

Metsä

Video

Duration: 15:58

Transcript

Alvar Aalto, Artek and wood

Artek was founded in 1935 by the architect Aino Aalto, her husband Alvar Aalto, the art promoter Maire Gullichsen and the art historian Nils-Gustav Hahl. While the initial intention was to provide furniture for Alvar Aalto's buildings, Artek has gone on to develop further, producing timeless designs based on the bending of birch, as well as working with other techniques and woods. The material culture of Artek is rooted in the Finnish forest and develops from it. Many design historians have focused on Alvar Aalto's wooden version of the modernist continuous bent metal tubular form, disregarding how much the specificities of birch wood influenced his ideas.

Birch delivers a much less malleable material compared, for instance, to the beech wood that grows in Central Europe and had already been used for the production of steam-bent Thonet chairs. By contrast, Alvar Aalto's L-leg design takes the limited flexibility of birch wood into account and uses glue and multiple bent veneer layers to create a new versatile and local wood-based production system.

Nowadays Artek produces more than 70% of its furniture at the A-Factory in Turku, Finland, while the sawmill that provides the majority of wood it uses, is located close to the city of Jyväskylä. The wood is collected in forested areas within a radius of 200 km from the sawmill.

The vital interconnection between Artek and Finnish forests couldn't be more evident. But what are Finnish forests? What kind of biological and man-made realities can we observe within that 200 km radius encircling Artek's sawmill?

Boreal forests

All Finnish forests are part of the northern boreal ecoregion that constitutes the second largest biome globally, covering some 12 million square kilometers. It runs through most of Canada, Russia and Scandinavia.

Because of its limited temperatures and seasonal amounts of light, the boreal forest has relatively few species. It is mainly composed of coniferous species of spruce, fir, and pine and the deciduous larch. By far the most dominant tree species are conifers which are well-adapted to the harsh climate, but there are also smaller numbers of other deciduous tree species like maple, birch, oak, elm and willow.

Definition of a forest and forest management

A precise definition of what a forest is doesn't exist internationally, but green coverage visible from a satellite certainly isn't enough. The majority of forests in the European continent are no longer primary forests – that is,

forests that are made up of native tree species whose ecological processes have not been significantly disturbed. In Finland, the majority of forested lands are, in fact, plantations of trees used for timber extraction, which have a rotational time that ranges from 60 to 80 years.

According to the Finnish Forest Act enforced by the Finnish Forest Center Metsäkeskus, forest renewal is mandatory after every felling. The minimum target density pursued with the most common method of regeneration, planting, ensures that each tree that is felled is replaced by at least four new trees. However, while green coverage is expanding, it is also important to estimate quality and not only quantity.

After gaining independence from Russia in 1917, the Finnish government believed that forest revenue could be expanded by increasing logging, improving forest management and increasing the drainage of peatlands, thus promoting forest growth. The area of productive forest land subsequently increased between the 1950s and the 1980s, largely because of drainage, which completely changed the ecosystem in those areas.

Biodiversity

Kaisa Raitio is an Associate Professor in Environmental Communication and her work focuses on the politics of natural resources.

“That means we need to define what forest is, so yes, we might have more timber in terms of cubic meters in the forests than what we had some time earlier, but that does not equal forest. The forest is a living ecosystem with

the biodiversity in it, and that type of diverse forest, that can sustain the biodiversity that they once hosted, they are dramatically declining. And Finland is in fact failing to protect the remaining, what is usually called old growth forests or high conservation forests, so that type of forests as habitats are decreasing, and the amount of volume in the forests, the fact that that's increasing at the same time might actually be bad news for biodiversity, because that is being achieved through intensification methods that seek to increase the volume of timber on the expense of biodiversity, and some of that volume also comes from peatlands that were not originally forests, that were ditched and turned into forests. That is also a biodiversity loss, it's a habitat loss for peatlands. So the fact that you have more timber somewhere does not mean that you have more forest, and it definitely does not mean that you have more diverse forest.“

Similarly, Markus Kroger, Associate Professor in Global development studies of the university of Helsinki, states:

“Biologists are currently giving biowarning in Finland because of the extinction of certain species. The forest is actually becoming a mosaic of degraded forest islands, of some remnants of old growth forests here and there, and that are deforested and often also clearcut. There will be mayor losses to the biodiversity in Finland, the situation is dramatic, and it has gotten worse after 2014, because the governments have increased the logging targets.“

Economic interests and a limited understanding of how forests work are also the main reasons why young, recently planted trees are described as more efficient in their ability to absorb CO₂, compared to older trees. Current studies show old forests to be either carbon neutral or carbon sinks. This is because even though the rate of volume growth of forests decreases with age, which is why they do not sequester carbon at the same rate as young forests, old forests also accumulate carbon in the soil.

Clearcutting and continuous coverage

The Finnish Forest Act was reformed in 2014, giving forest owners the option to choose between clearcutting, continuous cover silviculture and other methods. This encouraged a shift away from the idea that forests need to be clearcut for renewal and timber extraction, even though this idea is persisting.

Clearcutting is a method of tree removal where all trees in a large area are removed. This is the most common form of tree removal due to it being the easiest and most efficient way to handle lumber. Clearcutting is often praised as a method that supposedly imitates natural cycles: in boreal regions, fire is a crucial disturbance factor that helps the natural regeneration of forests. However, fires leave burned organic matter on the soil, contributing to its renewal and chemical enrichment, and clearcutting does not.

Continuous forest coverage, in contrast, selects and fells individual large trees and has been observed to offer several favourable features, for

example higher resistance against natural hazards such as insects, better adaptation potential to climate change, and higher environmental values.

Markus Kroger adds:

“There was a change just a few years ago, where other forestry models besides clearcutting were also allowed. Before, from the 1950s to this day, only clearcutting was allowed, nothing else. If you cut a tree here and there, it was considered a distraction of the forest, the governments mandates that the forests had to be passified, which means clearcut. It’s a very obscure vocabulary. Today the companies and associations in charge of logging still recommend clearcutting, and don’t even tell that there are other ways or forms of forestry. I believe it’s something only 1-2% of logged forests that are not clearcut, although the legislation would allow this. It is a set of beliefs that are still present also in the countryside and along with certain political structures, even in the forest school they still train engineers, telling them that when spruce is 100 years old, it starts to rot and it has to be cut down.“

Considering all this one question remains: Why is clearcutting still the most promoted and implemented method of timber extraction in Finland? Mainly because it is the most suitable technique to effectively accumulate large volumes of wood for the production of paper products: In Finland, 60% of round wood goes to the chemical pulp industry, while 40% goes to the sawmilling timber industry to create wood products such as plywood, boards, and timber for construction and furniture. The planting of fast-

growing species for the production of paper pulp is still the main focus in Finland.

Forests and carbon dioxide

Marcus Walsh adds:

“When they cut down the trees, the vast majority, certainly of anything to do with pulp wood, say 50% of the total, probably more when you take into account that it was saw log, nearly 50% of the saw log is sawdust and waste products, which of course in turn are turned into energy or into pulp paper products. So well over half of the total of timber ends up either as energy wood or paper pulp of some kind. And of course the average life of these is about three years, in fact probably in the case of some of them much less, like six months, before they have been burnt or otherwise decomposed back into carbon dioxide. So therefore, the vast majority of this clearcut stuff is going to go back as carbon dioxide into the atmosphere in a very short time indeed. And in the meantime, the amount of time it’s going to take for the timber to grow back in the clear cut and sequester that same amount of carbon is 20 to 30 years, because it’s only seedlings and nothing at all in the beginning, that does not sequester very much. So that result is of course in the short term of 30-40 years, which is actually the time mankind needs to think about right now, you’re all the time actually putting out more carbon into the atmosphere by cutting down trees. But of course the fact is that in the long term, apart from the energy it takes to cut down the trees and transport them, of course using timber is better than using concrete and steel, but above all it’s better only if you can use really long term products, if

you build houses and long term chairs and furniture and so on, which keeps the carbon locked into the wood. But for short-term products is utterly useless, so these are the two things you really need to keep in mind. And the one final issue on this is that then of course in relation to what we have been talking about just now, is whether continuous cover forestry is better versus clear cutting, and the answer is that it is most very definitely better in a very mayor way. And that is, that when you do clear cutting, you also scarify or plow the ground for the seedlings, and that releases an enormous amount of ground carbon.“

Ownership of forests

A very effective way to understand how forestry practices work in Finland is to look into a simple but fundamental question: Who owns forested lands? Only 26% of Finnish forests are state-owned, while private forest owners possess 60%. This is because the acquisition of forested land by corporate entities has been limited to guarantee that Finland's most important natural resource remains in the hands of its residents.

Nevertheless, forests in Finland are first and foremost an asset, and although companies may not be allowed to own large forested areas, they have become consultants on forest management for Finnish landowners. Today, clearcutting is still almost the only method of wood extraction used in Finland, while continuous forest coverage is rarely promoted as a viable alternative. Clearcutting focuses on quantity, while selective logging focuses on the quality of timber.

Forest industries and the design industry

It is within this complex system that Artek exists, one that favours the constant redesign of organic realities for economic interests. The light colored birch hardwood applied in many of the most iconic Artek products is indirectly collected from the clearcut of large portions of conifers that have been grown in plantations for the production of short term products such as paper pulp or packaging materials.

This inevitable interconnection with the industry of timber extraction throughout Finland proves how urgent it is to give more space for alternative narratives to emerge. This will encourage a mode of production that thinks with the forest instead of disregarding it.