DESIGNING WITH NATURE: AN INTERPRETATION OF THE LEGACY OF ELIEL SAARINEN, ALVAR AALTO, AND REIMA PIETILÄ

Minna Chudoba

ABSTRACT

Architecture constructed in the Nordic countries has often been regarded as having a special affinity with nature. This has been linked to the use of natural materials and to the way built structures are connected with their environment. This connection has also been described in language that emphasizes the mysterious qualities of Northern nature. However, such descriptions may often be too simple to provide an adequate interpretation of the constructed environment. At the same time, they could be used to say something about the process of architectural creation. If so, are the descriptions related to the way architects themselves explain their design process?

Indeed, architects may have emphasized mysterious or intuitive qualities in the process of creating their designs. Design processes are both individual and collectively similar, with the contexts being both unique and landscape-specific at the same time. Universality is thus intertwined with the place-specificity of architecture, for example in the work of Finnish twentieth-century architects from Eliel Saarinen to Alvar Aalto and Reima Pietilä. This article examines interpretative texts emphasizing nature in the work of these well-known architects. They are juxtaposed with the architects' own texts describing their design process. The comparison sheds light on the constructed narrative of one specific aspect of Nordic architecture, while raising questions of individuality and universality in the architectural design process.

KEYWORDS

Nature, architecture, context, design process

INTRODUCTION

The special relationship to indigenous nature that has been linked to Nordic architecture—and in this article, to architecture in Finland in particular—is not a recent occurrence. At the turn of the previous century, so-called national romanticist architecture made use of images of local flora and fauna in facade details; later architects affiliated with modernism continued earlier traditions of interweaving the built environment with the landscape. Architecture was seen in relation to its context, and the use of materials reflected this relationship. When wood and stone, for example, were used in buildings, they were seen as a reinforcement of a history of architecture with strong ties to its environment. Awareness of nature has, however, naturally denoted not only taking into account each particular design context, but also dealing with the premises behind a design process on a more universal level.

In his book *Concept of Dwelling*, Christian Norberg-Schulz outlines both a local forest experience and the universal understanding of it. He starts his book by paraphrasing a story by the Norwegian writer Tarjei Vesaas. In the story, the main character experiences the forest near his home. The importance of the forest in revealing the protagonist's particular place is summed up as: 'the forest will always be with him'. Nordic readers will recognize the forest based simply on its verbal description, but Norberg-Schulz also notes the universality of the experience: it could be written about similar experiences in different types of nature, whether desert or steppe, coast or mountains. Norberg-Schulz goes on, quoting Vesaas, to reflect on how the land and vegetation are brought together in the traditional architecture of each culture, and how elements that already exist are augmented by dwellings constructed with local materials. The idea of dwelling consists of both the built structure and its environment, which seem to be in a symbiotic relationship. Traditional architecture is thus not *in* nature, it is *of* nature.[1]

Similar connections to nature can also be observed in buildings designed by architects. Even interpretations of northern architecture sometimes draw inspiration from the rich narrative histories of the various Nordic countries, not just the visible built environment. Descriptions at times emphasize the exotic and the strangemysterious quality of northern forests, and thus perhaps flavouring architecture with a touch of fantasy. Characters from folklore have at times also been linked to the design process—by both admirers and critics alike. Altogether, this has tended to underscore the mysterious element of the

observed nature-awareness of the architecture or to give rise to assumptions regarding the uniqueness of each individual design process. At the same time, such interpretations may even contrast with the architecture or the architect's intentions. This has been shown by research,[2] which has expressed the contrasting views through opposing pairs: on one side there is universal technology and a contemporary attitude, on the other, tradition and the local, with strong connection to natural materiality. The two dichotomous views—which do not necessarily cancel each other out—are derived from an earlier discourse, in which enlightenment and romanticism promoted their separate ideas of nature. On the one hand, there was the optimistic belief that the advances of technology would be able to solve problems related to nature and natural resources. On the other hand, there was the more ecologically minded, protective attitude that was the heir of romanticism.[3] The latter can be linked to the idea of nature as prerequisite for creative contemplation, and thus a necessary component of a design process. The linking of architectonic constructions to nature, and even spicing up interpretations with fantasy, seems to be a particular expression of an inherent duality seen in the architecture of the North.

Nature awareness can be seen in assessments of Finnish architects throughout the twentieth century. This article therefore discusses the question: How are interpretive descriptions of architecture (by others) related to the way the architects themselves viewed the premises of their design, especially from the perspective of the design process? For instance, architects may have emphasized intuitive qualities in the process of creating their designs, while consciously linking the architecture to its landscape. Thus, the universality of a design process can be intertwined with the locality and place-specificity of architecture. This article focuses on the work of three prominent Finnish architects who were all known internationally. Many architectural historians, international and national alike, have thus interpreted their architecture. The presumed objective distance of the international interpretations is of special interest in this case.

The article recounts the continuing story of Finnish twentieth-century architecture through three of its most well-known characters, with a focus on the idea of nature. It is suggested here that the oft-repeated mythical dimension of nature, which may be a somewhat superficial attribution when linked to architecture, is useful when the actual design processes are examined.

NATURE AND ARCHITECTURE IN THE WORK OF THREE PROMINENT FINNISH ARCHITECTS

The internationally renowned Finnish architects selected for this study—Eliel Saarinen (1873–1950), Alvar Aalto (1898–1976), and Reima Pietilä (1923–1993)—are linked to each other by their public recognition, even to the extent that one is seen as having receiving 'the mantle' from another.[4] The age difference between these architects has been summed up by Malcolm Quantrill: in 1923, Reima Pietilä was born, Alvar Aalto opened his first practice in Jyväskylä, and the fifty-year-old Eliel Saarinen moved to the United States to begin the second half of his career.[5] Pietilä, the youngest of these architects, drafted a list of things that both link the three of them and also set them apart from one another: 'There are four basic varieties or possible sources of architecture: 1. The fisherman's cottage; 2. Some kind of national romanticism; 3. Alvar Aalto's modernism; and 4. My approach.'[6] All three architects were naturally aware of the traditional architecture in Finland, and for the two younger architects, the national romanticist movement—in which Saarinen took part—belonged to their knowledge of Finland's architectural history. Nature is not mentioned in this list, but a particular approach to nature links all three architects as well. This has been noted especially in the case of Aalto and Pietilä.[7]

At the same time, architects have looked to nature as a source of ideas for architectural form throughout history. A theory of evolution and the correlation of parts was already presented in the early 1800s, even prior to the publication of Charles Darwin's *On the Origin of Species*. According to this theory, each organ is functionally connected to all the other organs in the body, and all of them are connected to the environment. These ideas influenced urban models at the time and the word 'organic' became popular in texts. Nineteenth-century writers like John Ruskin (1819–1900) and William Morris (1834–1896) obtained starting points for architecture from nature; nature was a source of natural laws that could be applied to architecture.[8] In Finland, the idea of looking to nature was at its strongest during the national romanticist period. Inspiration was sought directly from nature and natural science catalogues such as Ernst Haeckel's *Kunstformen der Natur* (Art Forms in Nature, 1899–1904).[9] Nature was linked to the national romanticist movement not only because of the decorative details derived from nature, but also because the concept of the total work of art called for a comprehensive approach to design tasks, from how buildings are situated in their environ-

ment to the most minute interior details. Inside and outside were joined. Nature was brought in to enhance interior spaces; sometimes literally, but often also as an acknowledged inspiration in the design process.

The three architects who are the focus here all wrote about their design processes, even though their approaches towards writing about architecture were quite different. Saarinen wrote books with a pedagogical premise; Aalto was more known as a speaker, even though he also wrote articles; and Pietilä used writing as an actual design tool. All three of them utilized their unique takes on the subjective process of designing architecture in their architectural pedagogy: the focus was on an individual search. Eliel Saarinen encouraged his students to seek their own utopias. Alvar Aalto wanted students to play while designing, and was reluctant to label architecture good or bad. Pietilä posed questions rather than giving ready-made solutions, and thus encouraged an inquisitive attitude and freedom of thought.[10] These pedagogical ideas were echoed in the architects' texts about the design process. Saarinen regarded the search for form as a journey towards an elusive goal, and an element of secrecy shrouded his design process. Aalto trusted instinct and did not waste any paper explaining more than he thought necessary. Pietilä strove to explain, doubtful of the old idea that design itself was somehow part of the irrational or metaphysical. The design processes were thus individual and unique despite the shared premises.[11]

In this article, the nature rhetoric that is often apparent in assessments of architecture is juxtaposed with the presence of nature in the architects' own texts, especially when addressing the design process itself, not just the finished result of that process. The former is part of the well-known story of the constructed narrative of Finnish architecture. The latter is a story with more branchings-out and individuality. The design process is, after all, subjective—even when it contains a thread of universality.

ELIEL SAARINEN: THE NATIONAL ROMANTICIST MOVEMENT AND THE SEARCH FOR FORM

Eliel Saarinen was one of the architects associated with the national romanticist movement in Finland at the turn of the previous century. The movement was characterized by a break from the past and a sense for modern expression. Despite the use of the term 'national', the movement had international influences. The materials used, however, were local: stone, wood,

and plastercovered the finely detailed facades. The nationally well-known architectural firm of Gesellius, Lindgren, Saarinen made skilful use of these timely design elements.

At the time, art and architecture were also being utilized to define a national identity for a country seeking its independence. A spirit of reform permeated the architectural expression, while the importance of national built heritage was also acknowledged. International design themes of modernity were combined with a local cultural background. Researchers have noted this dual nature of the architecture used to strengthen Finnish national identity:[12] even if local flora and fauna were used in details to give the architecture a familiar appearance, international influences nonetheless played a significant part. This duality has even been labelled as contradictory, since rationalism, abstraction, and soon even modernism existed alongside the romantic tendencies.[13] Later, when Saarinen had already moved to the United States and designed buildings for the Cranbrook Academy of Art, his buildings would be noted for the way they were fitted into the natural surroundings. This important element of national romanticist architecture was an aspect of that the movement that later generations of architects would also espouse.[14]

The search for contemporary form that characterized the Finnish architecture of the late 1800s and early 1900s was recalled by Eliel Saarinen decades later in his books. At the time they were published he had already been living in the United States for two decades, and the architecture designed in his office had moved on from his national romanticist beginnings. It was modern, so as to respond to the changing definitions of the word. The skyscraper design—for the Chicago Tribune Tower competition of 1922—that brought him across the Atlantic was never built, but he designed the Cranbrook campus, housing areas, and public buildings, and was also involved as a consultant in many urban planning projects. In addition, he had academic duties as a teacher. His books were linked to this role, and were written for students and the general public. With his books, Saarinen joined the ranks of writing architects—*The Search for Form in Art and Architecture* of 1948 was his architectural credo.[15]

Nature was one source of design inspiration, and the basis for Saarinen's forms. In his texts, linguistic images of nature are interwoven with an awareness of architectural history, both national and international, knowledge that was standard for an architect who studied in Finland at the end of the nineteenth century. Saarinen's teacher at the Polytechnic Institute had already

emphasized nature as a starting point of design. According to him, the order seen in nature was the founding law of everything. By adhering to this law, an artist could achieve a harmonious balance in his work.[16] Another inspiring influence for Saarinen's nature texts was the American architect Louis Sullivan, for whom all forms of life reflected their function, and each function shaped its form. He used nature images to explain appearance as describing an inner purpose. This assertion was illustrated with plants, animals, clouds, and weather phenomena.[17] Saarinen also made use of similar nature references. Landscapes, trees, animals, the smell of flowers, and the taste of berries enliven his texts, conveying the shadows of northern forests and the nuances of the delicate undergrowth, but also the drama of a capercaillie's mating dance or the flaming colours of the Northern Lights in the winter sky. The detailed descriptions also expand to larger scales and ultimately to the entire universe. According to Saarinen, the correlated scale levels show basic natural laws also applicable to building and urban planning.[18]

The importance of nature imagery in Saarinen's personal design process is obvious in his texts: It was in nature that he found the roots for understanding art and life itself. Nature was the source that kindled the creative instinct, and in nature one found the truest principles of human art. Saarinen explained his design process by focusing on form. Form was defined and then paired with words like space, time, truth, and function to describe the various paths a designer could take when searching for an architecture for the modern era. The design process was thus condensed in the ongoing search for form. The search included a creation but also a diagnosis of it: It was a reflective, non-linear process. The design task required a scalar understanding organized according to a natural organic order, consisting of correlated parts forming a whole. In the case of an urban environment, the whole was a complex organism. Indeed, nature analogies were especially useful in urban design and planning. According to Saarinen, an understanding of form coordination was important for all designers regardless of the scale of the task.[19]

The structure of the design process received inner content from intuition, instinct, and imagination. These elements of the search for form defied simple explanations. They were indefinable, as Saarinen claimed in the concluding remarks of his book: the process was inevitably something that was to be understood intuitively, but not defined. The indefinable was part of the 'mysteriously sacred realm'. Form turned out to be elusive, since its source, nature, was both secret and sacred. Imagination dealt with mystery

and wonder, and in this context, Saarinen wrote about mythologies of bygone eras. The mythical epics and tales depicted the struggles of life, thus grounding artistic imagination in a constant fluctuating drama. In the end, there was something in the architect's work process that belonged to the realm of 'unknown'. Saarinen's text on the search for form was universal in its basic premises. He did not emphasize his Finnishness in his references to nature. He summed up the issue of the local and the international by declaring the new form of the age to be international in essence, but adapted to local conditions. Knowledge of Finnish nature was simply the starting point from which Saarinen began building his own interpretation of the order of nature behind architectural design. His relationship to this background might be compared to the relationship he believed people should have with architecture: it should be a source of subconscious satisfaction, but not require constant conscious reaction.[20]

Historical research has shown that Eliel Saarinen's design thinking was also shaped by several international influences.[21] This is likewise true of the nature references Saarinen used, since his texts contain several such references that are not directly northern in origin. Finnish-interpreted nature, landscape, flora, and fauna are mentioned in Saarinen's book *Search for Form* only four times, while there are more than thirty general references to nature. The same applies to the illustrations: only one of the sixteen images can be linked directly to northern nature. Despite the influences extending beyond the national boundaries, much of Saarinen's work—not only of the national romanticist period—has been evaluated from the perspective of Finnish nature rhetoric. Nature has often been presented as an important background factor, especially abroad, and descriptions have often focused on pine forests and granite.[22] The skyscraper that Saarinen proposed for the Chicago Tribune Tower competition was already stamped with natural primitiveness.[23] Commentators were surprised to see a skyscraper designed by a Finnish architect who had never looked at an actual skyscraper. Finland was regarded as a mysterious country on the northern periphery of Europe. Critics would write, even if tongue in cheek, that the skyscraper proposal must have been drawn in a glacial cave, assisted by elves. Strangely, fantastical elements were thus linked to a modern building type that depended on steel construction and elevator technology. More reasonable were the comments that made use of nature analogies transposed to the urban environment: for example, Saarinen's skyscraper proposal was described as a 'seed planted

deep in the earth', or, in the words of Louis Sullivan, it expressed 'the logic of living things'.[24]

In general, mysterious qualities were not emphasized by Finnish architects themselves, and after the national romanticist period, even nature references were not accentuated. For example, a colleague gave a restrained assessment of the importance of Finnish nature in a text for Saarinen's memorial exhibition that linked nature references to international influences. Nature was regarded more as a context for architecture than as a prioritized, conscious or subconscious inspiration for the architect's design work.[25] Another colleague, when asked about the Finnishness of Saarinen's architecture, replied that it was 'neutral world architecture'.[26] Both interpretations were possible. National interpretations noted the familiar basis, but concentrated on universal influences, while the other, opposing view, found exotic qualities in the Finnishness. However, when the focus is put on the design process rather than the finished design, similarities may be observed between the links to fantasy and the sense of mystery in Saarinen's own texts on searching for form. It may not be so fantastical after all that a 1920s skyscraper design should be said to have come about with the assistance of fairy-tale creatures. In this case, the mysterious qualities associated with the design process were linked to the myths of northern forests and the geological history of the land. The same description could also be seen as an indication of a more universally interpreted indefinability of the design process. The sources of imagination are not easy to name—inventive design adheres to no strict boundaries.

Alvar Aalto: Nature, Technology, and the Abuse of Paper

The national romanticist movement was the basis on which subsequent generations of Finnish architects would build. It was included in their design premises, as were knowledge of classical architecture and local building traditions, as well as the natural and topographical contexts of the architecture. In Aalto's case, a direct link to national romanticist influences was recorded by the architect himself: Aalto remembers being impressed by a specific picture of Gesellius, Lindgren, Saarinen architecture that he saw in a journal when he was a young boy.[27] Writers of his biographies have noted further national romanticist influences. Aalto was regarded as continuing the earlier tradition, especially admiring how buildings were connected to the landscape and adapted to nature. National romanticism with its locally derived authentic materials and respect for the craftsmanship of details played an introductory role in the evolving process of his creative growth.[28]

Similarly to Saarinen, Alvar Aalto's view of human beings and their relationship with the earth was influenced by the nineteenth-century belief in development progress, complemented by ideas inspired by Goethe: harmony with nature in a balanced relationship. Aalto's experience of Finnish forests

Figure 1. Eliel Saarinen, entrance to the Milles House, Cranbrook (1928). The transparent glass of the door allows for a connection between the inside and outside spaces. Photo by the author, 2008.

was influenced by his enthusiasm for hunting, and likely also by the professions of his surveyor father and forester grandfather. A strong connection to the land has thus been noted in Aalto's architecture.[29] This connection can also be found in the few texts that he wrote about architecture and the design process.

Although Aalto did not write a lengthy architectural credo, he was known for his speeches and wrote articles on a variety of design topics. In one of them, he famously wrote that architects should only use paper for drawing. Aalto has also been quoted as saying: 'I answer by building' and 'what an architect says does not mean a damned thing, what counts is what he does'.[30]

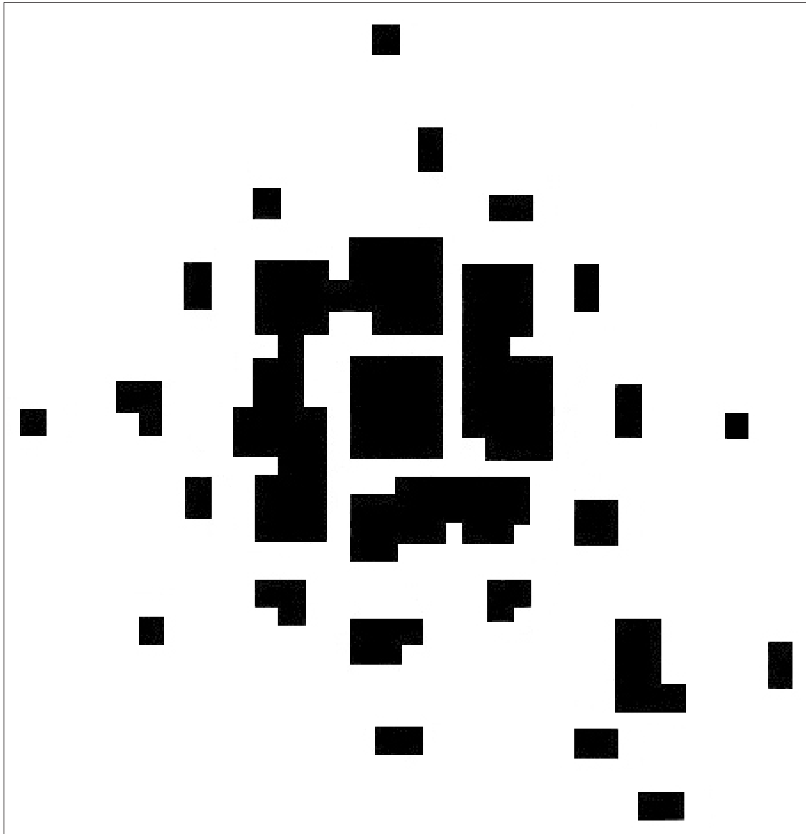

Figure 2. Eliel Saarinen, detail of 'Diagram of Organic Urban Design'. The orthogonal design motif for a door (Figure 1) was repeated on a much larger scale. Source: Eliel Saarinen, The City, fig. 50.

Nevertheless, he does give a glimpse into his design process in his articles. In 'Taimen ja tunturipuro' (The Trout and the Stream, 1947) he explained how he first familiarized himself with the design problem and its various requirements, and then forgot them and concentrated on intuitive drawing. He did not consider the results architectural drawings, but instead compositions that could even be described as childish. He declared that architectural design somehow belonged to the realm of biology: ideas may be compared to the life cycle of trout, which are born far away from their actual living environment. He elaborated this comparison in detail with images of melting ice and clear streams amid the northern fells. Like the life of trout, the creative process required time and even spatial distance.[31] In the same text, the image of nature was also supplemented with references from classical culture. The text brought forth possible influences on design thinking: it began with nature, but included an understanding of history and the built heritage. Aalto summed up his creative process with the statement: 'I just draw by instinct.'[32] This instinct, of course, would be backed by intuition and fed by imagination. Saarinen might have expressed it thus: 'As life begins with imagination, so does it continue.'[33]

For Aalto, the design process was about resolving hundreds of contradictions. Imagination and intuition were needed, but they were merely the sources of images. For architecture to be created, ideas needed to be explored with lines on paper. At the beginning of his career he called these lines 'curving, living, unpredictable, which run in dimensions unknown to mathematicians'. When contemplating the architectural program, Aalto noted that it was ultimately, 'biodynamic', based on human life. He also commented on the importance of artistic endeavours in the design process: sketching and painting were experiments with various media, and were linked to materiality, which was essential in designing architecture. He seems to have combined theory and methodology to provide a basis for his intuitive, visionary design method. This method allowed artistic sidestepping into realms of fantasy, as Aalto himself explained about one design process: 'I drew all kinds of fantastic mountain landscapes, with slopes lit by many suns in different positions.'[34]

Aalto's texts imply a collage of influences combining both the local and the international. According to Aalto, everyone's starting point was a specific spatial entity. From this beginning the view was broadened to include national and even international areas. The development always 'fanned outward', but the starting point and the outward journey existed side by side.[35] This

view could also be used to interpret the architect's attitude to nature. The 'memories of the Finnish landscape' in Aalto architecture have been noted, in exactly the way Aalto himself saw them: they were a beginning from which to expand visions.[36] Aalto, always a 'forest man', may have carried experiences from the forests of his youth along with him,[37] but these nature experiences were later supplemented by impressions from international travel, with Italy a special favourite.[38] The cultural Italian landscape would even be brought into architectural sketches in the Finnish context. At times, his drawings depicted a symbiotic relationship of buildings and the landscape.[39] Some assessments have even turned poetic when describing the nature link: during an opening speech for an exhibition in Florence in 1965, Aalto was compared to Francis of Assisi, who got 'along with the forces of nature as well as wild animals'.[40]

Assessments of Aalto's architecture have, however, often been interpreted based largely on his Finnish background. Sigfried Giedion, who included a section on Alvar Aalto in his seminal book *Space, Time & Architecture*, concentrated on his Finnishness. It has been noted that Giedion specifically chose Aalto as a representative of mystical values in modern architecture; as 'a man of the North', he was suitable for portraying the presumed qualities of the Nordic people: 'mysticism, irrationality, and intuition'.[41] Giedion claimed that 'Finland is with Aalto wherever he goes'. For Giedion, this Finland was archaic—he started the story of Finnish architecture with the ice age, telling of how the land was revealed by the retreating ice. Such an ancient starting point gives importance to the topography. The connection to the earth is strong; Finland is the land. Giedion's description continued on to the historical: in Finland he still saw 'many remnants of primeval and medieval times'. He even implied an element of the mythical when he called Aalto a 'wizard of the north'.[42]

Nevertheless, Aalto himself preferred a harmonious cultural landscape to wilderness romanticism. This became clear when Aalto did not want a 'Karelian forest pond' when planning Töölö Bay in Helsinki.[43] It seems that Aalto preferred tamed nature. This was an urban view, and understandable for an architect wanting to see buildings fitted into the existing context. Aalto's approach to design—especially in larger urban contexts—was piecemeal, processual, and rule- rather than model-based: 'building cell by cell, the generating principle of biology and culture is a sounder method than striving for a pre-planned totality.' The connection to the surroundings was especially important in residential architecture, where nature was brought inside

and the garden was considered to be an essential part of each dwelling. This 'outside brought inside' is seen a continuing theme in Aalto's architecture. It is apt that nature has been called a logical collaborator in Aalto's design process.[44] This nature had a solid premise in the Finnish landscape, even though more universal influences were equally meaningful. A somewhat critical note regarding the Finnish emphasis on nature may be observed, for example, when Aalto mentioned 'forest dreaming' as a particularly northern trait.[45]

Aalto's architecture has been thoroughly studied, and since he did not describe much of his design process in texts, others have tried to do so for him. Although some earlier assessments may have overemphasized the mysterious qualities of the nature background, more current research has resulted in interpretations that seem to capture the many facets of Aalto's design process. This multifaceted view has been compared to collage. For example, Juhani Pallasmaa has offered intriguing and internationally tinted possibilities in his evaluations, claiming that Aalto's Villa Mairea may be regarded within the Finnish cultural tradition, but it is also part of the tradition of European modern art. He has speculated that the pool in the yard might not have been merely a metaphor for a Finnish forest pond, as has often been claimed; its form might instead be a playful reference to Cubist paintings of string instruments. This is in keeping with Aalto's own views: the roots of architecture were abstract, but based on knowledge and research stored in the designer's subconscious. This included knowledge of the geography and flora of one's homeland. It was a design basis to which contemporary information about technological inventions, cultural history, and even favourite travel destinations was added. The biologically based aspects of place were combined with geometrical traditions of culture, as Lauri Louekari has noted.[46] Thus, it is not surprising to find a collage of influences—links to Finnish nature with an international twist. In Aalto's case, the at times superficial nature rhetoric has been supplemented with evaluations that focus on the design process, rather than simply on the visible architecture and its relationship to nature.

Kirmo Mikkola and Malcolm Quantrill have both pointed out how important variability was for Aalto. A design synthesis depended on intuition and spontaneity in order to achieve the necessary combinations. Like Saarinen, Aalto saw natural organisms and biology as the origins for understanding design processes in architecture. These origins were further augmented by

a cultural understanding that transcended national boundaries. The aim was to create relationships between human beings and their environment, which was achieved through a design process that combined science and poetics with feeling. Göran Schildt has stated that Aalto was not only logical, but was also reconnecting with the earth, the collective, and forces of the subconscious. Logic was coupled with something indefinable; intuition was based on theory and method. Methodology was the prerequisite of art, not its opposite. Aalto was seeking a biological synthesis.[47] It has also been noted that Aalto knew how to play with variability of scale, using the same motifs for tasks as diverse as an urban development plan and a piece of furniture.[48] Such diversity of scale is not that surprising for architects (see Figures 1 and 2)—the design method of intuitive drawing goes beyond the restrictions of scale.

Reima Pietilä: Writing Architecture and Mirroring Nature

Alvar Aalto influenced Reima Pietilä, just as he did all the younger generations of twentieth-century Finnish architects—the Finnish design environment has even been called an 'Aalto climate'.[49] Naturally, younger architects eventually broke away from the most charismatic influence, and dissimilarities became pronounced in the 1950s. Both a dialogue and a tension have been observed between the work of Aalto and Pietilä.[50] Although nature is repeatedly referred to in interpretations of their work, differences have been noted in their approaches. Both Lauri Louekari and Christian Norberg-Schulz have claimed that, for Pietilä, the contact to nature was direct, that he saw nature as the source of vast morphological knowledge, as a basic element of architecture to be experienced. Aalto's work, on the other hand, was connected to nature in a more indirect way. Nature was present in a general sense, even if his forms could be linked to the Finnish landscape.[51]

The position of Raili and Reima Pietilä in the story of Finnish architecture is unique due to its fluctuation. Roger Connah has noted that the Pietiläs were not considered Finnish enough in the 1950s and 1960s, but that the situation had changed by the 1980s.[52] This may have to do with the fact that the universal and the local could exist simultaneously in Pietilä's work—when the focus was local, the Finnishness in the architecture was discovered. Reima Pietilä himself once said that architecture was an international way of thinking, but there was also a need for an architecture that referred to its locality.[53] Nature could represent something Finnish but also something universal, and the

nature references in Reima Pietilä's texts were not always obviously Finnish. Fittingly, Pietilä claimed that the relationship to nature should be both cosmic and earthbound.[54]

Reima Pietilä was an architect who not only wrote to explain his thoughts on architecture; he used also writing as a medium in designing. His texts were often mysterious, or even cryptic.[55] He wrote profusely while designing, attempting to explain the intuitive design process and understand its roots. When asked about this, Pietilä referred to Aalto, and admitted to a 'wandering way of approaching problems'.[56] His starting point, however, was research: he was interested in the archaeological history of a place. His design process did not include a specific goal, but instead a flock of 'goal vectors', or 'approaching sequences'. Sometimes the thoughts were illustrated with diagrams that were both graphically informative and visually intriguing, like abstract art.[57] When writing about the design process, Pietilä used words that emphasize the explorative, searching qualities. In the design process, he was 'groping towards a clear vision of the whole', 'trusting in instincts', and venturing 'into

Figure 3. Alvar Aalto, Säynätsalo Town Hall (1949–52). The famous grass-covered stairway leading to the hilltop atrium yard with its fountain is one of the most photographed parts of the building. Nature is brought into the centre of the architecture that cradles it. Photo by the author, 2016.

the unknown'—or even returning to 'precognitive knowledge'. Pietilä seemed to possess an equal degree of familiarity with the local, the regional, and the universal, and with a constant oscillation between the three possibilities. He saw architecture as linked to culture, and nature as part of the cultural environment. In Pietilä's texts, metaphors for natural forms are especially prominent. Finnish nature was the starting point and source of inspiration.[58]

Moreover, the Finnishness in Pietilä's architecture was strengthened by his use of language in the design process. He claimed to 'draw in Finnish', since it was the native language of his thinking that guided the movements of the pencil. Pietilä thought of words as a good medium for sketching; what was heard existed alongside what was seen, and Pietilä did not appreciate the sole dominance of the eye.[59] He expected much of words, and even thought that verbal instructions might sometimes be sufficient on a construction site. In reality, this was not the case, as the Pietiläs themselves noted when the Dipoli student union building was being constructed. Complicated drawings were necessary, since it was only possible to construct what was expressed visually.[60]

Reima Pietilä also referred to the process of designing Dipoli as an exercise in morphology, or, to use a direct translation of the Finnish concept, *muoto-oppi*: an exercise in form-learning. Morphology was familiar ground for Pietilä and form was a recurring concept in his texts.[61] 'Pietilä's form' can also be broken down into morphological categories: 1. abstract form—neutral and closed; 2. phenomenological form—animated and open, experience of 'being inside'; 3. communicating form—language analogies and metaphors; and 4. process phenomena—like forms created in nature by physical forces, cloud shapes, and typologies of arctic ice and snow. Phenomenological form includes both Alvar Aalto's Finlandia Hall and Pietilä's own Kaleva Church. Communicating form applies to Eliel Saarinen's Helsinki Railway Station and Pietilä's Metso Library in Tampere.[62] The images conjured up by these form categories are diverse, from weather phenomena to experiences of embracing space. But images were not sufficient; communication through language was needed.

When explaining the premises behind the design for Dipoli, Pietilä was quoted as saying that it was a 'composition where the nature is the creative artist and the sylvan *genius loci* its theme'.[63] The designer's description of the building was a poetic string of words, perhaps echoing the verbose design

process. The building seemed to be still in the process of becoming. This implied an unfinished quality, which closely integrated the building into its surroundings. Like the forest next to it, the building underwent change. Calling the building 'a materialized sketch' implied that the design process was not a linear event with a clear end. It was instead a series of intertwined

happenings, both verbal and visual, in which the designers simply took part, enabling the growth of a building, almost as a living thing. It is no surprise that the designers compared the building to a prehistoric animal.[64] The spatial experience was likened to being inside an enormous creature. The building was a cave, in the earth, with space flowing around it like the water of a brook around stones. The long geological history of the site was also referred to; Pietilä mentioned the ice age and the geomorphic powers this epoch represented. References to nature were many, geomorphic and zoomorphic alike.[65]

As a rule, descriptions of Pietilä's architecture make reference to nature. It was considered an inspiration, or the formal language was thought to be derived from it—buildings mirroring nature. For example, the unrealized Malmi Church project has been recalled as including 'granite stranded by the glacial drifts', thus expressing Pietilä's ecologically explorative nature.[66] Such descriptions also reflect Pietilä's own explorations of a design site's long

Figures 4 (left page) & 5. Raili & Reima Pietilä, Metso Library, Tampere (1986). The main entrance steps lead visitors to a domed entrance hall. Its light-blue ceiling echoes the sky beyond; at times the contrast of light and dark may make the oculus seem like the moon in the twilight sky. Photos by the author, 2008 and 2011.

geological history. Nature was the material basis; the buildings grow out of the landscape. Pietilä was regarded as being in direct contact with the *genius loci*. This required a sensitivity to morphology, an attitude reflected in the language he used to describe his designs.[67]

As in the case of Saarinen and Aalto, an unexacting nature label has also sometimes been applied to Pietilä's architecture. The abundant references to nature have even been referred to as a 'nature cult'. Sigfried Giedion was a particularly influential disseminator of such ideas, and reinforced the notion of a Nordic closeness to nature, which was linked to irrationality or even mysticism.[68] The connection to nature was easily assumed, since the architects and architecture critics readily made references to forests and materials like wood and stone. The words, of course, form different images in the minds of readers, depending on the cultural context. This was something Pietilä himself was aware of when describing the forest imagery behind his design thinking. The taken-for-granted attitude towards a concept like 'closeness to nature' when describing Finnish architecture often resulted in a disregard for other equally important elements, as Roger Connah has pointed out in the case of Pietilä.[69] This was equally true for Eliel Saarinen and Alvar Aalto. The Finnishness in their architecture defies simplistic interpretations. While the buildings may be rooted in the surrounding nature, which required an understanding of local conditions, however, simply concluding that the background of a design is locally derived overlooks the many influences on each design process.

In addition to the obvious nature references and noted connection to the earth, Pietilä's architecture, especially the Dipoli building, has been regarded as displaying similarities to an earlier style of architecture: national romanticism and its solidness.[70] Such links have also been mentioned in evaluations of the president's residence in Mäntyniemi, since its organic architecture emphasizes natural materials and forms. In describing it, Connah uses language rooted in the land and its history: 'glacial rock and ruptured spring ice'.[71] Some critics have even gone beyond references to distant, bygone geological eras and added fantastical elements to their comments, claiming that Mäntyniemi was designed for elves or calling the Dipoli building a home for goblins.[72] The fantastical elements were partially intended as criticisms of the 'nature architecture'[73] that Pietilä espoused, but also succeeded in strengthening the unique connection to Finnish culture and its myths. The mythical element, of course, is visible at times in assessments of Saarinen

and Aalto's architecture as well. With Pietilä, this seems almost fitting, given the unique way his texts immerse themselves in the enigmatic dimensions of the Finnish forest landscape. Like Saarinen and Aalto before him, Pietilä obtained his principles of architecture from nature and the laws of universal order. This is close to Saarinen's claim that the universal principle of organic order is 'the fundamental principle of architecture in all of creation'. Such general statements also harken back to similar claims by architect-writers in history. In Pietilä's case, the claim is juxtaposed with counterclaims, which do not contradict the message, but show the multifaceted approaches to architectural interpretations. For him, there were many architectures.[74]

CONCLUSION: NATURE CULT AND THE DESIGN PROCESS

The 'nature cult' attribution is apparent in the assessments of the work of all of the three Finnish architects studied. When the reception of their architecture includes the nature theme associated with Finnishness, the northern nature stereotype with its attributes of mystery is often referred to as well. Eliel Saarinen, Alvar Aalto, and Reima Pietilä, in turn, all had to deal with the fantasy attribution, which links their buildings to forest myths and the magical power of original nature. The interpretations frequently present the connection to nature as one main explanation for the architectural outcome. Nature is connected to Finnishness, and thus to the architecture. The interpretations, however, tend to simplify and offer easy explanations that capture the imagination. Rational explanations or philosophy are overshadowed by the mysterious.

The three architects studied were naturally aware of the previous generation's architectural accomplishments, which the writers of their biographies have duly noted. All three architects were familiar with architectural history and shared knowledge of Finnish nature. All of them made references to nature in their texts. Yet, they did not emphasize it in quite the way that some interpreters of their architecture have tended to do. The architects themselves acknowledged the importance of nature as a premise in their individual design processes, but also utilized other, more international or universal influences. They could be slightly amused or even irritated by simplistic interpretations.

As Petra Čeferin has noted, the overemphasized nature rhetoric in connection with twentieth-century Finnish architecture was criticized from the 1960s onwards, when nature and archaic primitiveness were no longer seen

as the main sources of Finnish architecture. They were replaced by functionality, technology, and artistic power. Sensitivity to nature was simply one factor among many. Roger Connah has stated that even before the 1960s, architects in Finland avoided identification with nature, although foreign interpreters almost always associated Finnish architecture with nature. According to Connah, Finns preferred to talk about landscape rather than nature, because the former term did not have the same baggage as the latter. Likewise, Čeferin has pointed out that the international media was most interested in expressing Finnishness, while the Finns themselves emphasized international influences in their country's architecture. This was not seen as a confrontation, but rather as a successful combination of opposites. She has also referred to Giedion's suggestion that Finland is a country with a dualistic character, due to its location between East and West. Duality resulted in an ability to merge reasoning and imagination.[75] With this assessment, the strangely contradictory evaluations of Saarinen's skyscraper competition proposal become understandable. Indeed, they merged reasoning and imagination by combining technological inventions with folklore and fantasy.

The design approaches of the three architects were as unique as their architecture was specifically recognizable as their own. There were no master-apprentice relationships between them, even if they are all well-known characters in the ongoing story of Finnish architecture. While the land and its nature gave them one specific design premise, it does not directly explain their design choices. Nevertheless, the artistic power of their work seems to be linked to nature, and the inspiration it provided was noted by the writers of the architects' biographies; nature analogies abound in descriptions of their architecture. The architects themselves referred to nature as a source of inspiration, but here the nature was often universal in character, not only Finnish. All three architects had international careers as well, and thus needed to have a sensitivity to the specific context in each design task. The Finnish forest may have been the childhood landscape that these writers carried with them, but the nature they referred to was both place-specific and universal.

There thus seems to be a duality in this attitude to nature. Natural order was universal, and the biological premises for design could be approached analytically with conscious intent. The forest experiences in the Finnish landscape in childhood were more subconscious. As design premises they could be taken for granted, did not require explanation. Their significance was subtle and entwined with the unknowable in the design process. This

quality was easily associated with the mystery of Finnish nature, or even capricious playfulness; characters and aspects of fairy tales supplemented the creative process. When the fantasy element is not directly connected to the architecture but instead used to describe the unknown qualities of the architectural design process, it becomes a useful, descriptive metaphor for the process of artistic creativity. The fantasy comparisons in evaluations of their architecture, which might seem far-fetched and exaggerated, are better utilized when linked with the intuitive qualities of architectural design. One does not need to make the design process unnecessarily mysterious, but a sense of whimsical imagination and the creative power of intuition are nonetheless hinted at in the fantasy references—even ones expressed in criticism. The unique individuality of the design process is thus intricately linked to both universal premises like natural order and the inspired means of artistic creation.

NOTES

[1] Christian Norberg-Schulz, *The Concept of Dwelling* (New York: Electa / Rizzoli, 1985), pp. 9 and 12.

[2] Petra *Čeferin, Constructing a Legend: The International Exhibitions of Finnish Architecture 1957–1967* (Helsinki: The Finnish Literature Society SKS, 2003), p. 127.

[3] Heikki Mikkeli, 'Takaisin luontoon – Valistuksen ja romantiikan ajan luontosuhteen paradokseja ja kehityslinjoja', in *Kaupunkikuvia ajassa*, edited by Timo Joutsivuo, and Markku Kekäläinen (Helsinki: The Finnish Literature Society SKS, 2005), p. 254.

[4] Kaisa Broner, *Visions of Architecture—Arkkitehtuurin visiot* (Helsinki: Oku Publishing Oy, 2019), pp. 32–33, 38–41, and 123; Malcolm Quantrill, *Alvar Aalto: A Critical Study* (Helsinki: Otava, 1983), pp. 74, 93, 143, 170, and 229; Göran Schildt, *Valkoinen pöytä: Alvar Aallon nuoruus ja taiteelliset perusideat* (Helsinki: Otava, 1982), pp. 160–62. It must be noted that the three architects had wives who were educated in art and/or architecture and collaborated in their design work. This article, however, concentrates on written texts, which are generally credited to one individual author.

[5] Malcolm Quantrill, *Reima Pietilä* (Helsinki: Otava, 1984), p. 21.

[6] Pietilä, cited in Malcolm Quantrill, ed., *One Man's Odyssey in Search of Finnish Architecture: An Anthology in Honour of Reima Pietilä* (Helsinki: Building Information Institute, Building Book Ltd., 1988), p. 8.

[7] Quantrill, *Reima Pietilä*, p. 6.

[8] Aristotle already mentioned the idea of a connection between nature and architecture. Vitruvius and Leone Battista Alberti also made use of nature in their architecture theory. See Hanno-Walter Kruft, *A History of Architectural Theory from Vitruvius to the Present*, trans. Ronald Taylor, Elsie Callander, and Antony Wood (New York: Princeton Architectural Press, 1994; German original *Geschichte der Architekturtheorie: Von der Antike bis zur Gegenwart*, 1985), pp. 25–26, 47, 333–36, and 399–400; also see, for example, John Ruskin, *The Seven Lamps of Architecture* (1849) and William Morris, *News from Nowhere* (1890).

[9] Anna-Lisa Amberg, '"Kotini on linnani" – kartano ylemmän porvariston omanakuvana', *The Finnish Antiquarian Society Journal* 111 (2003), p. 147.

[10] On Saarinen as a pedagogue, see Carl Feiss, 'Out of School', *Progressive Architecture* (January 1953), pp. 124–34. On Aalto's teaching experience, see Alvar Aalto, 'Artikkelin asemesta' in *Arkkitehti – Arkitekten* 1–2 (1958), p. 27; and Göran Schildt, ed., *Näin puhui Alvar Aalto*, (Helsinki: Otava, 1997), p. 185. On Pietilä on teaching, see Quantrill, *Reima Pietilä*, p. 162; and Marianne Lehtimäki, 'Conversational training in environmental knowledge', in *Hikes into Pietilä Terrain*, edited by Aino Niskanen, Sirkkaliisa Jetsonen, and Tommi Lindh (Helsinki: Taiteentutkija 4. Taidehistorian seura, and Rakennustaiteen seura, 2007), pp. 81–95.

[11] For condensed takes on design processes, see Eliel Saarinen, *The Search for Form in Art and Architecture* (New York: Dover Publications, 1985, first edition 1948), p. 316; Alvar Aalto, 'Taimen ja tunturipuro', in *Kosketuksia Alvar Aaltoon* (Jyväskylä: Alvar Aalto Museum, 1998, first published in 1947 in the Italian journal *Domus*), pp. 14–16, esp. p. 14; Reima Pietilä, 'Näkemisen maisema', *Arkkitehti – Arkitekten* 3 (1959), pp. 37–39; Pietilä, cited in Malcolm Quantrill, 'Reima Pietilä: An Alien Presence in his Native Land', in *Hikes into Pietilä Terrain*, pp. 127–37, esp. p. 127.

[12] For instance, Ritva Wäre, 'Rakennettu suomalaisuus: Nationalismi viime vuosisadan vaihteen arkkitehtuurissa ja sitä koskevissa kirjoituksissa', *The Finnish Antiquarian Society Journal* 95 (1991), pp. 90, 126, and 189; and Amberg, 'Kotini on linnani', p. 142.

[13] Pekka Korvenmaa, 'Forest and Metropolis: Some aspects of the development of Finnish

architecture from halfway through the 1890s up to the First World War', in *Finland Creators* (Punkaharju: Art Centre Retretti, 1992), pp. 122–49, esp. p. 126.

[14] Albert Christ-Janer, *Eliel Saarinen* (Chicago and London: The University of Chicago Press, 1979, first edition 1948), p. 75; Schildt, *Valkoinen pöytä*, pp. 160–62; Quantrill, *Alvar Aalto*, pp. 3–4, 7, 10–12, and 32.

[15] On Eliel Saarinen's architecture and career, see Albert Christ-Janer, *Eliel Saarinen*. On the years in Finland in particular, see Marika Hausen, Kirmo Mikkola, Anna-Lisa Amberg, and Tytti Valto, eds., *Eliel Saarinen, Suomen aika* (Helsinki: Otava, 1990). On Eliel Saarinen as a planner and urban designer in the United States, see Minna Chudoba, *Kaupunkia etsimässä – Eliel Saarinen Amerikassa 1923–1950* (Tampere: Tampere University of Technology, 2011).

[16] Gustav Nyström, cited in Ville Lukkarinen, 'Classicism and History: Anachronistic Architectural Thinking in Finland at the Turn of the Century. Jac. Ahrenberg and Gustaf Nyström', *The Finnish Antiquarian Society Journal* 93 (1989), pp. 31–44. Lukkarinen makes reference to Gustaf Nyström's unpublished manuscript (Museum of Finnish Architecture).

[17] Louis H. Sullivan, 'The Kindergarten Chats', in *Kindergarten Chats and Other Writings* (New York: Dover Publications, 1979, published in *The Interstate Architect and Builder* 1901–1902), pp. 17–174, esp. p. 43; Kruft, *A History of Architectural Theory from Vitruvius to the Present*, pp. 356–59. A link to Sullivan has been noted by Christ-Janer, *Eliel Saarinen*, pp. 10–11; Marika Hausen, 'Saarinen Suomessa', in Marika Hausen et al., *Eliel Saarinen, Suomen aika*, pp. 7–82, esp. pp. 60 and 77.

[18] Saarinen, *The Search for Form in Art and Architecture*, pp. 21, 29, 44–48, and 227.

[19] Ibid., pp. v, xii, 18, 26, 46–48, 109–12, and 121–33.

[20] Ibid., pp. 24–26, 65, 181–82, and 316.

[21] Marika Hausen, 'Gesellius–Lindgren–Saarinen at the turn of the century', *Arkkitehti – Arkitekten* 9 (1967), pp. 2–4 and 6–12, and 'Saarinen Suomessa', pp. 7–82.

[22] For example, Roy Slade, 'Introduction', in *Saarinen House and Garden: A Total Work of Art*, edited by Gregory Wittkopp (New York: Harry N. Abrams, 1995), pp. 9–16, esp. p. 14; Nancy Rivard Shaw, *Eliel Saarinen in America* (master's thesis, Wayne State University, Detroit, 1973), pp. 64–65, Cranbrook Archives; Lillian Swann Saarinen, 'A text addressed to Nancy Rivard', 1 June 1973, Correspondence between Christ-Janer and Albert, 2:1, Cranbrook Archives; Christ-Janer, *Eliel Saarinen*, pp. 48–51.

[23] Also see Louis H. Sullivan, 'The Chicago Tribune Competition' in *The Testament of Stone: Themes of Idealism and Indignation from the Writings of Louis Sullivan*, edited by Maurice English (North Western University Press, 1963, first published in *The Architectural Record* [February 1923]), pp. 63–70; Thomas Tallmadge, *The Story of Architecture in America* (New York: W.W. Norton & Company, 1927), pp. 291–93; Thomas A. P. van Leeuwen, *The Skyward Trend of Thought: The Metaphysics of the American Skyscraper* (Cambridge, MA: The MIT Press, 1990, first edition 1988), p. 29.

[24] Tallmadge, *The Story of Architecture in America*, pp. 291–93; Sullivan, 'The Chicago Tribune Competition', pp. 63–70.

[25] J. S. Sirén, 'Eliel Saarinen', a text for the publication accompanying Eliel Saarinen's retrospective exhibition, Taidehalli, 1 to 11 June 1955, pp. 9–13. Museum of Finnish Architecture.

[26] Gustaf Strengell interview titled 'Byplan och moderne Arkitektur', Danish article by A. W., in an unnamed and undated journal, Museum of Finnish Architecture. The influences mentioned include, for example, William Morris, M. H. Baillie Scott, Camillo Sitte, and Otto Wagner.

[27] Alvar Aalto, 'Esipuhe', in Christ-Janer, *Eliel Saarinen*, pp. 9–11.

[28] Schildt, *Valkoinen pöytä*, pp. 160–62; Quantrill, *Alvar Aalto*, pp. 3, 15, and 19.

[29] J. Kaipia, cited in Peter MacKeith, 'Profeetta omassa maassaan', *Helsingin Sanomat Kuukausiliite* 2 (1998), pp. 44–47, esp. p. 46; Schildt, *Valkoinen pöytä*, pp. 197–200; Göran Schildt, *Inhimillinen tekijä: Alvar Aalto 1939–1976* (Helsinki: Otava, 1990), p. 321; Göran Schildt, *Nykyaika: Alvar Aallon tutustuminen funktionalismiin* (Helsinki: Otava, 1985), p. 230; Quantrill, *Alvar Aalto*, p. 6.

[30] Aalto, 'Artikkelin asemesta', p. 27; Aalto, cited in Kirmo Mikkola, 'Aalto the Thinker', *Arkkitehti – Arkitekten* 7–8 (1976), pp. 22–23; Aalto, cited in Schildt, *Näin puhui Alvar Aalto*, p. 185.

[31] Aalto, 'Taimen ja tunturipuro', pp. 14–16, esp. p. 15.

[32] Quantrill, *Alvar Aalto*, p. 5.

[33] Saarinen, *The Search for Form in Art and Architecture*, p. 299.

[34] Aalto, cited in Schildt, *Näin puhui Alvar Aalto*, pp. 108 and 266–67; Aalto, cited in *The Use and the Abuse of Paper: Essays on Alvar Aalto*, edited by Kari Jormakka, Jacqueline Gargus, and Douglas Graf (Tampere: Tampere University of Technology, DATUTOP 20, 1999), pp. 89 and 92.

[35] Alvar Aalto, 'Kansallinen – kansainvälinen', *Arkkitehti – Arkitekten* 7–8 (1967), p. 7.

[36] Christian Norberg-Schulz, 'The Way of Reima Pietilä', in Quantrill, *One Man's Odyssey in Search of Finnish Architecture*, pp. 12–17, esp. p. 12.

[37] Schildt, *Inhimillinen tekijä*, p. 220.

[38] Aalto, 'Taimen ja tunturipuro', pp. 14–16, esp. p. 14. On Italian influences, also see Quantrill, *Alvar Aalto*, pp. 38–39, 40, 134, and 167; Schildt, *Valkoinen pöytä*, p. 168.

[39] For example, Säynätsalo Town Hall, see Schildt, *Inhimillinen tekijä*, pp. 158 and 208, or the Muurame Church in an exaggerated hilly landscape, see Schildt, *Valkoinen pöytä*, p. 144.

[40] Leonardo Mosso, 'Alvar Aalto', in *The Thames and Hudson Dictionary of 20th Century Architecture* (London, and New York: Thames and Hudson, 1996, originally published in 1963 as *Encyclopaedia of Modern Architecture*), p. 10; Quantrill, *Alvar Aalto*, pp. 3 and 73. On the Francis of Assisi comparison, see Carlo Raghianti according to Schildt, *Inhimillinen tekijä*, p. 219.

[41] Čeferin, *Constructing a Legend*, p. 127.

[42] Sigfried Giedion, *Space, Time and Architecture: The Growth of a New Tradition* (Cambridge, MA: Harvard University Press, 1967, 5th edition, revised and expanded, first edition 1940), pp. 620–21. 'Wizard of the north'—Giedion's expression, cited in Marianna Heikinheimo, *Architecture and Technology: Alvar Aalto's Paimio Sanatorium* (PhD thesis, Aalto University, 2016), p. 134, with reference to Giedion's letter to Aalto of 6 December 1933.

[43] Aalto 1925, cited in Schildt, *Valkoinen pöytä*, p. 207; Aalto, cited in Schildt, *Inhimillinen tekijä*, p. 294.

[44] Aalto, 'Taimen ja tunturipuro', p. 15; Aalto, cited in Mikkola, 'Aalto the Thinker', p. 23; Alvar Aalto, 'Porraskiveltä arkihuoneeseen', in *Kosketuksia Alvar Aaltoon* (Jyväskylä: Alvar Aalto Museum, 1998, first published in Finnish in *Aitta* 1 [1926]), pp. 8–12; Schildt, *Valkoinen pöytä*, p. 227; Schildt, *Inhimillinen tekijä*, p. 161; Mosso, 'Alvar Aalto', p. 10.

[45] Aalto, cited in Jormakka et al., *The Use and the Abuse of Paper*, p. 38.

[46] Juhani Pallasmaa, 'Tektonisuudesta maalauksellisen arkkitehtuuriin', in *Kosketuksia Alvar Aaltoon* (Jyväskylä: Alvar Aalto Museum, 1998), pp. 36–47 and 51; Aalto, 'Taimen ja tunturipuro', p. 15; also see Lauri Louekari, 'Architecture of the Forest: Observations on the relationship between spatial structures in architecture and natural spaces', *Nordic Journal of Architectural Research* 3 (2008), pp. 98–113, esp. p. 103.

[47] Mikkola, 'Aalto the Thinker', pp. 22–23; Quantrill, *Alvar Aalto*, pp. 23 and 100; Schildt, *Valkoinen pöytä*, p. 183; Schildt, *Inhimillinen tekijä*, pp. 273–74; Schildt, *Nykyaika*, pp. 221–22.

[48] Jormakka et al., *The Use and the Abuse of Paper*, p. 88.

[49] In Finnish, 'Aallon ilmasto', in Quantrill, *Reima Pietilä*, p. 21.

[50] Roger Connah, *Writing Architecture* (Helsinki: Rakennuskirja Oy, 1989), pp. 42–44, 47, and 55.

[51] Louekari, 'Architecture of the Forest', p. 104; also see Norberg-Schulz, 'The Way of Reima Pietilä', pp. 12–13.

[52] Connah, *Writing Architecture*, pp. 23 and 37. Connah is a Pietilä interpreter who is well suited to the task. *Writing architecture* is an extensive collection of notes, philosophical quotes, and fragments of art and literature that captures the twentieth-century culture that Pietilä was influenced by—and which he influenced himself.

[53] Connah, *Writing Architecture*, pp. 35 and 112; Aino Niskanen, 'Foreword', in *Hikes into Pietilä Terrain*, pp. 6–7, esp. p. 6; also see Reima Pietilä, 'Local—non-local', *Arkkitehti – Arkitekten* 7–8 (1967), pp. 23–24, esp. p. 24; Reima Pietilä, 'Arkkitehtuuri, estetiikka, yhteiskunta, ideologia', *Arkkitehti – Arkitekten* 1 (1973), pp. 56–59, esp. p. 59; Pietilä, cited in Timo Koho, *Reima Pietilä – 'Kaipasin muunlaista ajan tunnetta'* (Helsinki: Painatuskeskus, 1995), pp. 70–71 and 85.

[54] Niskanen, 'Foreword', pp. 6–7; Pietilä, cited in Connah, *Writing Architecture*, p. 78; Pietilä, in *Pietilä – Modernin arkkitehtuurin välimaastossa – Intermediate Zones in Modern Architecture*, ed. Marja-Riitta Norri, Roger Connah, Kari Kuosma, and Aaro Artto (Helsinki and Jyväskylä: Museum of Finnish Architecture and Alvar Aalto Museum, 1985), pp. 7–8.

[55] Connah, *Writing Architecture*, pp. 29–30; Koho, *Reima Pietilä*, pp. 7 and 115; Pekka Passinmäki, 'Studio talk', in *Hikes into Pietilä Terrain*, pp. 54–56.

[56] Pietilä according to Quantrill, 'Reima Pietilä: An Alien Presence in his Native Land', pp. 127–37, esp. p. 127.

[57] Pietilä, cited in Broner, *Visions of Architecture*, pp. 32–33 and 38–41. For illustration examples, see Reima Pietilä, 'Maisema ja rakentumismuodot', *Arkkitehti – Arkitekten* 4 (1968), pp. 30–31.

[58] Reima Pietilä, 'Pure Architecture', in *Hikes into Pietilä Terrain* (notes recompiled and proofread by J. Mänty and G. Griffiths), pp. 116–17; Pietilä, 'Local—non-local', pp. 23–24; Pietilä, cited in Norberg-Schulz, 'The Way of Reima Pietilä', p. 12. See also Connah, *Writing Architecture*, p. 85; Broner, *Visions of Architecture*, p. 183; Niskanen, 'Foreword', pp. 6–7.

[59] Pietilä, 'Vastaavuuspeli', *Arkkitehti – Arkitekten* 5 (1967), p. 37; Pietilä, 'Harrastekoirat', *Arkkitehti – Arkitekten* 6 (1967), pp. 22–24; Pietilä, cited in T. H. Mäkelä, 'Reima Pietilä and Designing Immanence', in *Hikes into Pietilä Terrain*, p. 46. On the idea of 'drawing in Finnish', see Gareth Griffiths, '"Drawing in Finnish"? Notes on Cultural Relativism', *Gender of Space*, edited by in Jorma Mänty (Tampere: Tampere University of Technology, DATUTOP 21, 2001), pp. 17–35.

[60] Reima Pietilä, and Raili Paatelainen, 'Dipoli', *Arkkitehti – Arkitekten* 9 (1967), pp. 4–5 and 14–19, esp. p. 19.

[61] Ibid., p. 14; Pietilä, 'Arkkitehtuuri, estetiikka, yhteiskunta, ideologia', pp. 56–59, esp. p. 56.

[62] Pietilä, cited in M-R. Norri et al., eds., *Pietilä – Modernin arkkitehtuurin välimaastossa – Intermediate Zones in Modern Architecture*, p. 127. Originally from the SAFA seminar 'Design Sense of the 80s', 1984.

[63] Pietilä, cited in Louekari, 'Architecture of the Forest', p. 103; see also Norberg-Schulz, 'The Way of Reima Pietilä', p. 12.

[64] Pietilä and Paatelainen, 'Dipoli', pp. 4–5 and 14–19, esp. p. 4; Pietilä, cited in Quantrill, *Reima Pietilä*, p. 50.

[65] Pietilä, cited in Quantrill, *Reima Pietilä*, pp. 55–56.

[66] Connah, cited in Quantrill, 'Reima Pietilä: An Alien Presence in His Native Land', pp. 127–37, esp. p. 133; on the Malmi Church example, see p. 135. Also see Broner, *Visions of Architecture*, pp. 187 and 191.

[67] Riitta Kuoppamäki, *Arkkitehtonisen tilan aineellisuus: Johdatus kaupungin uudelleen ajatteluun* (Kaupunki arkkitehdin ajatuksissa 5, Espoo: TKK, Yhdyskuntasuunnittelu, 1993), p. 147; Norberg-Schulz, 'The Way of Reima Pietilä', pp. 12–14; Olli-Paavo Koponen, 'Finnishness in Reima Pietilä's Architecture', in *Hikes into Pietilä Terrain*, p. 139; Quantrill, *Reima Pietilä*, pp. 49 and 82; Connah, *Writing Architecture*, pp. 78 and 98.

[68] Čeferin, 'In Pursuit of Finnishness: The Foreign Press on Finnish Architecture, 1957–67', *Arkkitehti* 1 (2004), pp. 12–23, esp. p. 21; with reference to Jiří Siegel for coining the term 'nature cult', also see Giedion, *Space, Time and Architecture*, pp. 620–21.

[69] Pietilä, according to Connah, *Writing Architecture*, p. 114; Connah, *Writing Architecture*, pp. 98 and 103. Also see Olli-Paavo Koponen, 'Finnishness in Reima Pietilä's Architecture', pp. 139–42, esp. p. 139. Koponen has pointed out that Pietilä had connections to international regionalist thinking, something that was not often noted in Finland.

[70] Quantrill, *Reima Pietilä*, p. 56.

[71] Connah, *Writing Architecture* (pp. 99–100) connects the Paris pavilion (1900, by Gesellius, Lindgren, Saarinen) with Pietilä's 1983 competition entry for the president's residence in Mäntyniemi. He saw the visual expression of Finnish identity in both projects. The leap from national romanticist architecture directly to Pietilä was made with no mention of Aalto, since earlier tradition was common knowledge for Finnish architects. Nevertheless, Aalto's influence is regarded as considerable.

[72] Kai Wartiainen, cited in Anu Uimonen, 'Arkkitehti Kai Vartiainen arvostelee presidentin uutta virka-asuntoa – "Maahisen maja, jonne muuttaa matkailukeiju"', in *Helsingin Sanomat* (2 September 1992); Ritva Kaje, Reima Pietilä, Asko Salokorpi, and Hannu Taanila, 'Parnasson kyselytunti: Reima Pietilä', *Parnasso* 4 (1967), pp. 189–95; also see Koho, *Reima Pietilä*, pp. 8 and 60.

[73] In Finnish 'luontoarkkitehtuuri', a term used by Pietilä starting in the 1980s. See Broner, *Visions of Architecture*, p. 123; Norri et al., *Pietilä – Modernin arkkitehtuurin välimaastossa*, pp. 24–25.

[74] Pietilä, 'Pure Architecture', pp. 103–24, esp. pp. 104–05; Pietilä, 'Vastaavuuspeli', p. 37; Pietilä according to Connah, *Writing Architecture*, p. 49. Also see Saarinen, *The Search for Form in Art and Architecture*, p. 27.

[75] Čeferin, 'In Pursuit of Finnishness: The Foreign Press on Finnish Architecture, 1957–67', pp. 21–23; Čeferin, *Constructing a Legend*, pp. 13–17 and 124–27; Connah, *Writing Architecture*, p. 53; Giedion, *Space, Time and Architecture*, pp. 549 and 618–21. The ability to successfully

combine opposites is mentioned most often in assessments of Alvar Aalto's architecture. For mentions of local—non-local or national—international, see the articles in *Arkkitehti* 7–8 (1967): Pietilä, 'Local – non-local', pp. 23–24; Aalto, 'Kansallinen – kansainvälinen', p. 7.