difficult thing for the designer to accept, that that which is being designed, also has something to say'.[106]

Fig. 25. *Alvar Aalto, Rautatalo, Helsinki, 1951–55. Piazza in 2010 (Author)*

Fig. 26. *Alvar Aalto, Studio, Helsinki, 1955. Handrail and pillar in atelier in 2005 (Author)*

Fig. 27. *Alvar Aalto, Studio, Helsinki, 1955. Drafting studio in 2010 (Author)*

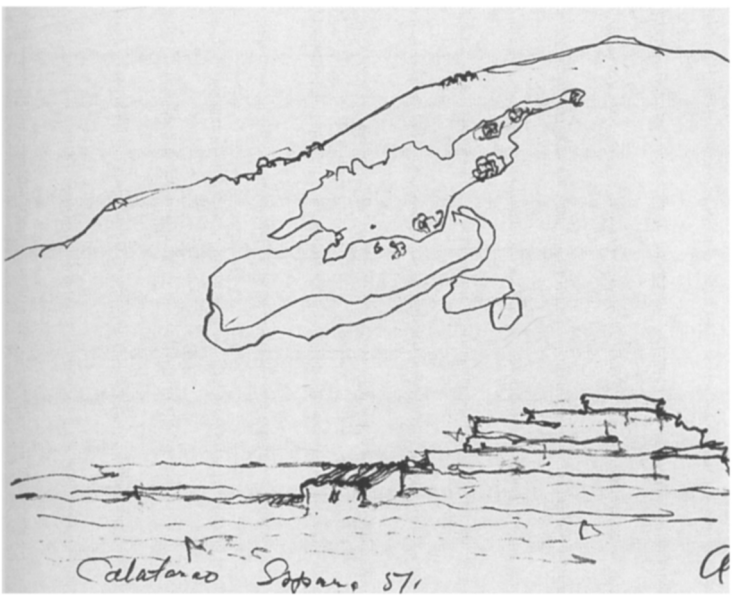

Fig. 28. *Alvar Aalto, sketch of Catalanao, 1957 (Alvar Aalto Foundation)*

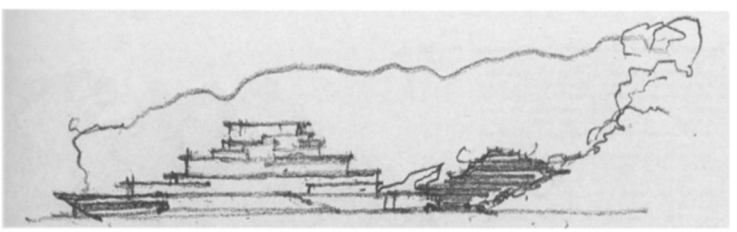

Fig. 29. *Alvar and Elissa Aalto with Jean-Jacques Barüel, sketch for North Jutland Art Museum, Aalborg, 1958–72 (Alvar Aalto Foundation)*

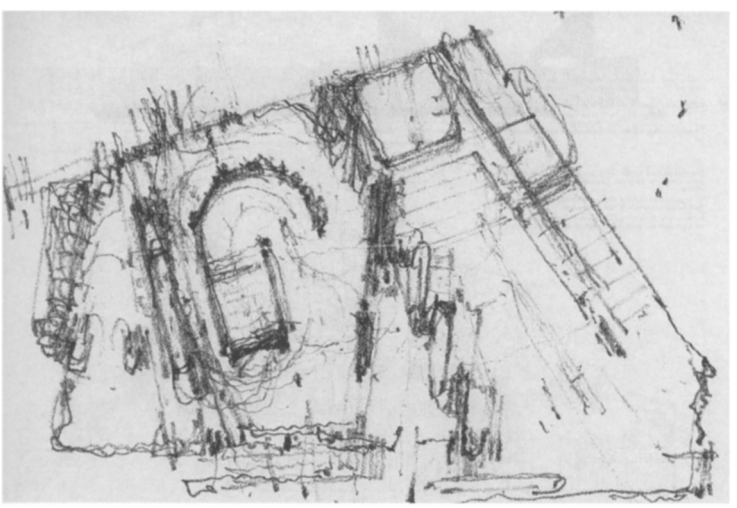

Fig. 30. *Alvar Aalto, Finlandia Hall, Helsinki 1962–75. Sketch of garderobe and staircase (Alvar Aalto Foundation)*

CONCLUSION

At its simplest, Alvar Aalto's playfulness was a way of getting things done, a way to, in Goethe's words, 'go outside oneself', take into account all factors and possibilities, and come up with an appropriate solution. An inventiveness and care is present in Alvar Aalto's own argument that:

> The frequently despised philosophy of doubt is an absolute prerequisite for anyone wishing to contribute to culture, assuming that this doubt is transformed into a positive force. For criticism conveys the message 'I do not follow the tide', and on the highest plane doubt can be transformed into its apparent opposite, love in a critical sense, love that endures.[107]

The art of the Aalto atelier was to be an almost scientific — or, more accurately, alchemical — process of discovery, achieved through an instinctual consideration and experimentation with the contexts that formed a design, and through the evolution of that design within those same parameters. While initiated by causal response and a determining intention, this performance was non-teleological, highly adaptive and, with no *a priori* concern as to what a building should look like, inherently reflexive with the range of its situation. As long as this overall ambience and experience was maintained, functional needs could be accommodated without any concern that attention to them would undermine the purposive intention. In fact, the reverse was the case; through attending to those minutiae of inhabitation so that they were taken for granted, they would not impinge upon, but reinforce the reciprocal environment of the surrounding world.[108]

Grounded by their delicate empiricism (*zarte Empirie*), the sketching, painting, drawing, photographing and making of Aino and Alvar Aalto enabled them to see their observations 'in idea', and then to extend them through image, iteration and experiment to suggest the forms and ambience of a project. In relation to the phenomenological interpretations that some seek in Alvar Aalto's creativity, the inventiveness of the Aalto atelier's work demonstrates the more modest agenda that Maurice Merleau-Ponty set out for phenomenology in parallel to the more vaunted quest for essence: 'a philosophy which puts back into existence, and does not expect to arrive at an understanding of man and the world from any starting point other than their own facticity'. To return to the quotation from Alvar Aalto at the head of this article, this might infer that architectural discourse becomes part of the act of designing, rather than solely a commentary on it, that is, a praxis of reflection and action. The Aalto atelier's play is design practised as a restorative mapping of fragments sourced from the world as found, an approach that displays an aptitude for 'both/and', instead of the absolutes of 'either/or'. As Alvar Aalto implied, play is in the manner of a fable, suggestive of, and suggestive to, experience. It is a form of rooted invention rather than of autonomous creation in which 'The artist thus steps out among the people in order to harmonize life with his intuitive ideas, rather than stubbornly maintaining the opposition of art and non-art, which only leads to a sustained tragedy and hopeless life'.[109]

ACKNOWLEDGMENTS

I wish to thank those members of the Aalto atelier who opened my eyes to the habits and skills of Alvar Aalto and the Alvar Aalto atelier during the time I worked there, in particular Elissa Aalto, Sverker Gardberg, Tide Huesser, Marjatta Kivijärvi and Mikko Merckling.

I would like to thank those members of the atelier whose remarks are cited here. These interviews were led by the architect Vezio Nava, himself a member of the atelier, and the site architect for the Riola Church, Bologna (1966–80). Members of the Alvar Aalto atelier were approached through their informal social association, the Alvar Aalto *klubi*, to talk about their experiences working in the atelier. Familiarity and informality were felt to be vital, and the interviews were deliberately constructed as a series of friendly conversations, most often in a small group of former employees in the main atelier of the Tiilimäki studio. I am most indebted to Jaana Kuorinka, who, together with the author, translated the interviews, and to the Suomen *kulttuurirahasto* (Finnish Cultural Fund), whose award of a grant funded their transcription and translation.

I thank the staff of the Alvar Aalto Foundation, in particular Arne Hästesko, as well as the staff of the Museum of Finnish Architecture. Other Finnish architects and scholars to whom I offer thanks include: Arto Haapala, Professor of Aesthetics at Helsinki University; Vilhelm Helander, Emeritus Professor of Architectural History at Aalto University; Rainer Knapas of the Swedish Literature Society in Finland; and Renja Suominen-Kokkonen, Reader in Art History at Helsinki University.

I also thank Andrew Ballantyne, Professor of Architecture at the University of Newcastle, for his thoughts on the concept of the *Umwelt*; Marietta Hösl for translating correspondence between László Moholy-Nagy and Aino and Alvar Aalto; and Judi Loach, Fiona Urquhart and Mark Wilson-Jones for their help in editing this article.

NOTES

1 Alvar Aalto, speech at Jvyäsklylä *Kesäpäivät* (1965), quoted in Göran Schildt, *The Mature Years* (New York, 1989), pp. 273–74 (p. 273).

2 Jussi Valtonen, address at the Opening Ceremony of Aalto University (Aalto-yliopisto), September 2010, http//www.aalto.fi/en/about/history/name/ (accessed on 5 October 2010). Ironically, Alvar Aalto was twice turned down for professorships by the University of Technology, in 1933 and 1935.

3 Wilfred Nerdinger, 'Preface', in *Towards a Human Modernism*, ed. Wilfred Nerdinger (Munich, 1999), pp. 9–27.

4 Alvar Aalto, 'The International Status of Finnish Art' (1962), in *Alvar Aalto in His Own Words*, ed. Göran Schildt (Helsinki, 1997), pp. 276–80 (p. 276).

5 Ibid., p. 276.

6 Göran Schildt, recalled by Professor Vilhelm Helander in private conversation with author, February 2007.

7 Sigfried Giedion, *Time, Space and Architecture*, 5th edn (Cambridge, MA, 1967).

8 Ibid., pp. 620–33.

9 Marc Treib, 'Alvar Aalto at 100', *Journal of the Society of Architectural Historians*, 57 (March 1998), pp. 59–67 (p. 59).

10 J. M. Richards, *An Introduction to Modern Architecture* (Harmondsworth, 1940). For more on this period, see Andrew Higgott, *Mediating Modernism: Architectural Cultures in Britain* (London, 2006) pp. 33–56; Jeremy Melvin, *F. R. S. Yorke: and the Evolution of English Modernism* (London, 2003).

11 Alvar Aalto, 'The International Status of Finnish Art', p. 278.

12 Göran Schildt, 'Alvar Aalto and the Classical Tradition', in *Classical Tradition and the Modern Movement*, ed. Asko Salokorpi (Helsinki, 1985), pp. 106–37 (p. 106). The term 'ruusun falangi' is credited to the architect and critic Olli Lehtovuori; interview with atelier member Olli Lehtovuori, Helsinki, March 2001.

13 Richard Weston, *Alvar Aalto* (London, 1995), p. 227. Weston notes the phrase's first use by Philip Morton-Shand in his 1930 review of the Stockholm Exhibition.

14 Colin St John Wilson, *The Other Tradition of Modern Architecture: the Uncompleted Project* (London, 1995); Juhani Pallasmaa, 'Alvar Aalto, Towards a Synthetic Functionalism', in *Alvar Aalto, Between Humanism and Modernism*, ed. Peter Read (New York, 1998), pp. 20–45 (p. 21). See also Kenneth Frampton, *Modern Architecture, a Critical History* (London, 1985).

15 Demetri Porphyrios, *Sources of Modern Eclecticism* (London, 1982), p. 2; Robert Venturi, *Complexity and Contradiction in Architecture* (London, 1992). Conversely, Manfredo Tafuri and Francesco Dal Co argue that Alvar Aalto's exceptionalism makes him an irrelevance within Modernism's history; see Manfredo Tafuri and Francesco Dal Co, *Modern Architecture* (New York, 1976), p. 338.

16 Giedion, *Time, Space and Architecture*, p. 620; Juhani Pallasmaa, 'Wood in Finnish Architecture, Design & Sculpture', *Form & Function Finland*, 3 (1987), pp. 3–6. The aestheticization of Finland's history is even capable of rendering the impoverishment of Finland's rural past, which as late as 1868 included lethal famines, as an attribute of an asceticism rooted in the values of a minimalist vernacular. See, for instance, Matti Klinge, 'The North, Nature, and Poverty', in Matti Klinge, *Let us be Finns, Essays on History* (Helsinki, 1990), pp. 7–20.

17 Roger Connah, *Aaltomania* (Helsinki, 2000), p. 13.

18 'Nordic Classicism' is the given name for a period of austere neo-Classicism widespread in all the Nordic countries between the 1910s and 1930s. The name originated in the 1980s post-modern 'rediscovery' of this Classicism. See *Nordic Classicism*, ed. Simo Paavilainen (Helsinki, 1982).

19 Rainer Knapas in private conversation with author, Helsinki, April 2007. J. M. Richards, *A Guide to Finnish Architecture* (London, 1966). Wickberg's book also forms the basis for, among others: Asko Salokorpi, *Finnish Modern Architecture* (London, 1970); Malcolm Quantrill, *Alvar Aalto, a Critical Study* (New York, 1983); Vilhelm Helander and Simo Risto, *Suomalainen Rakennustaide* (Modern Architecture in Finland, Helsinki, 1994). Richard Weston, *Alvar Aalto* (London, 1995) is a notable exception, accepting the overall history, but acknowledging the differing contentions within Finnish modernism.

20 Beatriz Colomina, *Privacy and Publicity, Modern Architecture as Mass Media* (Cambridge, MA, 2000), p. 118. *Alvar Aalto, I: 1922–1962*, ed. Karl Fleig (Zurich, 1962); interview with atelier member Veli Paatela, Helsinki, March, 2001; interview with atelier member Eric Adlercreutz, Helsinki, May 2001.

21 See *Alvar Aalto, I: 1922–1962*, pp. 87–93, p. 141; Petra Ceferin, 'Imageneering Architecture, Finnish Architecture Experienced Through the Lens', *ptah* (2002.1), pp. 3–16 (p. 16).

22 Connah, *Aaltomania*, p. 19.

23 Eric Hobsbawn, *On History* (London, 1998), pp. 49–74.

24 For more on this, see Kari Jormakka, Jacqueline Gargus and Douglas Graf, *The Use and Abuse of Paper* (Tampere, 1999), pp. 11–32; and also Barbara Miller Lane, *National Romanticism and Modern Architecture in Germany and the Scandinavian Countries* (Cambridge, 2000).

25 'Vi ska inte vara dogmatiska!' was Alvar Aalto's often repeated entreaty (interview with atelier member Eric Adlercreutz, Helsinki, May 2001).

26 According to the Alvar Aalto foundation's archivist, Arne Hästeskö, the Alvar Aalto atelier carried out approximately 500 projects in Finland and a further 90 abroad, as well as building over 2,000 'A Type' houses (private conversation with author, Helsinki, April 2003).

27 Alvar Aalto, 'T.K. Sallinen', *Iltalehti*, 30 May 1922, quoted in Göran Schildt, *The Early Years* (New York, 1984), p. 34; Alvar Aalto, 'Art and Technology' (1955), in *Alvar Aalto in His Own Words*, pp. 171–76 (p. 173). This was a commitment to public service that Alvar Aalto extended beyond his own artistic practice, above all as the Chairman of SAFA, the Finnish Architects' Association, from 1943 to 1959.

28 Interview with atelier member Jaakko Kontio, Helsinki, March 2001.

29 The hundreds of thousands that occupy the everyday environments of Finnish homes, offices and institutions bear this out. Their price was modest until they were identified as a 'brand' and marketed at greatly inflated prices in the years following on from the Alvar Aalto centenary celebrations in 1998.

30 Renja Suominen-Kokkonen, 'The Silent Cultural Personage', in *Aino Aalto*, ed. Ulla Kinnunen (Jyväskylä, 2004), pp. 209–31 (p. 230). See also *The Work of Architects*, ed. Pekka Korvenmaa (Helsinki, 1992); Elina Standertskjöld, 'Alvar Aalto and the USA', *Towards a Human Modernism*, ed. Walter Nerdinger (Munich, 1999), pp. 77–90; Eeva-Liisa Pelkonen, *Alvar Aalto Architecture, Modernity and Geopolitics* (New Haven, 2009); Renja Suominen-Kokkonen, *Aino and Alvar Aalto — A Shared Journey Interpretations of an Everyday Modernism* (Helsinki, 2007).

31 Alvar Aalto, letter to Aino Aalto, quoted in Schildt, *The Mature Years*, p. 99.

32 Interview with atelier member Jaakko Suihkonen, Helsinki, November 2000; interview with atelier member Tore Tallqvist, Helsinki, March 2002. For a more detailed account of the atelier, see Harry Charrington, 'Not A Locked Box, The Everyday Art of the Aalto Atelier', *Architectural Research Quarterly*, 14/3 (2010), pp. 255–66.

33 Alvar Aalto, 'Architettura e arte concreta', *Domus*, 223–25 (October–December 1947), pp. 103–15. This is usually reproduced as 'The Trout & the Stream', this title being a translation of its subsequent Finnish title, 'Taimen ja tunturipuro'.

34 Jakob von Uexhull quoted in Kalevi Kull, 'Jakob von Uexhull, An Introduction', *Semiotica*, 134/1–4 (2001), pp. 1–59 (p. 7). See also Harry Charrington, 'The Makings of a Surrounding World, the Public Places of the Aalto Atelier' (unpublished doctoral thesis, London School of Economics, 2008). I have used the term 'surrounding world' as the closest possible translation of the concept of the *Umwelt*. Uexküll's term has also been rendered as 'milieu' in Gilles Deleuze and Félix Guattari's work; see Andrew Ballantyne, *Deleuze and Guattari for Architects* (London, 2007), pp. 82–87.

35 Jakob von Uexhull, quoted in Kalevi Kull, 'Jakob von Uexhull, An Introduction', p. 4; Alvar Aalto, 'The Flexible Stair' (1942), in *Alvar Aalto in His Own Words*, pp. 164–67 (p. 165).
36 Alvar Aalto, 'The International Status of Finnish Art', p. 277.
37 'Entweder fühle Ich oder fühle Ich nicht', in Alvar Aalto, 'Architettura e arte concreta', p. 107.
38 'nur die Dunkelmänner blicken Zurück!' Alvar Aalto, 'The Architect's Dream of Paradise' (1958), in *Alvar Aalto in His Own Words*, pp. 216–17.
39 These ranged from Riga's Old Town to the ghost towns of the California gold-rush, and above all the towns of the Mediterranean. See Leonardo Mosso, 'Alvar Aallon työn ymmärtäminen tänään / Present-day understanding of Alvar Aalto's work', *Tiili*, 1 (1973), pp. 24–34; interview with atelier member Frederico Marconi, Helsinki, August 2000.
40 Guldpudra vid järnkällan
kopparorm under silverlind
det är huldrans gåta
Det är din och min
August Strindberg, quoted in Alvar Aalto, 'Art and Technology', in *Alvar Aalto in His Own Words*, pp. 171–76 (p. 174). Henri Lefebvre, *The Production of Space* (Oxford, 1991).
41 Joseph Albers quoted in 'Back to Zero, Black Mountain College 1933–57' (exhibition at Arnolfini, Bristol, 5 November 2005–15 January 2006 and Kettle's Yard, Cambridge, 28 January–2 April 2006). I use 'purposive intention' in the terms of Paul Frankl's 1914 book *Die Entwicklungphasen der Neueren Baukunst* (English language edition: *Principles of Architectural History*, Cambridge, MA, 1968), in which *Zweckmässigkeit* forms an aesthetic category alongside those of spatial composition, treatment of mass and surface and optical effects. See also Adrian Forty, *Words and Buildings* (London, 2000), pp. 174–95.
42 Alvar Aalto, 'Form as a Symbol of Artistic Creativity' (1956), in *Alvar Aalto in His Own Words*, pp.180–83 (p. 181). For more on Alvar Aalto's Germanic education, see Schildt, *The Early Years*, pp. 44–53. Nicholas Ray has noted in relation to this conception of Alvar Aalto that morphology is a term that was initially coined by Goethe: Nicholas Ray, *Alvar Aalto* (London, 2005), p. 154.
43 Yrjö Hirn was Professor of Aesthetics and Comparative Literature at Helsinki University.
44 Friedrich Schiller, *On the Aesthetic Education of Man* (New York, 2004), pp. 71, 91–93.
45 Yrjö Hirn, *The Origins of Art* (London, 1904), pp. 13, 25.
46 Yrjö Hirn, *Barnlek några kapitel om visor, danser och små teatrar* (Helsinki, 1916), p. 52. Originally published in Swedish, this has not been translated into English, but was translated into Finnish as *Leikkiä ja taidetta muutamia lukuja lasten leluista, lauluista, tansseista, ja pikku teatterista* (Play, art and other figures from children's games, songs, dances and little theatres) (Porvoo, 1918) and this has been my source. Alvar Aalto seems most likely to have been introduced to Hirn by his tutor Carolus Lindberg (1889–1955), who had collaborated with Hirn while Alvar Aalto was his student.
47 Hirn, *The Origins of Art*, p. 5.
48 Alvar Aalto, 'Experimental House at Muuratsalo', *Arkkitehti*, 9–10 (1953), reproduced in *Alvar Aalto in His Own Words*, pp. 234–35.
49 Kaila was, like Alvar Aalto, from Alajärvi, and was Professor in Turku from 1921 until 1930. Alvar Aalto used the translation of the phrase 'man the unknown' in his obituary of Gunnar Asplund in *Arkkitehti*, 11–12 (1940), reproduced in *Alvar Aalto in His Own Words*, pp. 242–43.
50 Aalto, 'Architettura e arte concreta', p. 109. See also Hirn, *The Origins of Art*, pp. 76, 142 and 302.
51 Aalto, 'Architettura e arte concreta', pp. 103–15.
52 Atelier member Mikko Merckling in private conversation with author, Helsinki, April 2002.
53 Alvar Aalto, 'The Humanizing of Architecture' (1940), in *Alvar Aalto in His Own Words*, pp. 102–07 (p. 102). In the words of Eric Adlercreutz, 'He always wanted to structure his buildings so that its workings would be symbolized' (interview with atelier member Eric Adlercreutz, Helsinki, May 2001).
54 Hirn, *The Origins of Art*, p. 270.
55 Dalibor Vesely, 'Architecture and the Conflict of Representation', *AA Files*, 8 (1985), pp. 21–38 (p. 32).
56 Schiller, *On the Aesthetic Education of Man*, p. 120; see also pp. 70–71, n. 1.
57 Johan Peter Eckermann, *Conversations with Goethe 1836–48* (Cambridge, MA, 1998), p. 366; J. H. von Goethe, *Italian Journey 1786–88*, trans. W. H. Auden and Elizabeth Mayer, 1962 (cited from Harmondsworth, 1970), p. 87; Alvar Aalto, 'The Dichotomy of Culture and Technology', in *Alvar Aalto in His Own Words*, pp. 136–37; Schiller, *On the Aesthetic Education of Man*, pp. 28–29.
58 Arne Heporauta, 'On Aino Marsio-Aalto', in *Aino Aalto*, pp. 14–35 (p. 20).
59 Aino Aalto was an accomplished photographer, and her use of tilted camerawork reveals the influence of

contemporary avant-garde photographers, most clearly Moholy-Nagy. For more on this, see Marjaana Launonen, 'Aino Aalto as a Photographer', in *Aino Aalto*, pp. 136–92.

60 Interview with atelier member Sverker Gardberg, Helsinki, May 2002. Alvar Aalto made reference to Dante's *inferno*, in which the most frustrating aspect of hell was that the going and the riser of the steps had the wrong proportions in relation to each other. See Alvar Aalto, 'The Enemies of Good Architecture' (1957), in *Alvar Aalto in His Own Words*, pp. 201–06 (p. 205).

61 Moholy-Nagy and Ellen Frank stayed with the Aaltos in the summer of 1931 and named their daughter 'Hattula' after the Finnish mediaeval church of the same name.

62 Alain Findeli, 'Moholy-Nagy's Design Pedagogy in Chicago (1937–46)', *Design Issues*, 7/1 (1990), pp. 4–19.

63 Findeli, 'Moholy-Nagy's Design Pedagogy in Chicago', p. 14, n. 22.

64 Arnold Berleant, 'The Aesthetics of Art and Nature', *in Landscapes, Natural Beauty & the Arts*, ed. Salim Kemal and Ivan Gaskill (Cambridge, 1993), pp. 228–43 (p. 231), quoted in Sarah Menin, 'Relating the Past, Sibelius, Aalto and the Profound Logos' (unpublished doctoral thesis, University of Newcastle, 1997), p. 377.

65 There is a dated photograph of the Alvar Aalto and Frederick Kiesler at Grand Central Station in the archives of the Alvar Aalto Foundation. The Aaltos' library contains copies of Frederick Kiesler's 1939 articles for *Architectural Record*.

66 See Schildt, *The Early Years*, p. 31.

67 Alvar Aalto, 'Constructive Form' (1954), in *Alvar Aalto in His Own Words*, p. 258; Robin Kinross, 'Herbert Read's "Industry and Art", A History', *Journal of Design History*, 1/1 (1988), pp. 35–50 (pp. 37–39). Moholy-Nagy's fellow *Bauhaüsler* Herbert Bayer was the designer of the book. For more on this, see Pekka Korvenmaa, 'Aalto & Finnish Industry', in *Alvar Aalto, Between Humanism and Materialism*, pp. 70–93.

68 Herbert Read, 'The Redemption of the Robot', quoted in Michael Parsons, 'Herbert Read on Education', *Journal of Aesthetic Education*, 3/4 (October 1969), pp. 27–45 (p. 31).

69 Herbert Read, *Art Through Education* (London, 1958), p. 63. Alvar Aalto, 'Viaggio in Italia', *Casabella-continuatà*, 200 (February–March 1954), pp. 4–7 (p. 4).

70 Yrjö Hirn, *Det estetiska livet* (The Aesthetic Life, 1924), quoted in Kirmo Mikkola, 'Teknisestä inhimilliseen, Alvar Aallon suhde funktionalismin / From the Technological to the Humane, Alvar Aalto Versus Functionalism', in *Abacus Yearbook 1979*, ed. Igor Herler (Helsinki, 1980), pp. 135–58 (p. 149). Hirn, *The Origins of Art*, pp. 128–29.

71 See Alvar Aalto, 'Art and Technology' (1955) in *Alvar Aalto in His Own Words*, pp. 171–75, and 'Between Materialism and Humanism' (1955) in ibid., pp. 175–79.

72 Alvar Aalto, 'Architettura e arte concreta', p. 108.

73 'älä sommittele'.

74 Interview with atelier member Jaakko Suihkonen, Helsinki, November 2000.

75 Raoul Francé, *Die Pflanze als Erfinder* (Stuttgart, 1920), translated as *The Plants as Inventors* (New York, 1920); cited in László Moholy-Nagy, *Von Material zu Architektur, Bauhaus Bücher 14*, trans. and updated as *The New Vision*, 4th rev. edn (New York, 1947), p. 46.

76 Interview with atelier member Veli Paatela, Helsinki, March 2000. Those seeking evidence of an empirical approach to design have erroneously cited these designs as serious alternatives. See Quantrill, *Alvar Aalto, a Critical Study*, p. 109; Wilson, *The Other Tradition*, ch. 5, 'Four Case Studies', pp. 81–121; Sarah Menin, 'Relating the Past, Sibelius, Aalto and the Profound Logos', p. 312.

77 Alvar Aalto expressed particular admiration for Georges Braque; see interview with Elissa Aalto, 'Tapaamisia', in Teija Hihnala and P.-M. Raippalinna, *Fratres Spirituales Alvari* (Jyväskylä, 1991), p. 8. Some critics have interpreted the Villa Mairea as a collage; see, for instance, Juhani Pallasmaa, *Villa Mairea* (Jyävskylä, 1998), p. 93.

78 Hirn, *The Origins of Art*, p. 145.

79 Aalto, 'Architettura e arte concreta', p. 109.

80 Interview with atelier members Mauno Kitunen and Jaakko Suihkonen, Helsinki, March 2001.

81 Harry Charrington, 'Making the House of Culture', in *Process & Culture*, ed. Harry Charrington (Helsinki, 1998), pp. 6–23.

82 Interview with atelier members Heino Paanajärvi and Tore Tallqvist, Helsinki, March 2002.

83 Alvar Aalto, 'The Relationship Between Architecture, Painting and Sculpture' (1970), in *Alvar Aalto in His Own Words*, pp. 265–69 (p. 267).

84 Aalto, 'Between Materialism and Humanism', p. 178.

85 Interview with Artek designer Pirkko Stenros, Helsinki, April 2002.

86 Arne Heporauta, 'On Aino Marsio-Aalto', in *Aino Aalto*, pp. 15–22.

87 Josef Albers, quoted in *Back to Zero, Black Mountain College 1933–57*. A copy of *Von Material zu Architektur*, signed by Moholy-Nagy, is in the Aaltos' library, now housed at the Alvar Aalto Foundation. Alvar Aalto also knew Josef Albers, who was specifically in communication with Alvar Aalto during 1933, inquiring as to the possibilities of installing some of his work in the Paimio Sanatorium; see letter in Alvar Aalto Foundation, 11109.
88 See also Alvar Aalto, 'Rationalism and Man' (1935), in *Alvar Aalto in His Own Words*, pp. 89–93.
89 Interview with atelier member Kaarlo (Kalle) Leppänen, Helsinki, April 1997. Hirvonen was nicknamed Lamppu (literally 'lamp', colloquially 'Sparks') by the Alvar Aalto atelier. Both Tynell and the Aaltos had read Gregor Paulsson's (1890–1977) *Vackrare vardagsvara* [Everyday Products] (Gothenburg, 1919); and in his 1926 essay, *From Doorstep to Living Room*, Alvar Aalto praised the lightness of Paulsson's approach; see Marjo-Riitta Simpanen, *Kasityö — Aalto inhemillinen tekijä* (Jyväskylä, 1998), pp. 17–30.
90 Peter Galison, 'Aufbau/Bauhaus, Logical Positivism and Architectural Modernism', *Critical Inquiry*, 16/4 (1990), pp. 709–52 (pp. 717, 735).
91 Following their work with Korhonen, furniture designs continued to evolve in the Artek studio under the supervision of Aino Aalto, albeit separated from the inspiration and serendipities of the workshop.
92 A. Lawrence Kocher, 'Essay', in *Aalto Architecture and Furniture* (New York, 1938), unpaginated.
93 Paul Frankl, Die Entwicklungphasen der Neueren Baukunst (Berlin, 1914), translated by James O'Gorman as Principles of Architectural History, The Four Phases of Architectural Style 1420–1900 (Cambridge, MA, 1968), p. 112.
94 Interview with engineer Aarne Hollmén, Helsinki, June 2002.
95 Private conversation with atelier member Tide Huesser, Helsinki, 1986.
96 Harry Mallgrave, *Gottfried Semper Architect of the Nineteenth Century* (New Haven, 1996), p. 298.
97 Interview with atelier member Veli Paatela, Helsinki, April 2001.
98 Aalto, 'The Relationship Between Architecture, Painting and Sculpture', p. 266.
99 Alvar Aalto writing in *Arkkitehti*, 1–2 (1948), quoted in Ulla Enckell, 'Alvar Aalto the Artist', in Ulla Enckell, *Alvar Aalto Taitelija–Konstnären–Artist* (Helsinki, 1998), unpaginated.
100 'Villa Mairea', *Arkkitehti*, 9 (1939), reproduced in Alvar Aalto, 'The Home of a Rich Collector' (1939), in *Alvar Aalto in His Own Words*, pp. 225–30 (p. 230).
101 Interview with atelier member Heikki Hyytiänen, Helsinki, April 2002.
102 Leena Ahtola-Moorhouse, in private conversation with author, Helsinki, April 2006. Eero Nelimarkka was also a native of Alajärvi. Frosterus wrote his doctoral thesis 'Väri ja valo' (Light and Colour), in 1903, on Cézanne and Post-Impressionist colour; he was in conversation with the Bloomsbury Group artist and critic Roger Fry (1866–1934).
103 László Moholy-Nagy, *Von Material zu Architektur*, pp. 13 and 19.
104 Kaarina Mikonranta, 'Aino Marsio-Aalto — Interior and Furniture Designer', in *Aino Aalto*, pp. 112–44 (p. 134). See also Alvar Aalto, 'Benvenuto's Christmas Punch' (1921), in *Alvar Aalto in His Own Words*, pp. 29–30 (p. 30).
105 Interview with atelier member Ilona Lehtinen, Helsinki, March 2001. On site plan drawings the actual physical contour lines of the mapmaker are often left and the buildings often emerge as an extension of this, as with the Essen Opera House. See Mark A. Hewitt, 'The Imaginary Mountain, The Significance of Contour in Alvar Aalto's Sketches', *Perspecta*, 2 (1989), pp. 163–77.
106 Treib, 'Alvar Aalto at 100', p. 64; Barry Gasson, private conversation with author, Manchester, 1993.
107 '*Ausser sich gehen*'. Alvar Aalto, 'What is Culture?' (1958), in *Alvar Aalto in His Own Words*, pp. 15–17 (p. 16).
108 Ibid., p. 15.
109 Alvar Aalto, 'The Stockholm Exhibition' (1930), in *Alvar Aalto in His Own Words*, pp. 71–76 (p. 72). Maurice Merleau-Ponty, *Phénoménologie de la perception* (Paris, 1945), citation from the English translation, *Phenomenology of Perception*, trans. Colin Smith (London, 1962), p. vii.