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# Material-economic aspects of wooden pole fence-buildings

## Examples from a flexible building method

### **ABSTRACT**

*This paper examines different aspects of wooden pole fence-buildings through two different perspectives. In the first part of the article, the material-economic conditions and the nature of the crafts involved in the building technique is examined through a sloyd-theoretical perspective. By comparing approaches and methods of the wooden pole fence building-technique with those of domestic sloyd rather than architecture, an attempt is made at understanding the techniques epistemological nature. The versatile nature of the building technique is emphasized, and its regenerative qualities highlighted. The second part takes a closer look at the craft procedures involved in the making of a wooden pole fence-building through a processual reconstruction of a small barn based on a filmed documentation of the building process from the 1930s. Through practical experiments, attempts are made to understand and recreate the craft procedures documented in the film. Questions about the selection of wood for the barn and how material conditions affect the craft procedures are discussed. A filmed documentation of three of the procedures of the reconstruction gives an insight into the process.*

### *Keywords:*

vernacular building, wooden pole fence-building, sloyd, processual reconstruction, craft research.

### **INTRODUCTION**

In Scandinavia, the wooden pole fence (Figures 1 and 2) was the dominant method of fence building for almost 1000 years. This type of fence, constructed with poles driven into the ground, diagonal, split logs between the posts, and withes binding the poles together, could be built with relatively low effort wherever there was suitable wood at hand. From the early Middle Ages, the wooden pole fence grew in

popularity and was used to keep livestock out of cultivated land and to demarcate property boundaries (Myrdal, 1999). During the 19<sup>th</sup> century, large parts of the Swedish countryside were covered by a dense network of wooden pole fences, much like the hedgerows or stone walls in other parts of Europe. Some villages had up to 150 kilometers of fencing (Hagander, 1995) and the skills involved in this type of fence building would have been common rural knowledge.



**FIGURE 1.** Construction of a wooden pole fence in the 1920s, province of Värmland, Sweden (Keyland, n.d.)

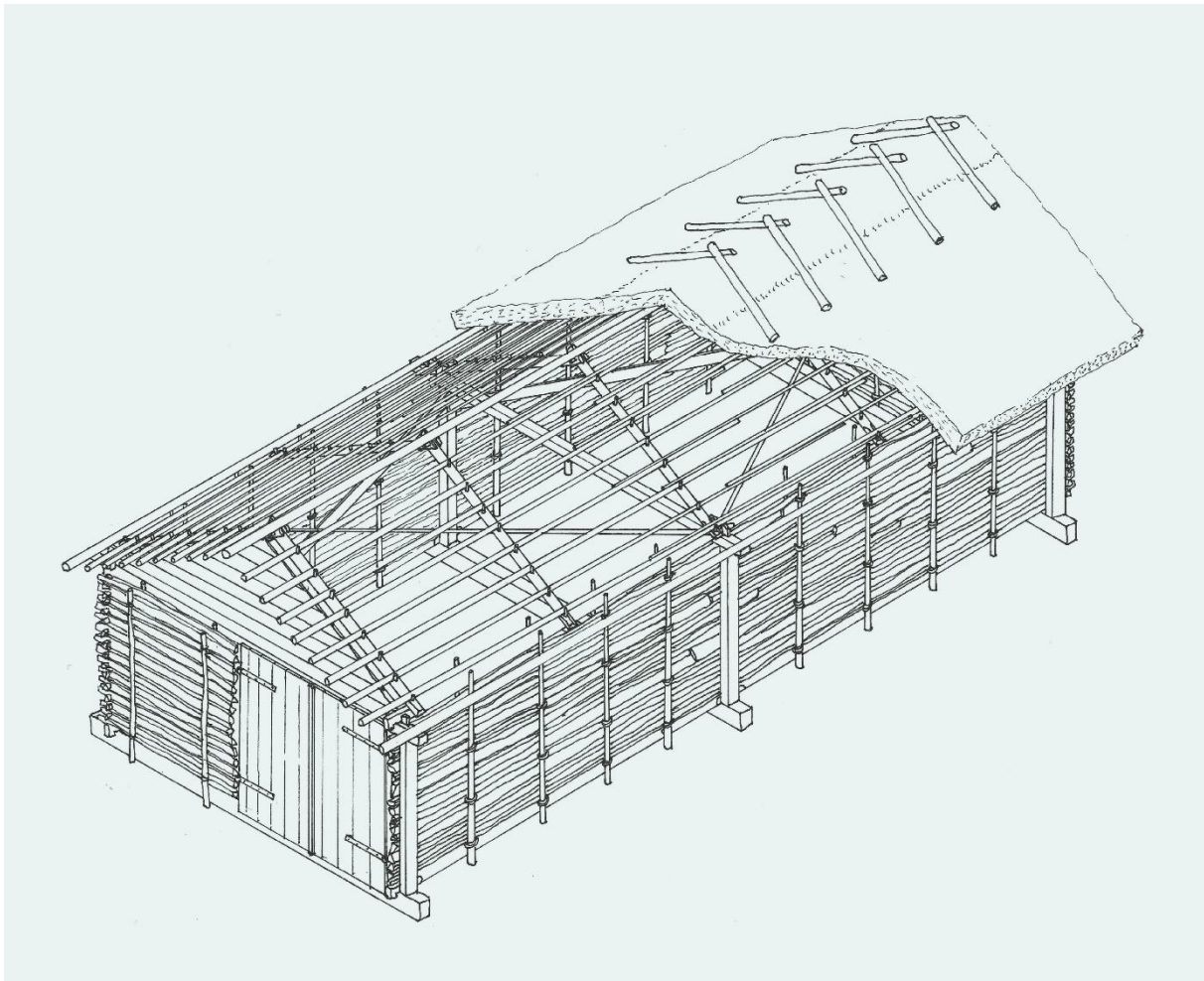
Parallel to this tradition of fence building, houses appear to have been constructed using the same or similar methods (Boije, 1756; Erixon, 1941; Ulväng, 2001; Wijnblad, 1805). Archival sources and earlier investigations exemplifies how the versatile building technique of the wooden pole fence was utilized in the construction of barns, sheds or other simpler structures from the 18<sup>th</sup> century up until the early 20<sup>th</sup> century in large parts of central Sweden. These buildings (Figures 3 and 4), as well as wooden pole fences, are however inherently ephemeral. The walls, consisting of earth-dug posts in direct contact with the ground, are highly prone to decay. The average lifespan of a wooden pole fence is around 20 years (Kardell, 2004). Therefore, only a few wooden pole fence-buildings remain today.



**FIGURE 2.** Wooden pole fence, 1920, province of Västmanland, Sweden (Westlund, 1920). Note the similarity with the walls in Figure 3.



**FIGURE 3.** One of the few still standing wooden pole fence buildings; Pelle Duvas boat shed in the province of Södermanland, Sweden, built in the 1890s (Svantesson, 2023).



**FIGURE 4.** Wooden pole fence barn, province of Södermanland, Sweden (Svantesson, 2023).

In ethnological literature from the first half of the 20<sup>th</sup> century, historical building practices in Scandinavia is understood through an evolutionary perspective. Vernacular building culture is interpreted as having undergone a development from lower, simpler, pre-historic forms to higher, technically, and culturally more advanced forms (Gustavsson, 2014; Ulväng, 2001). From this viewpoint, the building practices from the 18<sup>th</sup> and 19<sup>th</sup> centuries are portrayed as developed and being characterized by quality and a fundamental consideration of long-term sustainability (Erixon, 1947). The wooden pole fence-buildings do not fit entirely into this perception but indicate a more complex picture with a diverse width of building practices existing alongside each other.

Despite archival sources indicating previous widespread use of the building method (Erixon 1941; Ulväng, 2001; Wijnblad, 1805), wooden pole fence-buildings has only been fragmentarily addressed in previous studies and descriptions. By shedding light on building practices of an ephemeral nature, where knowledge in crafts is employed as an effective problem-solver, this study aims to contribute to a more complete understanding of the premises that governed historical building practices.

## **PART ONE – A SLOYD-THEORETICAL PERSPECTIVE ON HOUSE BUILDING**

The choice of materials, craft procedures, construction, and expected qualities of wooden pole fence buildings differ in some ways from most Scandinavian building traditions – the adaptability of the building technique in terms of structure and materials, based on a flexibility in methods and tools, resembles the principles and methods of “slöjd”, or sloyd in English. Consequently, I have chosen to analyze the wooden pole fence-buildings through a sloyd-theoretical perspective rather than an

architectural to better understand them. Into this theoretical framework, I have woven Johan Knutsson's concepts of "*material- and labor-economy*" (Knutsson, 2019) as well as David Pye's explanatory models of "*workmanship of risk*" and "*workmanship of certainty*" (Pye, 1995).

The concept of sloyd is in English primarily associated with the educational sloyd, a form of handicraft education still part of the Swedish primary school system. However, the Swedish word "slöjd" is complex and ambiguous, with different meanings in different contexts and has had varying interpretations over time. If we trace the word back to its etymological root, we find the word "slög," meaning clever, cunning, skillful, wise, knowledgeable (Hellquist, 1922). These older meanings make sense when we understand some of the historical conditions under which sloyd was practiced.

The term "slöjd" can be used to describe a form of pre-industrial, vernacular craft in wood for domestic use. The closest English translations for this meaning of the word would perhaps be *rural crafts*, *handicrafts* or *artisanal crafts*. This type of sloyd was carried out with few, versatile tools such as a knife, an axe, and a saw. These multi-purpose tools could, with their inherent flexibility, be used to create a wide range of objects and solve countless problems, provided that the user had a corresponding flexible approach to their work. Sloyd of this form was driven by practical, domestic needs and seamlessly integrated with the daily labors of rural life, such as farming, livestock management, raw material processing, and food preparation (Nylén, 1969). Due to its flexibility, sloyd was an essential skill, a problem solver, or as Johan Knutsson puts it: "For the sloyder, the ability to be versatile was a matter of survival" (Knutsson, 2019, p. 157).

The versatility of sloyd is thus based on the diverse economical context where it was performed. In the understanding of this kind of pre-industrial economy, to a large extent not based on the management of money but on the availability of time and resources, *material-* and *labor-economy* are central concepts. Material- and labor-economy can be seen as a combination of available time- and material-based resources and the approaches that govern their utilization. A material-economic limitation could be not being able to afford or otherwise access a particular type of wood. A material-economic approach could be a norm regarding how a resource is used, such as using lower-quality materials to save resources. A labor-economic approach may prioritize shorter production time over precision (Knutsson, 2019). Production for domestic use has, to varying degrees, been governed by labor- and material-economic limitations.



**VIDEO 1.** The film *Svedjebruk* (Bannbers, 1932) portraying slash and burn-agriculture in the province of Dalarna in the 1930s. Skip to 27:50 for the construction of a wooden pole fence-barn for the rye harvest. To watch the video, click the picture or the link : <https://biccs.dh.gu.se/2023/58-2023/1>

In the film *Svedjebruk* (Video 1) (Bannbers, 1932), we witness a group of people building a simple barn for their rye harvest. We do not know much about them, as information about the film production is scarce. What can we say about their knowledge if we look at the craft procedures and the product of their labor; a barn built using wooden pole fence techniques? We can see that they handle both tools and materials with skill and experience. We can also sense a flexibility in how they apply their knowledge. Learning a procedure equips individuals with a toolkit that can be adapted and developed in other situations (Rolf, 2017). The craft procedures they are familiar with from fence building are taken from their inner library of knowledge, adjusted to the situation, and put into practice.

Work carried out under this methodological and knowledge-based flexibility has been explained by David Pye as "*workmanship of risk*" (Pye, 1995). According to Pye, flexibility is associated with risk, or uncertainty, because it contradicts control, therefore the outcome is constantly jeopardized during the manufacturing process; predictability is subordinated in favor of adaptability. The opposite of "*workmanship of risk*" is explained by Pye as "*workmanship of certainty*", referring to strongly controlled processes found in manufacturing industries. However, these concepts should be understood as a sliding scale where the degree of control versus flexibility in a work method dictates where it falls. It follows that a highly flexible form of manufacturing, therefore, demands other things from the person executing it than a controlled process does. Control is linked to standardization, while flexibility requires "a readiness to make a variety of judgments and choices during the course of work" (Almevik, 2021 p. 124). Pre-industrial woodworking can generally be said to fall within Pye's spectrum of risk, as work with hand tools is always based on judgment and skill. However, hand tools offer varying degrees of control/flexibility, with edge tools without some kind of fence or guide, like knives and axes, being at the furthest end of the spectrum.

## Discussion

The tools used by the people constructing the barn in the film *Svedjebruk* (Bannbers, 1932) are few and flexible, with the axe playing a central role. The method they have chosen and the considerations they have made aim to solve a problem in the best possible way given the circumstances, contributing to the intricate puzzle of multitasking and versatility that constituted their existence. The versatile and pragmatic application of the wooden pole fence-construction as a practical problem solver attest to its epistemological role in its pre-industrial context. The knowledge and techniques involved can largely be characterized as "*workmanship of risk*". Perhaps today, they would be best described as sloyd-skills, a form of domestic, versatile craft knowledge employed to build a house.

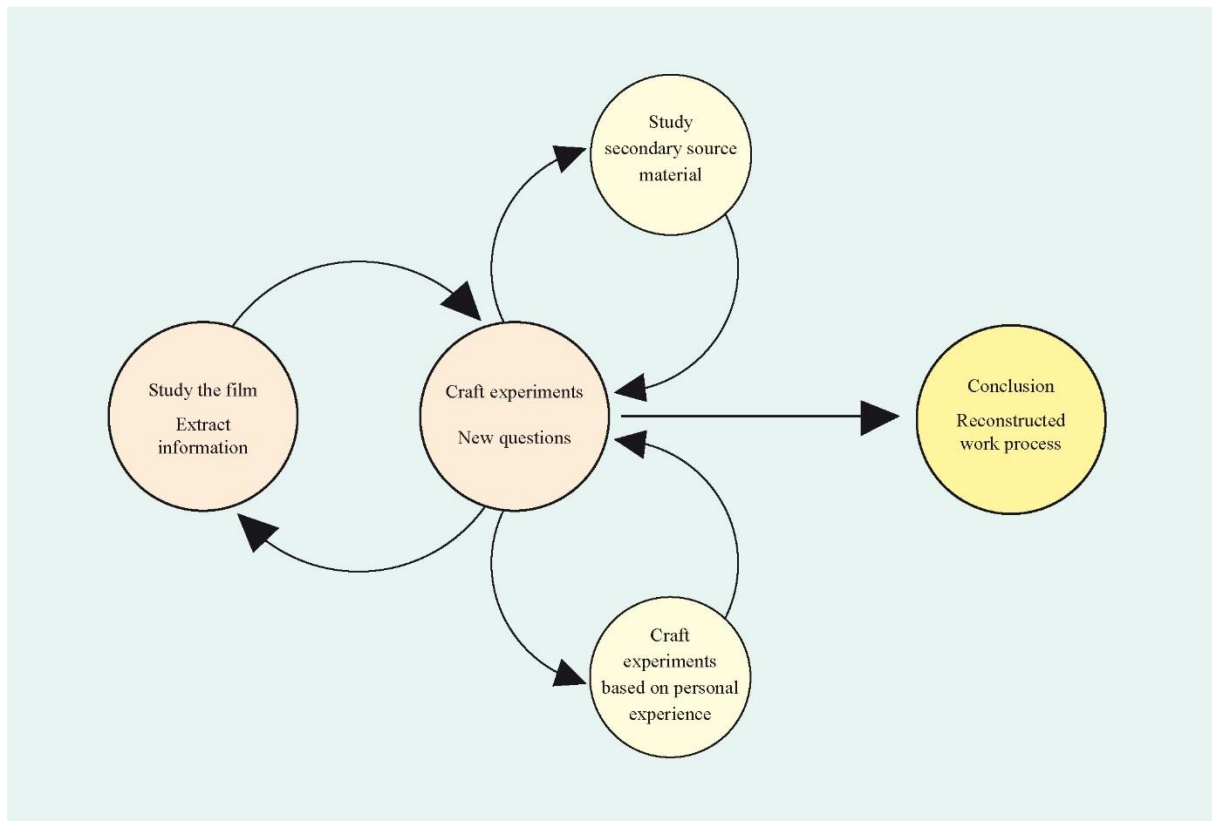
The wooden pole fence-building technique, and the manners in which it has been applied, is an example of a truly regenerative building method that could serve as an inspiration for contemporary and future contexts where such qualities are strived for. In the construction of overnight shelters, simple barns, sheds, or playhouses for children, the wooden pole fence technique could be employed. Its material-saving properties and the possibilities it offers for utilizing local or reclaimed materials could be harnessed in recreational areas and nature reserves, thus ensuring the continuity of a nearly forgotten building technique.

## PART TWO - PROCESSUAL RECONSTRUCTION OF A WOODEN POLE FENCE-BUILDING

Based on the work processes depicted in the film *Svedjebruk* (Video 1)(Bannbers, 1932), a full-scale reconstruction of a wooden pole fence-building was made in the autumn of 2022. The building is a "*lotak*", a small barn to store a type of rye harvest. The investigation was carried out as a *processual reconstruction* (Almevik, 2012; Karlsson, 2013; Seiler, 2020) focusing on attempting to recreate the craft procedures involved in the preparation of materials and in the erection of the building. By placing myself - as a craftsman and researcher - in similar positions, facing similar practical problems as the people in the film, the aim was to create a deeper understanding of wooden pole fence-buildings and the craft procedures related to them. My 14 years of experience as a craftsman in the field of traditional woodworking provided a practical understanding that was crucial in interpreting the film as well as conducting the practical experiments.

The film *Svedjebruk* is now over 90 years old, and information about it is limited. It is unclear what intentions the director, Ola Bannbers, had in his portrayal of the work and to what extent the participants were directed during the process. Despite these uncertainties I chose to view the depicted work as interesting enough to base a processual reconstruction on. The familiarity with materials and methods that I perceive in the craft procedures carried out in the film has been key to interpreting the work processes as genuine and part of a living practice when the film was made.

My research process constituted a movement between the primary source material (the film) and attempts to translate interpretations of it into action (Figure 5). During these attempts, new questions about how the craft procedures were carried out forced me to return to the film in search of answers. If the film could not answer my questions, I consulted other relevant, related sources such as literature about wooden pole fence building in general (Hagander, 1995; Kardell, 2004) or the "*lotak*" type of barns specifically (Bannbers, 1934) or conducted experiments based on my experience as a craftsman. The idea was that these movements between source material, personal experience, and practical experiments would lead to a reconstructed work process. Similar research processes are common in craft research and can be found in Seilers or Karlssons work (Karlsson, 2013; Seiler, 2020). Seiler describes his research process as spiral of growing knowledge without a specific endpoint (Seiler, 2020 p. 43).



**FIGURE 5.** Methodological process for the processual reconstruction of a wooden pole fence-barn from the film *Svedjebruk* (Bannbers, 1932). (Svantesson, 2023)

The film *Svedjebruk* (Bannbers, 1932) depicts approximately seven and a half minutes of the construction process of the barn. The film sequence provides an overview of the work process from splitting of spruce logs to a finished building, but it cannot be regarded as a complete documentation of the building process. Early parts of the process, such as the selection of trees for the barn are not depicted.

When working with processual reconstruction within the field of building crafts, the available source material is often a physical product (Almevik, 2012). Based on interpretations of traces within this product, a theory is formulated regarding how the craft procedures may have been executed, which is then tested through action. In this study, the source material was not a physical product, therefore, it was not possible to closely examine tool marks and details in the construction. However, what the film offered was a direct insight into the craft procedures involved in the production of the barn. The purpose of the processual reconstruction here undertaken was: A) to recreate the craft procedures depicted in the film by emulating the working conditions in terms of materials, methods, and tools as closely as possible and B), to as far as possible reconstruct the parts of the craft procedures that are not depicted in the film, based on the recreated work processes, thus bridging the gaps in the film.

The expected outcomes of parts A and B differ in their reliability. In part A, the experiments were expected to generate relatively reliable results, as the craft procedures reconstructed can be directly compared to those performed in the film. If I achieve similar results in the same time frame using similar materials, tools, and movements, the craft procedure could be considered as reconstructed with high authenticity.

Part B was expected to yield slightly less reliable results, as comparisons could not be made with the craft procedures performed in the source material. Instead, the comparisons in part B were made with the result of the work carried out in the film, that is, the building and its materials in different stages of the work process. The results are then, as Karlsson (2013 pp. 25-26) writes, “of the kind: *this works* or



*this does not work*” and can thus provide insights into how the crafts procedures *may* have been carried out.

The study was conducted using materials from a forest with estimated similar growth conditions as in the film. Estimates of material dimensions and calculations of timber quantities were made based on the film, with the individuals constructing the barn serving as reference objects for the estimations. Some of the craft procedures were documented in film (Video 2) partly as a way of comparing my experiments with the source material.



**VIDEO 2.** A filmed documentation of three of the craft procedures involved in the processual reconstruction, Transtrand and Mariestad 2022 (Svantesson, 2022). [A link for the video published on the BICCS-website is to be embedded here.](#)

## Results

Alternating between practical experiments and the film in part A of the processual reconstruction appeared to be successful in reconstructing the craft procedures depicted in the film. Both the splitting of logs and boards and furthermore, a significant portion of the construction of the roof were reconstructed with results similar to those in the film (Figure 6). The progress of these attempts was based on the choices made regarding materials and methods to emulate the circumstances in the film, as well as my practical preunderstanding of the craft.

Based on the recreated craft procedures from part A, it was possible to reconstruct the parts of the craft procedures that were not depicted in the film – part B- and thus bridge the gaps in the building process. By turning to the secondary source material (Bannbers, 1934; Hagander, 1995; Kardell, 2004) for additional information about the "lotak"-type of barns and wooden pole fence building techniques, and furthermore, by conducting experiments based on my own experience, I found ways to address the questions that the film did not answer. The results in this part of the investigation did however largely fall into the category of "this works" (Karlsson, 2013, pp. 25-26). Meaning that there were few ways to verify if these methods were *actually* used. This became particularly evident in the selection of materials, as it is not documented in the film but crucial for the outcome. The experiments of reconstructing the splitting process provided answers concerning *what* material qualities were used based on how they influenced the procedures, but not *how* they were selected in the forest. In this sense, the finished product of the investigation is as much a built theory about how the craft procedures involved in the making of a wooden pole fence-barn were carried out as it is a reconstruction of one.



FIGURE 6. The finished reconstruction of a wooden pole fence-barn, Mariestad (Svantesson, 2022).

### Discussion and conclusions

Through the experiments of reconstructing the craft procedures involved in the splitting of the materials in the film, it was possible to conclude that the choice of wood, which is not depicted in the film, was crucial for the outcome. The splitting of half logs for the walls and boards for the roof proved to be dependent on timber with relatively little twist. Experiments with splitting of logs with significant twist was carried out, but it was not possible to replicate either the craft procedures or the final result with this material. This conclusion regarding the choices of material for the construction makes sense given the buildings ephemeral nature. That means; for it to be worth the effort to build a construction with a short life expectancy, the work effort needed to build it has to be relatively low. In order to keep the work effort low, an underlying knowledge in crafts and familiarity with the selection of material is crucial for the outcome.

These conclusions raised questions about how the selection of materials for the barn was made and if the twist of the trees was examined before felling. The conclusions regarding the importance of material selection to enable the work processes also raised questions about material economy and how the people in the film perceived the forest as a resource. As Seiler describes it, my investigation could also be seen as a spiral of growing knowledge (Seiler, 2020 p. 42) where the conclusions raises new questions and the finished reconstruction acts as a built theory. Further investigations on how different circumstances has governed the building processes of wooden pole fence-buildings and other ephemeral structures could be done in the future.

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- Figure 3. Svantesson, B. (2023). *Pelle Duvas sjöbod* [Photo]. Krampö, Södermanlands län, Sweden.
- Figure 4. Svantesson, B. (2023). *Djupanboda slätterlada* [Drawing]. Julita, Södermanlands län, Sweden.
- Figure 5. Svantesson, B. (2023). *Methodological process for the processual reconstruction of a wooden pole fence-barn from the film Svedjebruk*. [Drawing].
- Figure 6. Svantesson, B. (2023). *Wooden pole fence barn* [Photo]. Mariestad, Västra Götlands län, Sweden.

## VIDEOS

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