

Aalto's Reprise and Continuity: A study of the design process for three churches in the 1950s

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Abstract:

Much has already been learned from Aalto's architecture through careful study and analysis, but a clear understanding of the architect's design process and sketches has remained much more elusive. Aalto's undated sketches and drawings are often deemed too difficult to analyze and interpret in meaningful ways. To better understand how and not just what Aalto designed, this study makes extensive use of undated drawings and sketches as key primary materials from the Alvar Aalto Archive. Expanding on a previous study focused solely on Vuoksenniska Church, this work examines three of Aalto's churches from the 1950s, namely those in Seinäjoki, Vuoksenniska, and Wolfsburg. Sketches from the three projects are compared and discussed to show how a thorough analysis of Aalto's sketches leads to new, more detailed insights. For example, Aalto's sketches show how the three churches could be realized as distinct projects, even though the earliest sketches for each project were similar. Any similarities in the formal elements of these three churches are strongly rooted in their sketches and drawings. While previous writing has already stressed Aalto's tendency for the simple repetition of elements, Aalto's sketches show not only what, but how specific forms and ideas could be reprised from one project to another, and then subsequently varied and adjusted. These specific forms are defined as Aalto's basic elements or architectural prototypes in this study. This process of reprising and adjusting basic elements for different projects establishes continuity in Aalto's design process, and also echoes Aalto's ability to establish continuity across different scales. In addition to studying Aalto's built work, Aalto's design process can still offer simple but valuable lessons for making lasting value and harmony in architecture.

Author's Biography:

Mihoko Ando is an architect and PhD Candidate in Kyoto University, Japan. Her doctoral studies have concentrated on Alvar Aalto's design process for furniture and architecture, with a particular focus on his churches in the 1950s. Throughout her studies, she has visited and photographed over 50 Aalto buildings in Europe. From 2011-12, she was a visiting researcher at the Alvar Aalto Academy and in Aalto University from 2011-16. She has presented her work on Aalto in both Japan and Finland, and also published her work in the proceedings of the Architectural Institute of Japan, and in Architectural Research Quarterly through Cambridge University Press.

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1. Introduction

An architect's design process and architectural ideas are best understood through their sketches and drawings. Within the substantial body of literature related to Aalto, however, the approximately 100,000 sketches and drawings archived in the Alvar Aalto Museum have been used to relatively limited effect. In addition to Aalto's buildings and design products, research has been primarily based on other important sources: Aalto's letters, written work and various presentations (Aalto, 1998), the architect's official three-part biography by close friend Göran Schildt (1984; 1986; 1991), interviews with Aalto's friends, family, and acquaintances (Lahti, 2001); or interviews with former Aalto Studio staff (Charrington and Nava, 2011). Compared to many of Aalto's undated sketches and drawings, these previous sources are in many regards easier to access and interpret. At the same time, they can be somewhat disconnected from Aalto's architectural ideas relative to the raw sketches produced in the design process itself. With more in-depth study of Aalto's design process through sketches and drawings, we might come to better understand how Aalto's work was designed and developed, and at the same time find deeper understanding and insight into Aalto's architecture.

The broader goal of my current doctoral research is to better understand Aalto's design process for furniture and architecture. The subject of the present article is Aalto's architectural design process, with a purpose to better understand not only what, but also how Aalto repeatedly made such lasting value and harmony in architecture. As the author's previous work has already discussed the design process for Vuoksenniska Church in detail (Ando, 2017), this study considers a broader scope of three projects to show how Aalto's design process could be interrelated between projects. The focus of this article is Aalto's design process for three churches in the 1950s: namely those in Seinäjoki, Vuoksenniska, and Wolfsburg (Fig.1). These projects are well known, and together illustrate how the 1950s were both productive and especially important years for Aalto. While Hewitt (1989) has discussed Aalto's technique or method of drawing and sketching, in this study special attention and emphasis is given to the complementary and interrelated nature of Aalto's design process for different projects.

For the challenging task of sorting and interpreting Aalto's many undated sketches, previous doctoral research on Seinäjoki Church (Charrington, 2008) and on Wolfsburg Church (Müller, 2008) have been used as important secondary sources. These are key references for understanding themes and topics in the background of the design process. But without sketches and drawings, we cannot discuss or illustrate Aalto's ideas and realization of architectural form. With the support of such previous studies based on more conventional material like archived letters and interviews, this study therefore builds on previous Aalto research, with more detailed consideration of the architect's sketches and drawings. This type of detailed study complements more general narratives and texts that address Aalto's work over several decades or the architect's entire career. In such previous studies authors are generally limited in the depth of their investigation, and have usually only shown an isolated design sketch or drawing. As we will see herein, Aalto's sketches and drawings are complementary not only in a given project, but also between projects, and need to be considered together in relation to one another. In studying Aalto's design process in its entirety, as illustrated through many sketches and drawings for a given project or for several projects, key architectural ideas and methods can be discussed and clarified.



Fig.1. Exterior views of Seinäjoki Church (left), Vuoksenniska Church (middle), and Wolfsburg Church (right).

2. Background

Alvar Aalto realized seven churches throughout his career. The three churches examined in this study are all Lutheran churches, but have different backgrounds and origins in their realization. In the first case, Seinäjoki Church, located in western Finland and officially named *Lakeuden Risti* (Cross on the Plains), began as a competition entry in 1951 (ARK, 1952). In the early 1950s the city of Seinäjoki had a population of about only 14,000 people, but was also expanding significantly and seeking to become the new center for regional Diocese (Aaltonen, 2005). The competition for a new large-scale church with 1,200 seats attracted forty-five submissions, but Aalto's entry was actually disqualified as the proposal exceeded the site line, even though it was deemed the best entry (Charrington, 2008). Aalto's plans, however, were subsequently bought following the competition, while Seinäjoki's bid to become the center for regional Diocese

was unsuccessful. In light of this result, and in combination with the project's scale, significant time was needed to raise alternative funds and organize donations after the initial competition (Aaltonen, 2005). The Seinäjoki project was therefore built much later from 1957-59, and included a prominent bell tower and eventually parish hall facilities.

Compared to a competition entry, Vuoksenniska Church or *Kolmen Ristin Kirkko* (Church of the Three Crosses) was directly commissioned in the mid 1950s after the Aalto Studio developed a masterplan for the Imatra region in eastern Finland. At that time, Imatra was a growing industrial center after relocating industries there, mainly from Viipuri, following the Second World War. Aalto considered spaces for social activities in such industrial settings to be of importance (Aalto, 1959). Vuoksenniska Church, its bell tower and nearby vicarage were designed from 1955-6 and built from 1956-8, immediately following the design process (Aalto, 1959). Vuoksenniska Church was therefore designed after, but constructed and completed before Seinäjoki Church.

In the case of Wolfsburg Church in northwestern Germany, which is officially named *Heilig Geist Kirche* (Church of the Holy Ghost), the church began with a simple letter to Aalto from Pastor Erich Bammel of Wolfsburg. He contacted Aalto personally in the summer of 1958 after seeing the recently completed church in Vuoksenniska (Müller, 2008). In post-war Germany, Wolfsburg was rapidly developing with a booming automotive industry, in turn requiring additional infrastructure, housing and associated buildings (Kuhlmann, 2014). By the late 1950s, several modern churches had also already been built in Wolfsburg, creating a supportive context for new types of modern church design (Müller, 2008). The design process for Wolfsburg Church, its bell tower and town hall buildings spanned from 1958 to 1961, with construction also starting in 1961 and lasting until the official opening in 1962. With a much smaller scale than Vuoksenniska Church and especially Seinäjoki Church, the Wolfsburg project was built relatively quickly.

These three churches together provide illustrative examples of Aalto's design process and build work throughout the 1950s, including design work for both competitions and commissions. Despite their differences in background and general location, the common thread in the context and setting for each project can be seen as a growing population and expanding urban condition. The interrelated nature of the three projects' origins foreshadows how early ideas in the design process for each project could also be highly interrelated and connected.

3. Method and Materials

An established research method is deployed throughout this paper, based on first sorting and presenting a general overview of the design process for each project (Figs.2-4). In this approach, organizing and identifying vital material from the Alvar Aalto Museum archives is crucial. Ando (2017) has illustrated this method in previous work focused solely on Vuoksenniska Church, where a significant number of key Aalto sketches for the church were first presented and then discussed in more detail according to key design themes and ideas. Here, instead of focusing on a single project, only a general overview of each design process is discussed, as the purpose of this study is to highlight the related aspects in Aalto's design process for different projects. In this study Aalto's sketches are considered as actual working illustrations in a design process, instead of as old visual artifacts. The sketches represent an active flow and development of ideas and parallel strands within a design process for a particular building or project. What is essential is to consider the design process as a whole, where different design sketches are seen in relation to one another. This study also considers three projects together to offer a new breadth of insight. Just as sketches within a design process are complementary and related one another, comparing and establishing relationships in Aalto's design process for different projects can lead to a new understanding of Aalto's architecture and way to design.

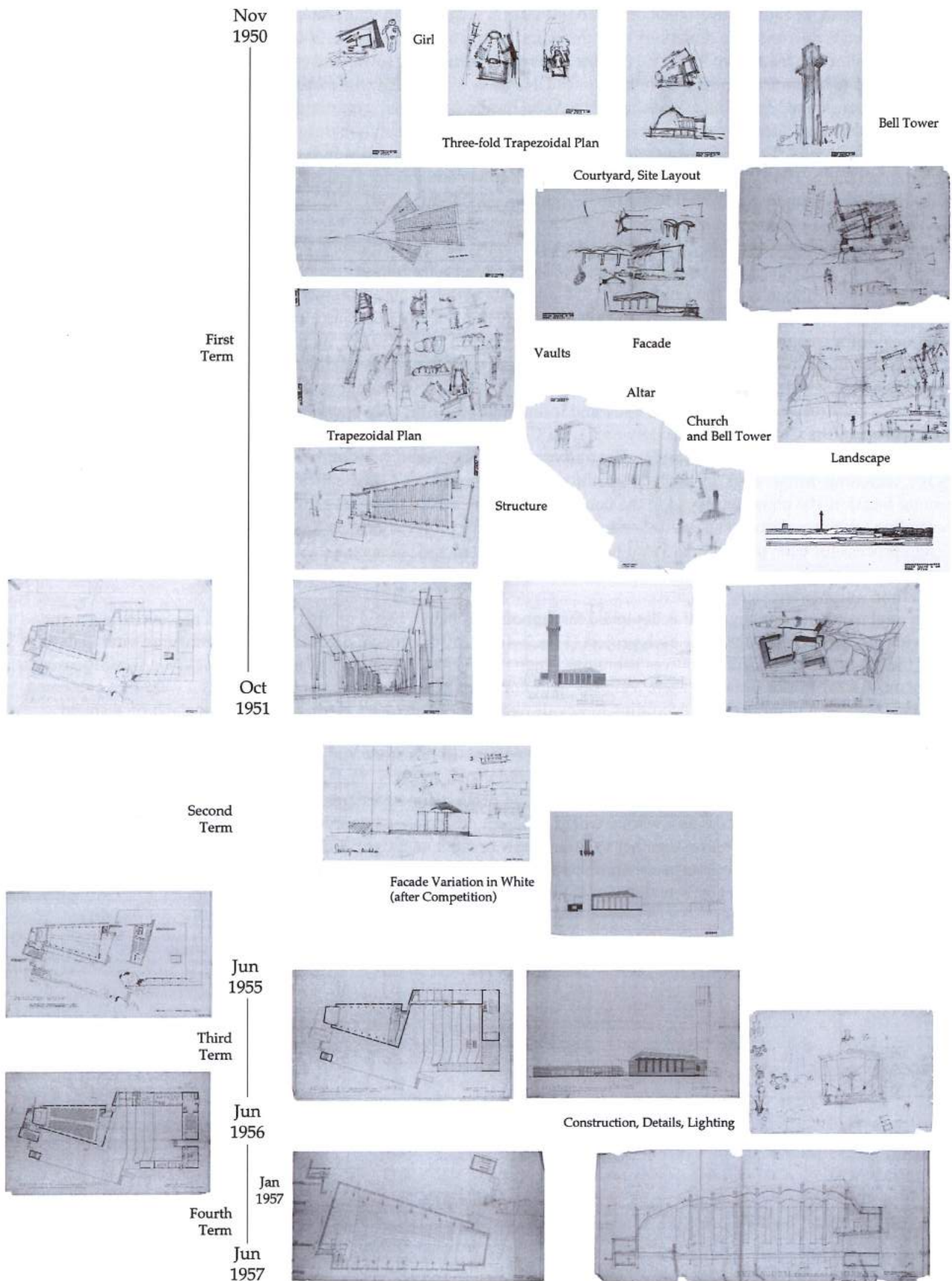


Fig.2. The approximate timeline of the design process for Seinäjoki Church showing Aalto's most significant sketches and drawings.

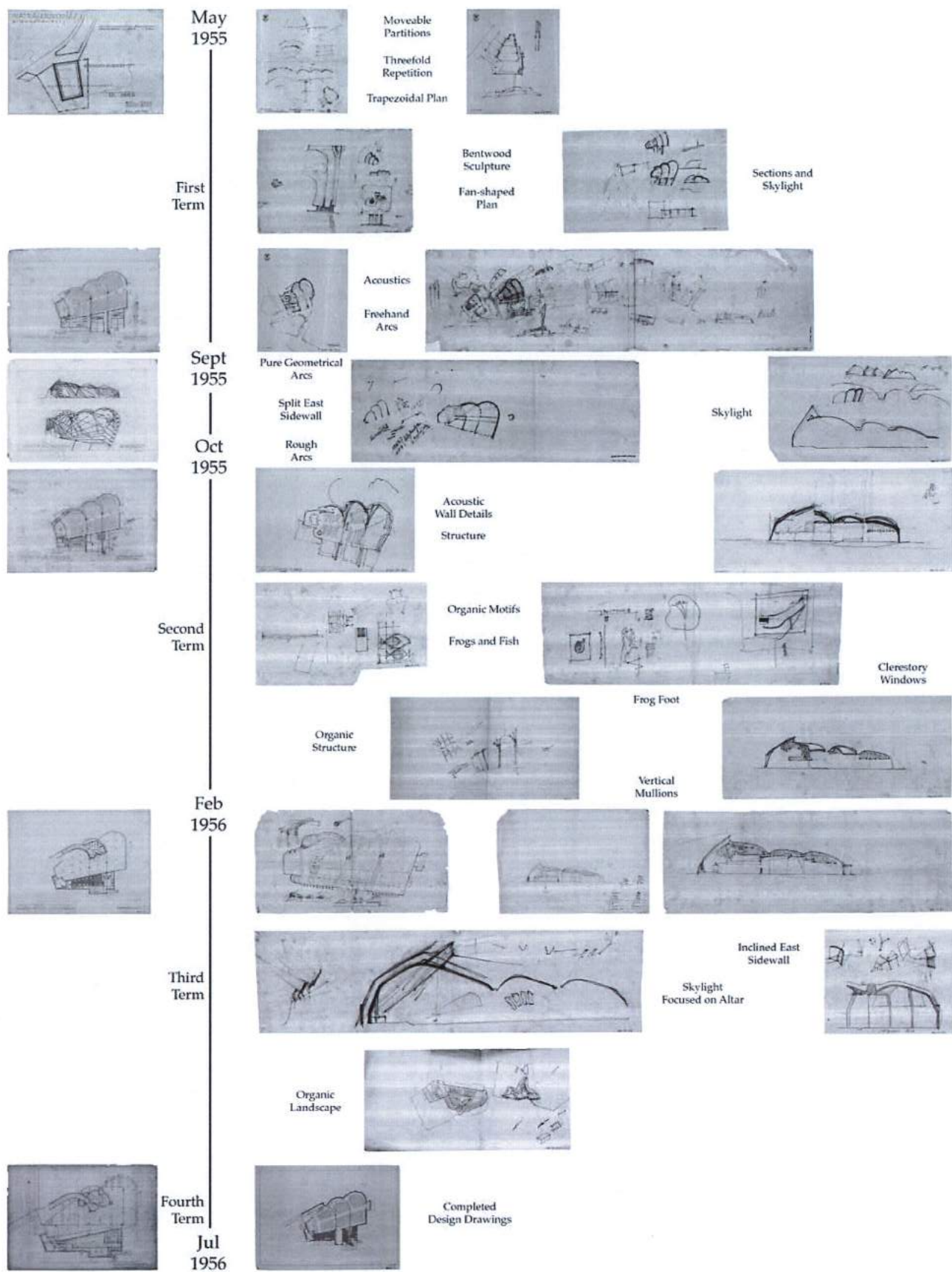


Fig.3. The approximate timeline of the design process for Vuosenniska Church showing Aalto's most key sketches and drawings.

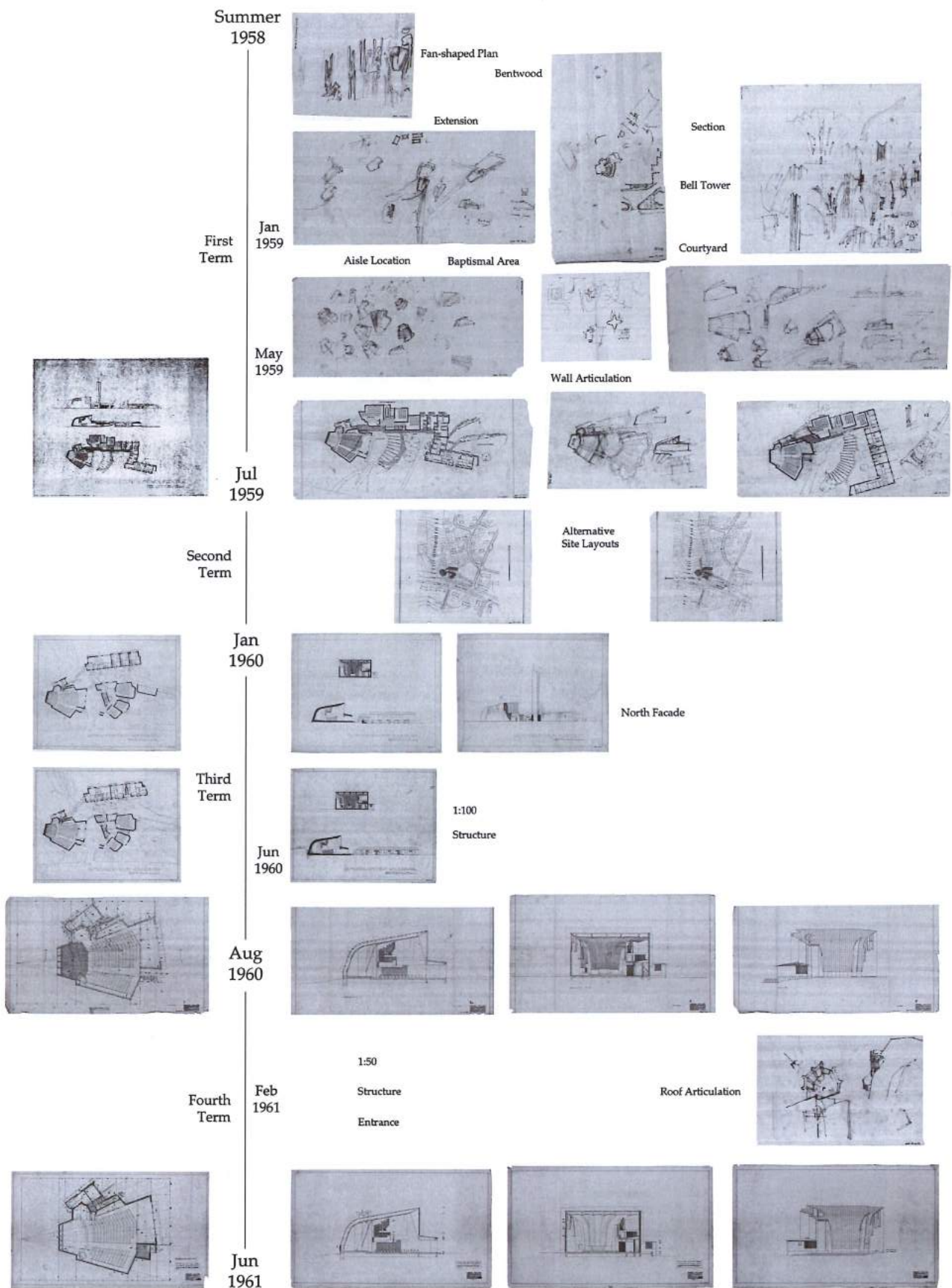


Fig.4. The approximate timeline of the design process for Wolfsburg Church showing Aalto's most important sketches and drawings.

4. Design Process Overview for Three Churches

In recent years the Alvar Aalto Museum has finished to catalogue the hundreds of sketches and drawings specifically from the 1950s. For the Seinäjoki Church project, there are approximately 700 sketches and drawings available to study. The archive also contains roughly 800 sketches and drawings for Vuoksenniska Church, and about 400 for Wolfsburg Church. After a preliminary analysis of these archived materials, a basic selection of roughly twenty to thirty of the most important sketches and drawings for each project were identified for more detailed review. Figures 2 to 4 present overviews of the approximate design processes for the Seinäjoki, Vuoksenniska, and Wolfsburg Churches. For clarity, in each project the design process has been organized into four terms: the first term involving basic concepts and ideas, the second and third terms showing important updates and subsequent modifications, and the completed drawings before construction making up the fourth and final term of a design process. Before comparing interrelated ideas and sketches in the design processes from the three projects, a general overview with the key themes, motifs, and ideas for each church is presented herein.

The design process for Seinäjoki Church began with simple sketches of a girl (Fig.5). The girl's outline was represented in plan with three basic trapezoidal forms side-by-side, before being adapted to a simpler trapezoidal plan with repeated spaces along one single enclosed church space (Fig.5). At the same time as these initial repetitions in plan, the vaulted section and unique side windows of the church were also sketched and repeated. With the church orientated roughly along an east-west axis, the trapezoidal plan was further developed with a general courtyard layout. Although not achieved in the final building, the original design intention was to open the back wall of the church to accommodate large open-air ceremonies in the courtyard. Based on Aalto's competition sketches, the church's dominant bell tower was also intentionally designed as a landmark; visible from the main train station in the city center, and providing a means of orientation with respect to the church. Apart from change in the church's facade material from granite to white plaster, no significant changes in church design can be seen in the sketches and drawings after first term and initial competition.

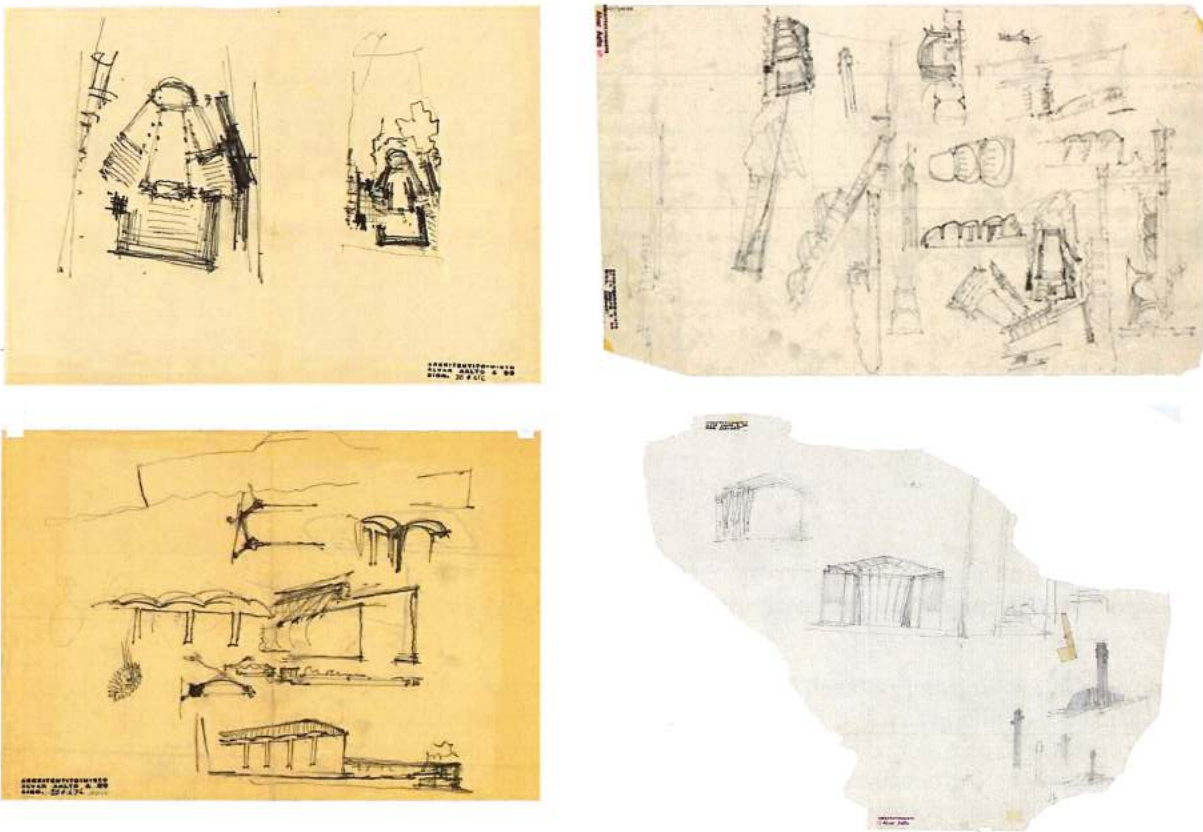


Fig.5. Design sketches for Seinäjoki Church showing trapezoidal forms and repetition in both plan and section.

Vuoksenniska Church shares a similar starting point as Seinäjoki Church, with an early site drawing involving a simple trapezoidal form and courtyard plan (Fig.6). Just like the early sketches for Seinäjoki, the trapezoidal plan for Vuoksenniska was also repeated threefold, but subsequently combined with curved, fan-shaped forms (Fig.6). Based on several first term sketches (Fig.3), providing moveable partitions for dividing the church into three separable social spaces was a key priority for Aalto. The threefold repetition of elements was also coherent throughout the church and its design process, from the church space and bell tower, to interior details such as lighting fixtures (Ando, 2017). Aalto's sketches also show how the church's acoustics were often considered, with several quick sketches of sound rays radiating from the pulpit (Fig.6). Acoustics were also used later on to modify the relatively simple geometrical forms that were established early on in the design process. Likewise, section sketches for the church, which is oriented along a north-south axis, showed several different versions of the church's southern-facing skylight and the natural lighting of the church's altar (Fig.3). These numerous acoustic and light sketches are distinguishing points for Vuoksenniska Church; few if any acoustic and lighting sketches can be found in the design process for both Seinäjoki and Wolfsburg Church. Lastly, compared to Seinäjoki Church, the bell tower for Vuoksenniska Church was intended as a symbol to counter the prominent smokestacks and chimneys from the surrounding industries (Aalto, 1959).

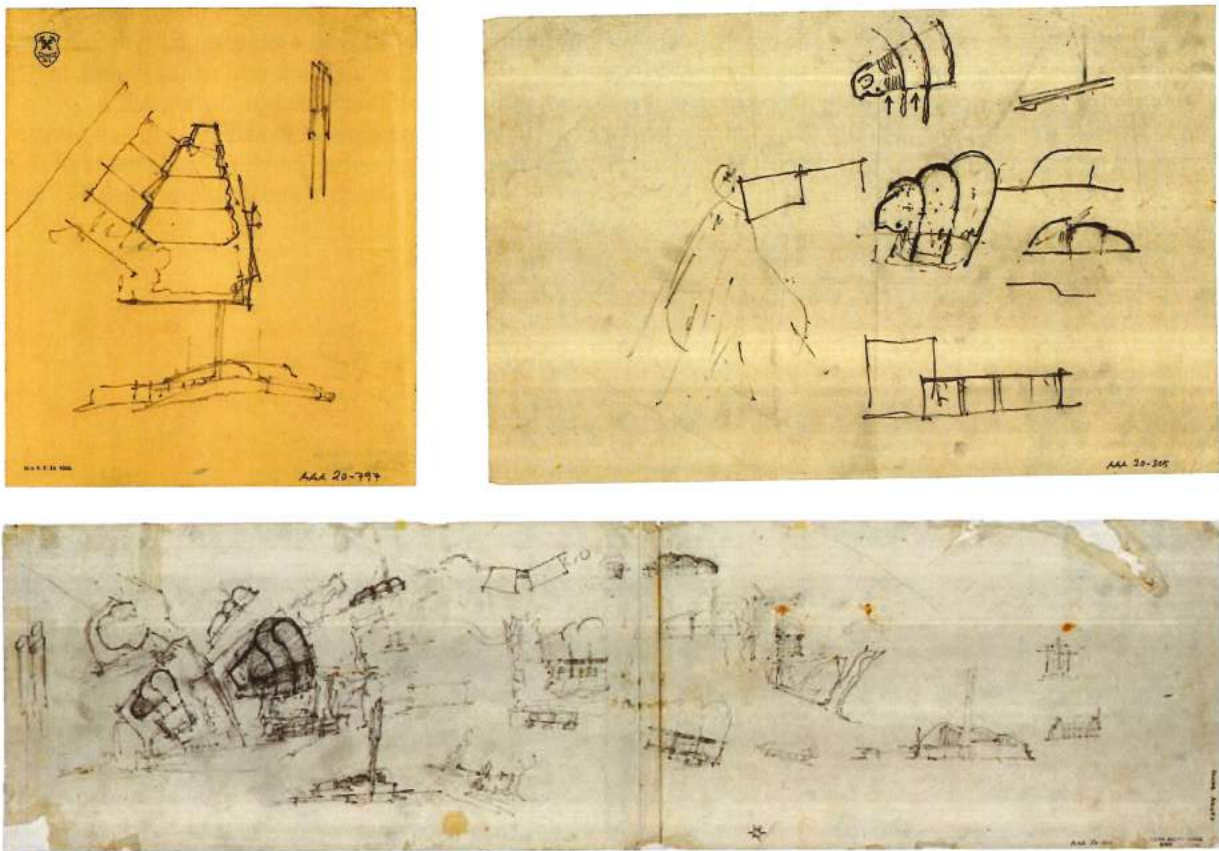


Fig.6. Design sketches for Vuoksenniska Church with an initial trapezoidal form, and later combined trapezoidal and fan-shaped form, repeated in plan and section.

The design process for Wolfsburg Church in turn followed suit from the early sketches from Vuoksenniska Church. Wolfsburg Church was similarly based on a fan-shape form in both plan and section, but without any repetition. Here, the key design concerns in plan were the aisle location and baptismal area. Aalto sketched several different plans for the aisle location, including both symmetrical and asymmetrical versions (Fig.7). Furthermore, just like in Seinäjoki and the earliest sketches for Vuoksenniska Church, a courtyard site layout was also planned for Wolfsburg (Fig.4). The unique feature of Wolfsburg Church was placing its baptismal area in the vicinity south of the altar (Fig.7), instead of the customary location near a church's entrance. At the same time as defining the church's overall plan, Aalto also drew the bell tower as a simple two-plane structure. The planes of the bell tower were directly aligned with the church aisle, thereby connecting the interior and exterior church space (Fig.7). In much later sketches, the bell tower was updated, and placed almost parallel to the nearby street as a mediating object in the courtyard of the project.

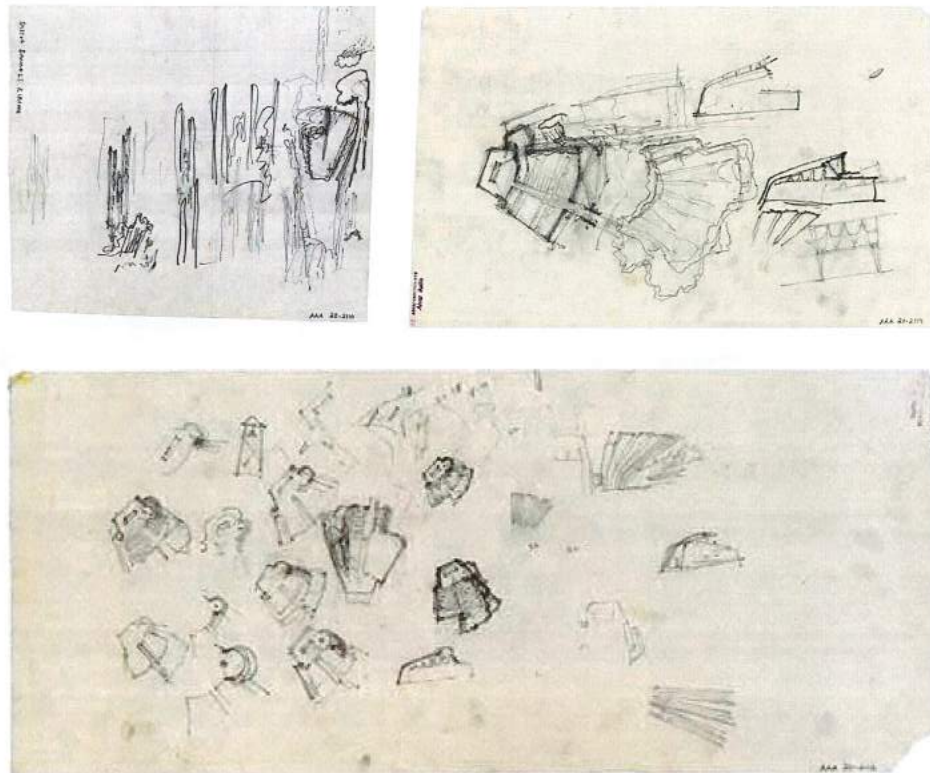


Fig. 7. Design sketches with symmetrical and asymmetrical fan-shaped plans and sections for Wolfsburg Church.

5. Reprise and Continuity

Examining a number of Aalto's early sketches for the Seinäjoki, Vuoksenniska, and Wolfsburg Churches (Figs. 5-7) has already highlighted the interrelated nature of the three different projects. In the case of these three churches from the 1950s, Aalto displayed a tendency to reprise and repurpose similar elements, especially in the earliest conception stage or first term of a design process. Instead of starting from a blank slate for a new project, Aalto's way to begin designing involved a reprise and reference to familiar or basic elements. For the three churches examined here, Aalto's basic elements are the trapezoidal and fan-shaped forms, both in plan and section. These basic elements could be easily modified, repeated, or simply adjusted in scale. For example, in the design process for Vuoksenniska Church, Aalto's trapezoidal and fan-shaped plan was continually modified based on acoustical considerations in service of balancing the social and religious activities in the church (Fig.3). A similar fan-shaped plan was also reprised in the later case of Wolfsburg Church, but adjusted to a much smaller scale and without repetition. Through such acts of reprise and repetition, Aalto established continuity in the design process across different projects. The architect's design sketches further show how the three individual churches could be realized as distinct projects, even though their earliest sketches (Figs. 5-7) were remarkably similar. The sketches shown in Figures 5-8 are so similar that they could be easily exchanged for one another or thought to belong to any of the three design processes.

Another element of reprise and continuity worth noting is the churches' sections behind their altar areas. The churches' section sketches show how a curved form based on Aalto's bentwood sculptures and experiments could be interrelated between projects. For example, sketches for both Vuoksenniska and Wolfsburg (Fig.8) show explicitly how these curved surfaces were first imagined as grained wood structure. Menin and Samuel (2003) have also commented before on how the curvature of Vuoksenniska Church's rear wall was simply an extrapolation of one of Aalto's bentwood sculpture. Ando (2017) has further discussed how the unique combination of trapezoidal and fan-shaped plan for Vuoksenniska Church was also rooted in Aalto's sketching of a bentwood sculpture together with the church's plan. The design sketches (Fig.8) and interior detailing of Wolfsburg Church further show how Aalto's reprise could be extended even further, both from plan to section, and in scale and across different projects, from the scale of a bentwood experiment and sculpture, to furniture, a wall, or the section of an entire church.

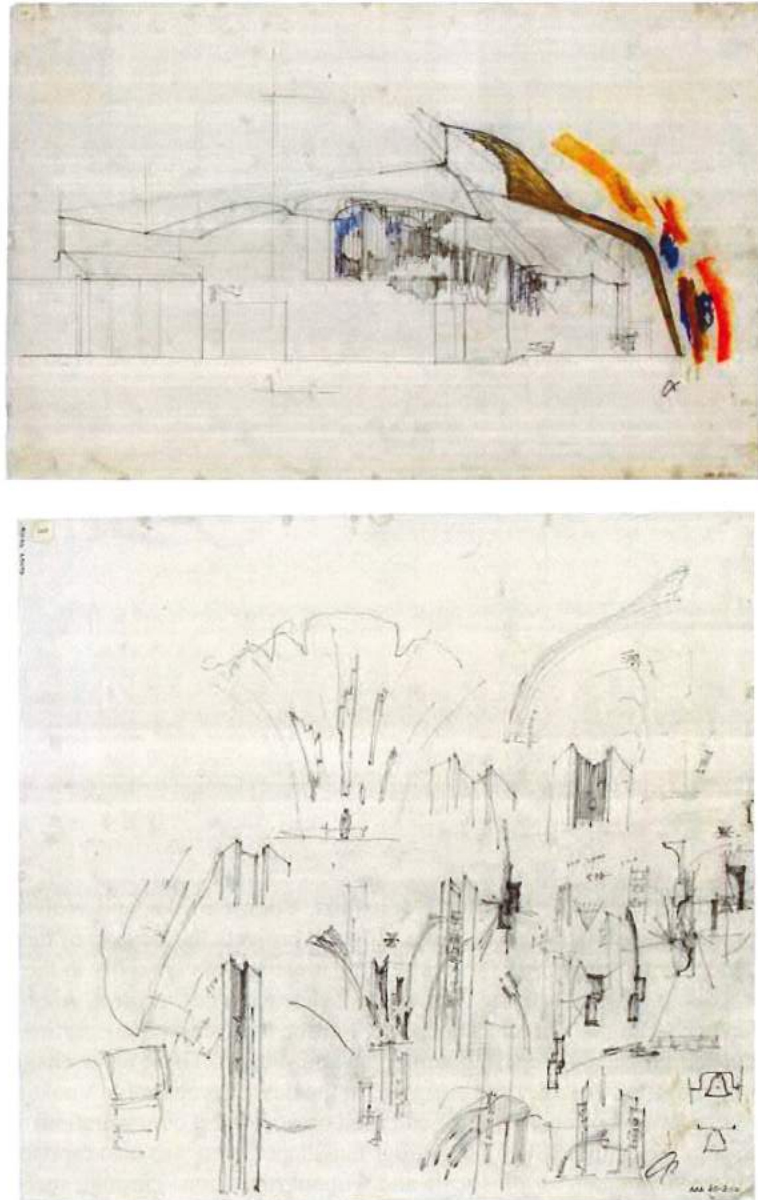


Fig.8. Design sketches for bentwood and the sections of Vuoksenniska Church (top) and Wolfsburg Church (bottom).

6. Discussion

The notion of reprise and continuity seen in Aalto's design sketches for these three churches seems straightforward and simple. The idea of Aalto effectively repeating elements or borrowing and reworking previous ideas has also been a point of criticism and discussion in previous literature, especially at different scales (Ray, 2005). Previous discussions, however, have been based on more general observations and without reference to specific instances in the architect's design sketches. For example, Radford and Oksala (2007) have cited the entire range of Aalto's design output, from glass items to tables, door handles, and buildings, and also throughout the architect's entire career. They have argued that Aalto's general tendency for the repetition of forms has been made to achieve an expression of discontinuity or incompleteness, namely the representation of fragmentation and ruin. Repetition, reprise, and continuity, however, as argued here, are important concepts towards a deeper understanding of the more general idea of synthesis in Alvar Aalto's design process. Note that the latter term has been widely used to characterize Aalto's design process and architecture in general (Pallasmaa, 1998), including by Aalto himself in speeches and essays (Aalto, 1998). Synthesis here is taken to mean the combining of elements to form a complete whole or something new. A degree of synthesis can be acknowledged in the making of a new project or thesis, but before the process of synthesis can take place, some sort of formal elements are firstly needed. While in the product of synthesis, one can also not identify theses prior elements that make up the new whole. Instead of synthesis for making something new, a better characterization of Aalto's design

process and architecture in the 1950s might be the careful adjustment and reworking of familiar, basic elements to arrive at new variants and types. It is through reprise and continuity with a limited number of basic elements in the design process that distinct but related projects can therefore be realized with seemingly similar design sketches.

As Aalto's basic elements, the trapezoidal and fan-shaped forms are especially adaptable, not just in terms of their general form and ability to accommodate different buildings and situations. Both the trapezoid and fan-shape form are useful architectural elements for creating new variations, as they simultaneously can provide spatial direction, focus, and define a centre, in addition to establishing hierarchy when repeated or extended. They are also simple self-similar forms, in that their proportions are constant when repeated even at different scales. This aspect of self-similar geometry can be better appreciated when considering the plan of a church with a trapezoidal or fan-shaped form. Aalto's extension of a church's plan to a broader courtyard simultaneously defines an individual building within a broader whole for the site layout. Another example can be seen in the plan for Vuoksenniska Church, where the church's overall plan and its three individual and separable spaces are similarly resolved. Given their overall similarities, the trapezoidal plan might even be thought of as a primitive or simplified type of the fan-shaped form.

7. Conclusions

This study has made extensive use of Aalto's sketches and drawings to provide a general overview of the design process for three churches from the 1950s. As a somewhat overlooked but important primary source material, Aalto's sketches are complementary to existing Aalto research based on more conventional materials such as archived letters, texts, and interviews. Aalto's sketches and drawings, however, illustrate more clearly how and not just what the architect designed. In the cases of the Seinäjoki, Vuoksenniska, and Wolfsburg Churches, a comparison of key early design sketches from each project shows a remarkable similarity, despite the final buildings being noticeably distinct. Aalto's sketches show a key process of reprise, with the subsequent modification of basic elements like trapezoidal and fan-shaped plans for different projects and architectural situations. Instead of synthesis, Aalto's design process is better characterized by continuity through a reprise and careful modification of basic elements.

8. Illustration Credits

Figs. 1-4, Author

Figs. 5-8, The Alvar Aalto Museum, Finland

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