

Riku Rehell & Jukka Silvennoinen

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Video

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Transcript

Artek A-factory: the only producer of solid bent birch furniture in Finland

Jukka Silvennoinen: I joined A-factory five years ago, [when] Vitra hired me to change this company and production, and to design a new technology, growing and changing the [existing] modern technology. I have almost 30 years of experience in the woodworking industry. My previous life has been in different factories that I've been leading, being part of [creating] many new technology systems, and developing [various] furniture and factories, and [implementing] technologic change overall in the wood industry. When I came to A-factory, almost the first [task for] me was to go through all what they're doing, and [I] terminated all the [production] components, which don't belong to Vitra or Artek. Today, we are producing only Artek furniture and solid wood birch bending [is the key focus of our work]. This is not typical, and you cannot find any other factory which [would be] focused on producing [furniture from] solid [bent] wood. It's not so common anymore, most furniture factories [are] using MDF or cheap boards, [with] surfaces [covered] by melamine or laminate, [while] our raw material is solid Finnish birch.

Technology is changing, but the technique remains

JS: Yes, [technology] is developing, but these bending methods need to [be kept the same]: we wind dry the wood [that is] a bit wet; [after] wind drying the material, we use water [on it], and then bend it smoothly. After bending, we make the final drying. The bending [can be made] by hand or machine, and the biggest thing, that has changed since 1930s-40s, is the drying method; we are using high-frequency technology, and in the old days they didn't have [it], but all the other things we [do] in a similar way.

Riku Rehell: Maybe the biggest change in the technique of making L-legs or lamella bending is the [application of] high-frequency and hydraulic presses [technology]. They were the most modern and new [technologies] – at least, high-frequency drying was new in the 1960s, when production moved to the buildings where it is still today; before that, [the wood] was bent by hand, one by one, one per one mold, and the drying time of the bent was six [to] eight hours.

For a furniture producer in Finland, getting quality birch wood is vital

RR: The furniture [from soft wood] is not going to be as strong as from birch, and it's a lot more vulnerable for dents, heat and cracks. Pine and spruce are not [that] much used in the furniture industry anymore. In the 1970s-80s, they were more popular. Nowadays, there is not much new furniture [made] from those.

JS: [On] the European level, I think the most popular wood is beech. Solid wood [is] the cheapest and quite simple to tooling. But in Finland, like Riku

said, nowadays there are no manufacturers who produce solid wood pine or spruce furniture: [pine and spruce are] more [used as] bulk material in building companies, they saw [them into] planks and use them as frame material. Pulp and [wood industry] are big, both [are] using a lot of those trees. It's somehow dangerous to us, because those are monster companies – UPM and Metsä Group, they are huge and it's amazing [how much wood they use in their processes] in cubic meters. We are the biggest birch user in Finland, but compared to [us], these big factories are using in a few hours more wood than we can use in the whole year.

RR: It's only from the old mixed forest that we [can] find the birch we use, only two to three percent of timber volume in the forest is birch. That gives the idea [about] the log volume. Even though over 10% of all the trees in Finland are birch, birches in parks and yards in Southern Finland have multiple tree heads, and they are not a good wood for furniture. But in mixed wood forests, where there are several species – spruce, maple, alder, birch – birch grows with just one trunk. From the lower part of the tree trunk, you get three to five meters [of tree material]. You can cut [it] to logs, from which solid birch planks [are made], and the rest goes somewhere else. That's why the log volume from the forest, which can be selected for solid furniture manufacturing, is only three to four percent.

How did the A-factory begin to work with birch?

RR: If we grow, [meaning] we increase our production volume, the Finnish forests don't produce enough good quality birch trees and logs for us. A notable thing. But you asked – why birch? It's the same answer as in Europe

– why beech? It's a local wood. And in Finland, as we discussed last week, birch is the only hard wood which grows enough to be commercially utilized. Yes, we have few maples and oaks here and there, ash trees, but they are, let's say almost single trees here, and cannot be used for commercial production, not even in our scale, which is big in Finland, but not too big worldwide. In the early days, it was the factory founder, Korhonen, who got his hands on a cheap batch of beech. But it was imported, obviously. It was not used for Aalto furniture; it was used when the factory was founded in 1910.

RR: There were four or three carpenters, one of them Otto Korhonen, who founded the company. The founding of it was, let's say, aided by bankruptcy of another company, from which they got a cheap batch of beech, and they wanted [to get] some contract deal. They built up from there and made their own furniture, and even had a shop in Turku. In the late 1920s, Alvar Aalto was living in Turku and part of his office was there, because he had several building sites which he was controlling and managing. He was designing simple furniture, for which he needed new techniques. How to handle Finnish birch? If we take the L-leg, or the lamella armrest bending, I bet they'd be made of beech if we had beech in Finland. Beech is easier to bend, you don't need so many glue layers to hold the form, you can steam and boil it, and then bend it. So why do we use birch, why do we have these structures? It's a local material, it was available in those days and still today, it's still the cheapest of the hardwood. All oak and ash are imported and are more expensive, even more expensive than beech in Finland; if we go to

Europe, beech is cheap, birch is more expensive. But it's about which is local, and which is not.

JS: As already mentioned, beech, oak and other hardwood need a different technology of bending, they need warmth and steam. Birch is different – we can bend it without these things. If we know the right [level of] moisture of wood, we can start to do the bending.

A-factory upkeeps a close relationship with its suppliers

JS: We know quite well where it's coming [from]. If you take a map, put a compass in Viitasaari, [and apply a circle with a diameter of 100], all the wood is coming from [the area] under that circle. It's in the middle of Finland, where we are collecting this wood.

RR: There are a few big sawmills in that area, who use just pine and spruce, but when they cut the forest, they take the birch aside, and our sawmill buys it.

JS: We have quite a deep relationship with them. It was two-three years ago, when they put all their staff in the bus, and drove to our factory. I gave them a 1-hour lesson and told them everything about the A-factory and [our] furniture: what we're doing, where it's going, what kind of demands and end customers we have, and what is behind [the production of] these things. After that, we went to the A-factory tour, so now, when they are sawing the planks, they know what they are doing. When processing our wood, it's important for us too, because our quality demand is so high. We talked

about detailed things, [because] without this kind of long chain understanding we cannot keep a good system, and of course it's related automatically to our efficiency.

Forest cutting and growing are managed strictly

RR: The clearcut it's the final cut when the forest is 60 to 80 years' old. It's the final step to take really big trees and logs out, but today the clearcutting [means] that they leave some of the trees to seed the new forest, also some rotten trees [that are left] there – they call them “insect hotels” – are biological elements supporting the diversity of the forest. But to serve the huge industry using pine and spruce, the final clearcut is the method still [used] in Finland to process the forest.

JS: Behind it there are forest unions or forest corporations controlling what happens. I can be [a] private forest owner, but if I'm planning to cut my trees, these corporations are controlling what I am doing. My responsibility is to [plant] new trees if I'm cutting the old wood away. If I don't do that, I [will get fined by the] government. Typically, we make the first harvesting when the wood is around 30–45 years old, then the second harvesting after 10-15 years, and then the last one – total cutting. This circle [goes like that]. If we see that [all trees are cut in a certain plot], the next summer there is new wood growing.

RR: That's why we don't need to be worried about how the forests are maintained in Finland, because forests are the only natural [re]source; we don't have oil, we don't have diamonds, we have only the forest. Over 70%

of all the forests are privately owned, so the forests are really splintered into small units – family owned, small company owned, this and that, so the clearcuts are relatively small areas. You won't find a place in Finland where you could look kilometers away, and everything is cut away. There [can be] small plots being clearcut, next to a growing forest. There are associations, [corporations] and laws, obliging the owners to plant a new forest, so in that sense we are not stealing from nature, the neighbor, [or] the government. Timber industry or the raw material supplying chain is in order, and we have the PEFC [certification system], they can trace everything back to where [the wood is] cut.

Forests in Finland still grow faster than they are cut

JS: Not in the next years, but [the change might come] in the long term, like Riku mentioned...in Finland we cannot feel this need just now, because it's so deep in the system. Maybe outward pressure can [make a change], [possibly a part of] forest can take this way, but because I myself in the old days owned quite a lot of forest [and] I know many forest owners, a lot of things and mentality [must change first]. [It means to decide] to change cutting technology, which is [embedded in] this system for more than 50-60 years, starting around the Second World War time, in the 1940s. It takes a lot of time to change the system – I'm talking about the Finnish government [Forestry] ministry that is handling these systems. As Riku mentioned, there is such a big industry behind, and so much money, that they cannot change rapidly. But my feeling is that we don't have and don't need to be afraid that we kill the Finnish forest. Our forest is growing more than we use it today.

RR: Yeah, they grow more than [they are] cut, so there is still a big pile of wood rotting in the forest. It's only two to four percent of the log volume from the forest, which is high-value raw material, and it's mainly only the birch. Total volume is so small, that it makes no sense to make ongoing harvesting tree-by-tree; the rest, pine and spruce, are low-value raw materials for the heavy industry. In that sense, there is no market for tree-by-tree logging. In Europe, you have mainly hardwood in the first place, it's a higher valued raw material, which you can utilize and harvest tree-by-tree.

The need to work with the nature conditions

JS: In our case, [the] difficulty is when our logs need to be cut in wintertime. The limits are in the roots, and the wood is frozen; at the same time, they need to saw planks when the wood is frozen, and this kind of working time period is quite short – we talk about December, January, February, and March. When the planks are sawn, they make piles and put them on the drying pallets. If we're making this kind of tree-by-tree harvesting, we cannot get so much volume that [is needed] in our processes; and because we are using wind-drying methods, [which is] a super environmental approach, we don't use any electricity or other forces to dry the wood – the natural way of drying takes time. We keep wood tensions and other things in balance, [and this] start of processing [wood] is the best you can get.