



Puutuoteteollisuus

Industrial

Sustainable building with wood

Matti Mikkola, CEO, Federation of the Finnish Woodworking Industries



“Wood is a traditional construction material that can last for centuries”

Horyu-Ji Temple

Japan has been struck by magnitude >7.0 earthquakes 46 times since 607AD. How did the 122 foot tall structure stay upright through all that shaking?



Greensted Church, Essex, UK

The oldest wooden church in the world and also the oldest wooden building in Europe with a nave dating back to between 998 and 1063 AD.



Orthodox church in western isle of Kizhi, Russia

The biggest (123 feet) building in the world that's made entirely from wood - even down to the nuts and bolts - over 150 years ago.



“Wood is globally gaining more foothold in urban construction”

Banyan Wharf, London





Bridport House rental apartments, London UK



International house, Sydney, Australia

Brock Commons Tallwood House, Vancouver, Canada





Eskolantie, Helsinki, Finland

Why should we build more out of timber?

Global megatrends are supporting increased use of wood
– we just need to grasp the opportunities



SEE BUILDINGS
RISE FASTER

SOLUTION FOR URBANIZATION
INCREASED OUTPUT
HIGHER PREFABRICATION
MINIMISED DISTURBANCE
INCREASED SAFETY
FASTER PAYBACK





STRONG DOES NOT
HAVE TO BE HEAVY

LESS WASTE
HIGH QUALITY
HIGH MATERIAL EFFICIENCY
AIRTIGHT PRODUCTION

ADDITIONAL FLOORS
SUITABLE FOR CHALLENGING SITES

TRAPPING CARBON
WITH THE POWER
OF THE SUN

CO2 EMISSION REDUCTION
ENERGY USE REDUCTION
THE ONLY RENEWABLE BUILDING MATERIAL
BETTER INDOOR AIR
FROM THE GROWING FORESTS

Reality check

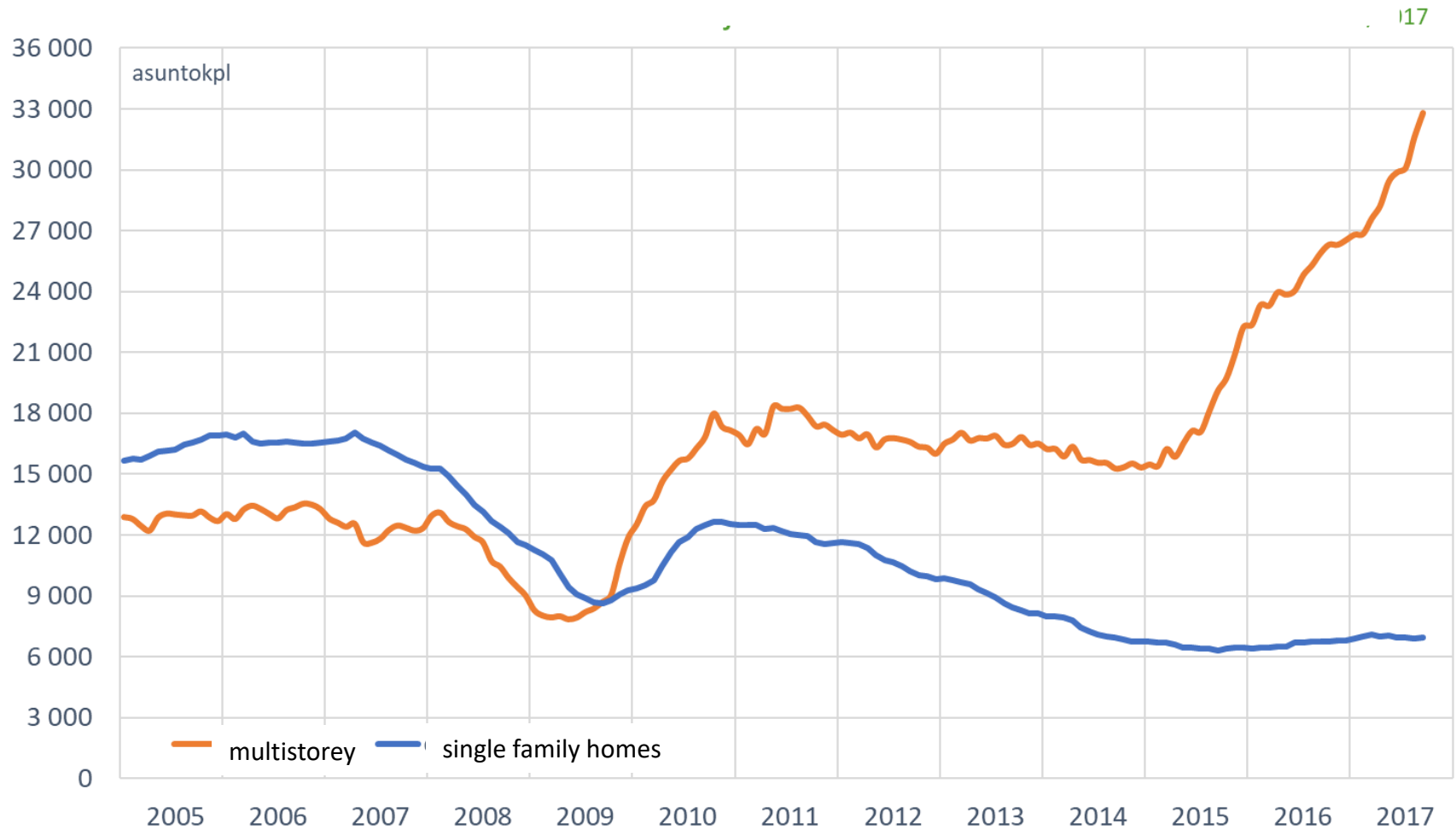
- use of wood in construction in Finland

Over 80 % of the single family homes in Finland are wood based



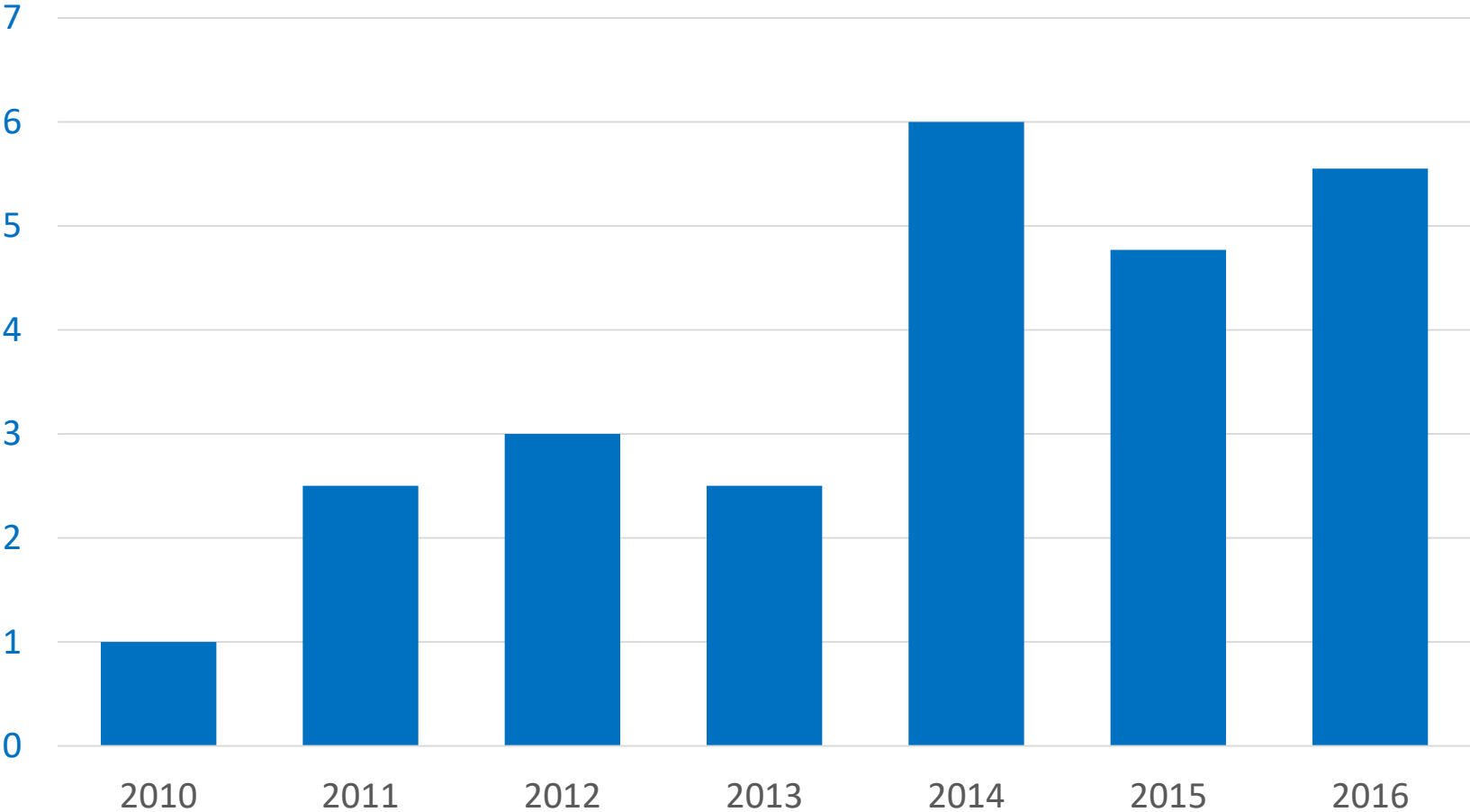
Urbanization has its impact on housing types

Housing starts single family and block of flats



Source. Statistics Finland, Forecon

Only 5 % of the multistorey apartment buildings are wood based



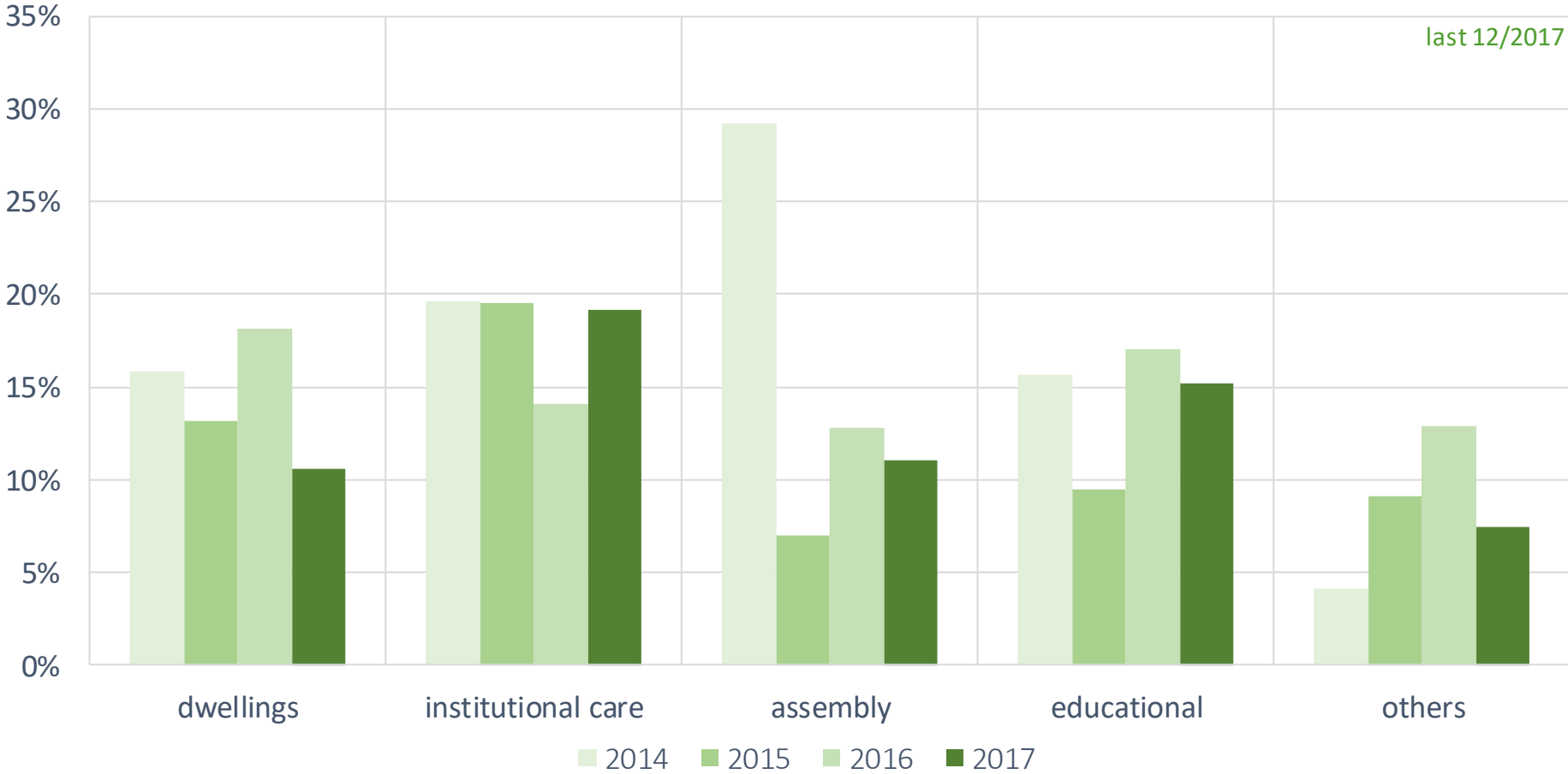
■ Market share of wood frame in multistorey apartment buildings (%)

(Source: Statistics Finland, Forecon)



10-15 % of the public buildings are made out of wood

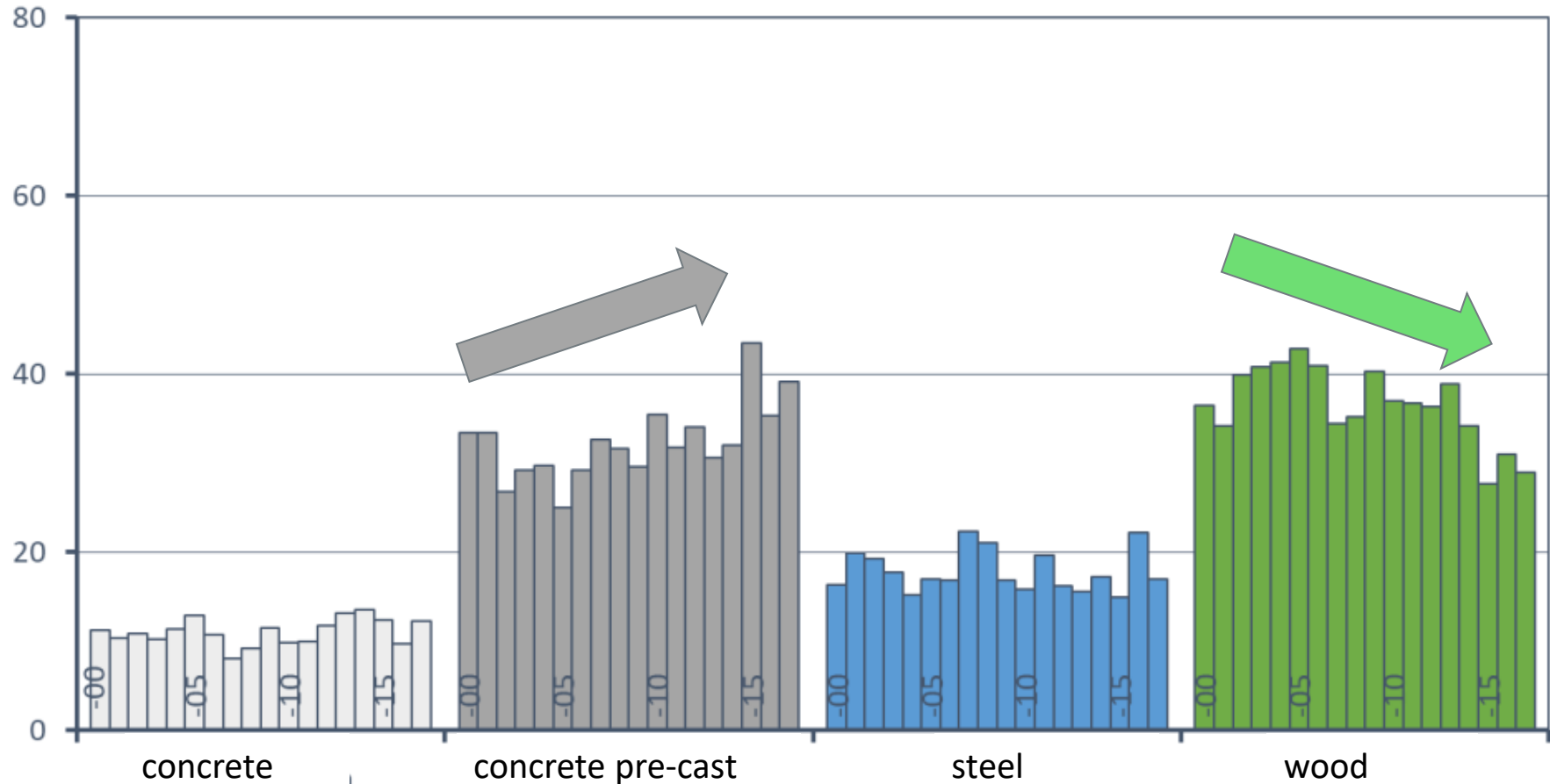
Share of wooden building frames by building types, started buildings



Source: Statistics Finland, Forecon Ltd

Wood is losing market share

Frame material in new buildings 2000-2017, all buildings, Finland



Source: Statistics Finland

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Why are we not building more out of timber?

Do we have major problems with

Building codes and regulations



Building systems and methods



Supply (chain) ie. companies



Building codes and regulations
Safe, healthy and long lasting buildings

Fire
Energy efficiency
Acoustics



Building systems and methods

System compatibility is the key



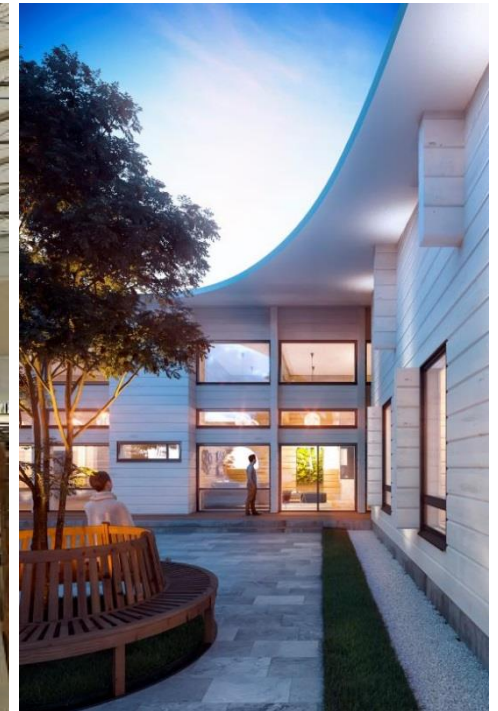
Volumetric



Post and beam



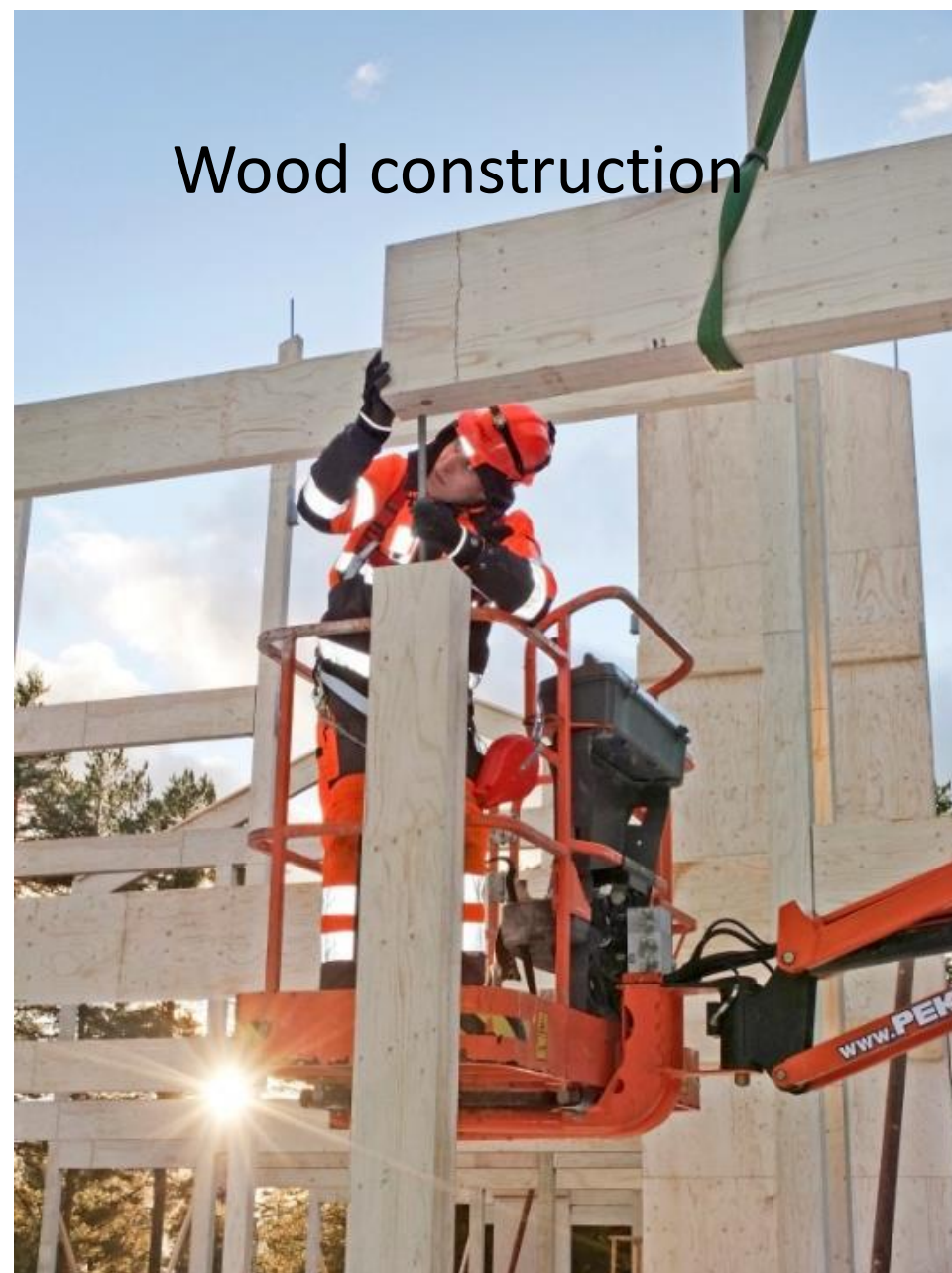
Hybrid technology



Modern log

Supply (chain) ie. companies Industry transformation

- What is the role of the woodworking industry?



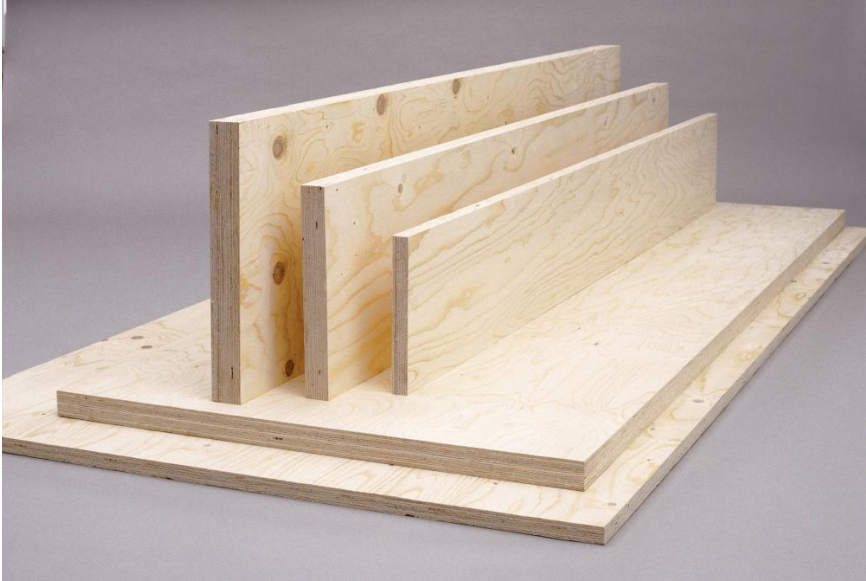
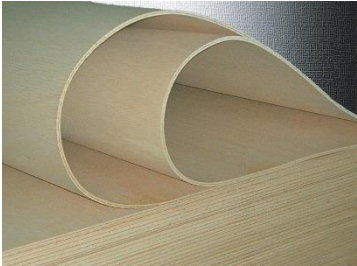
Supply (chain) ie. companies

Wood industry focusing on products

- but developing and supplying open info on how to use the products



Open Source
Wood Initiative



Supply (chain) ie. companies
New companies developing
wood construction further



TO DO LIST:

1. Shape the market further
 - Harmonize the building regulations in Nordic region
 - Repeat the message – safe and healthy living
 - Work with the message – more and stronger scientific evidence
 - Work with the public building sector – help the municipalities
2. Work with the systems
 - Enable the system compatibility
3. Work with the industry transformation
 - Educate the designers
 - Enable cumulative learning (through repetition)

Arctic wood construction



Even more important to underline the positive aspects of using wood in construction

- Positive impact on local economy
- Positive impact on local image
- Positive impact on healthy living

We need Nordic collaboration to do the arctic cooperation

- Harmonization and system compatibility

Possibility to take the lead in arctic construction

- We have the know-how
- We have the companies
- We have the raw material



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