Ten years of multi-storey timber buildings in Sweden

What have we learned and what about the future?

martinsons

Håkan Risberg

Short facts about Martinsons

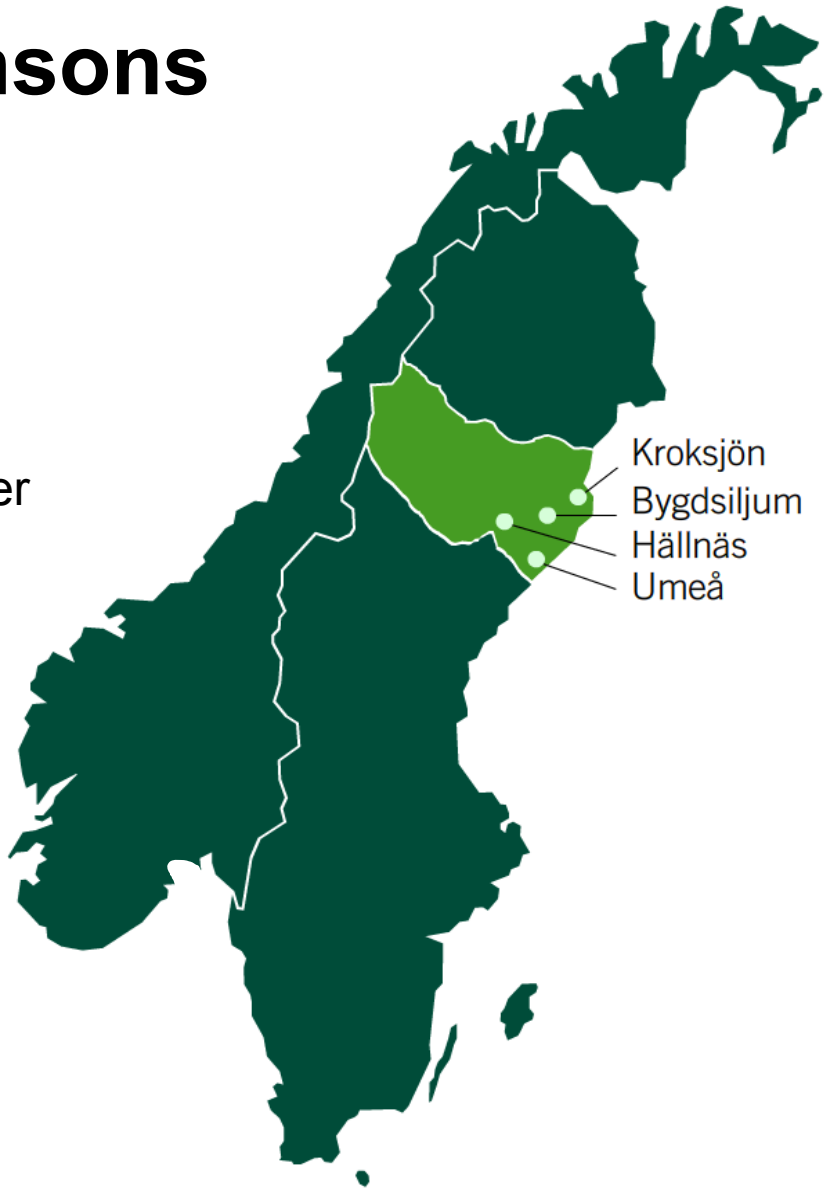
430 employs

Turnover 1.3 billion SEK

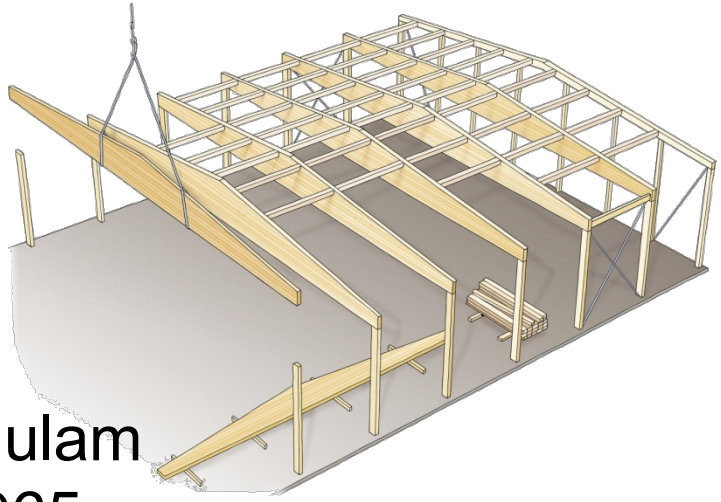
Further refined:
- Planed
- Glulam
- Cross laminated timber
- Wooden bridges
- Hall buildings
- Stands
- Multi-story buildings

Distributor in Norway - SPLITKON AS

Material supplier with design skills

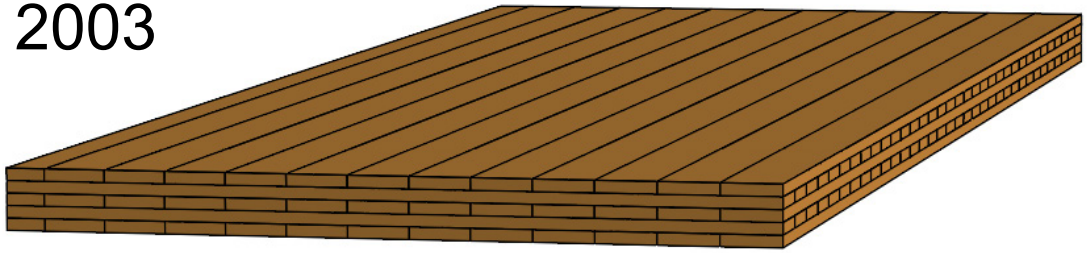


Ten years of multi-story timber buildings

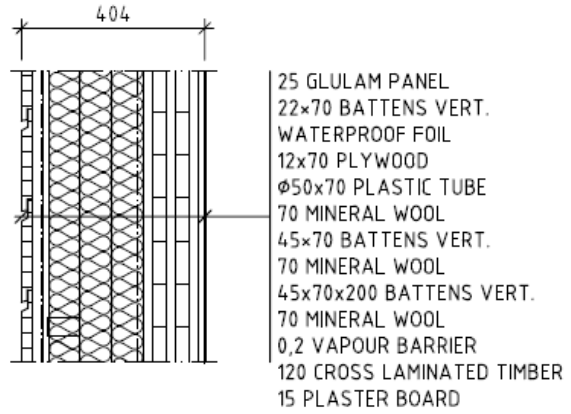


Glulam
1965

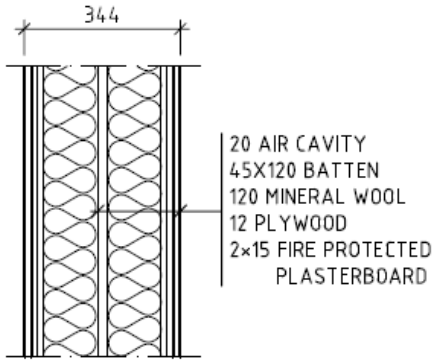
CLT
(Cross Laminated Timber)
2003



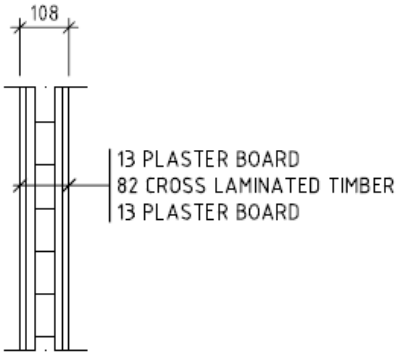
Building elements



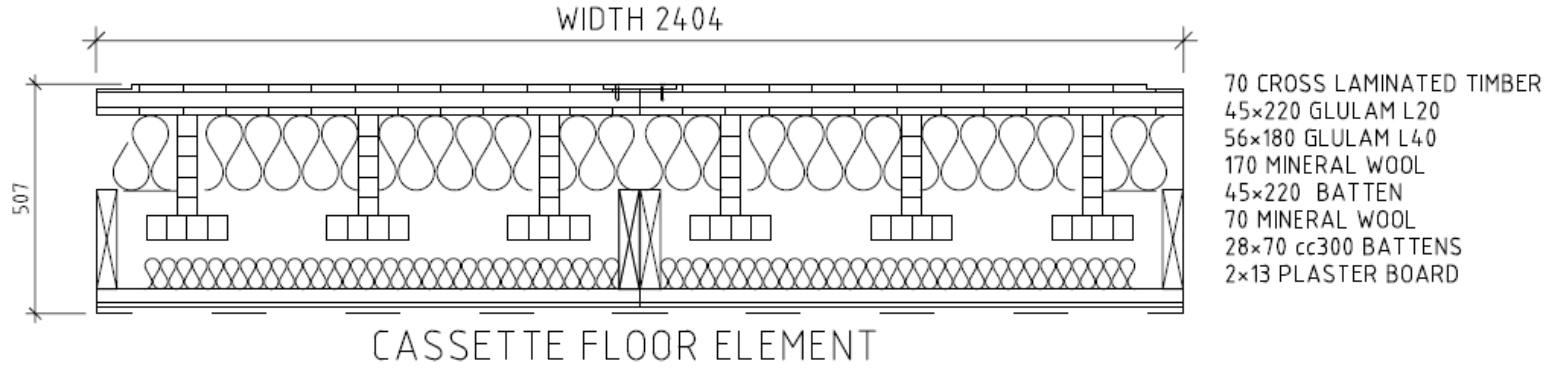
OUTER WALL



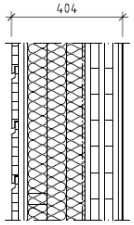
PARTITION WALL



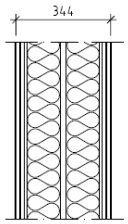
INNER WALL



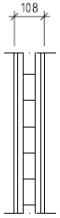
CASSETTE FLOOR ELEMENT



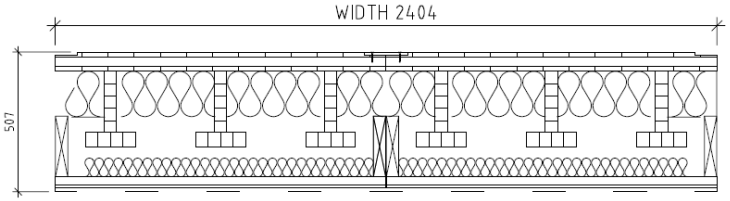
OUTER WALL



PARTITION WALL



INNER WALL



CASSETTE FLOOR ELEMENT

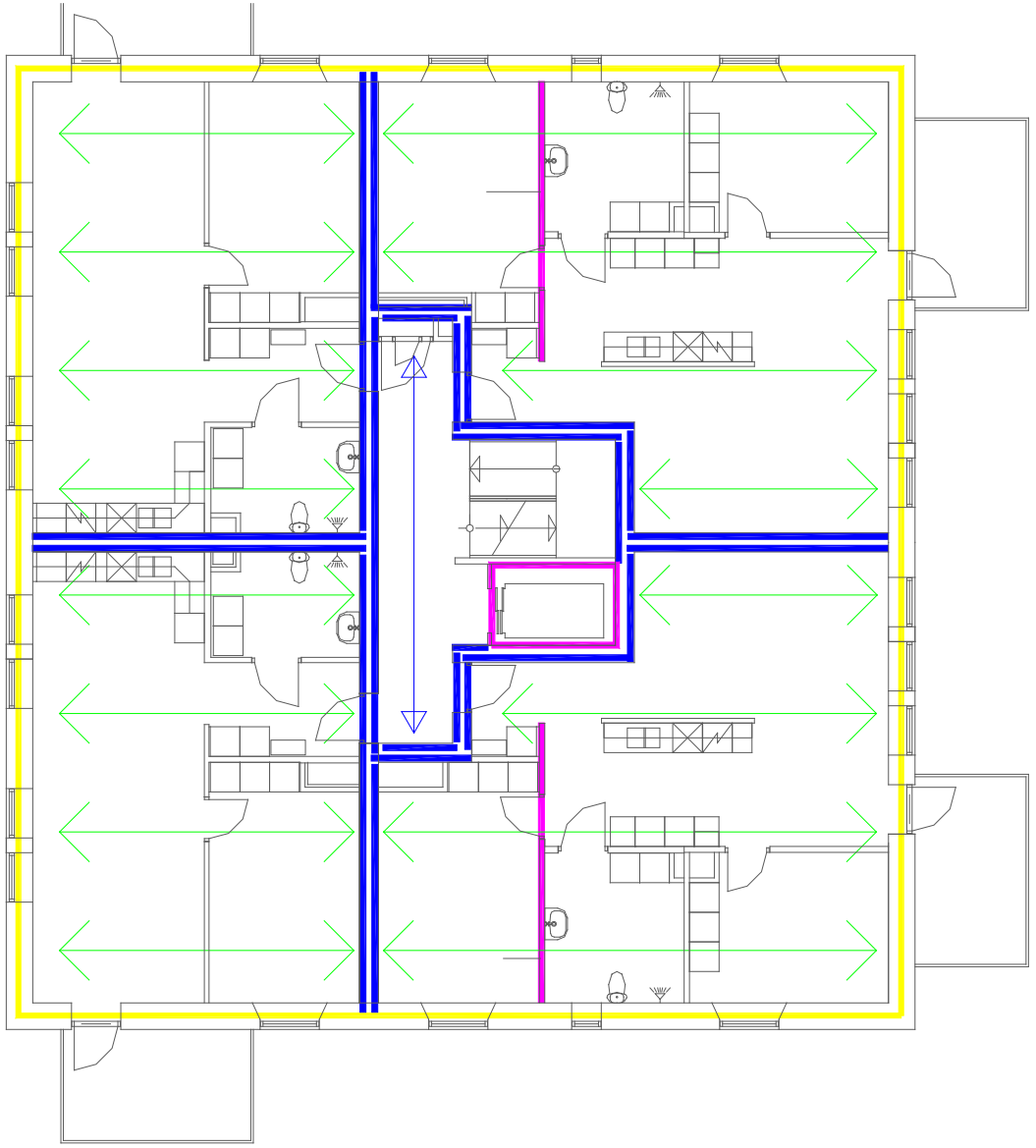
PARTITION WALL

OUTER WALL

INNER WALL

CASSETTE FLOOR

CLT FLOOR SLAB



”Building construction machine”

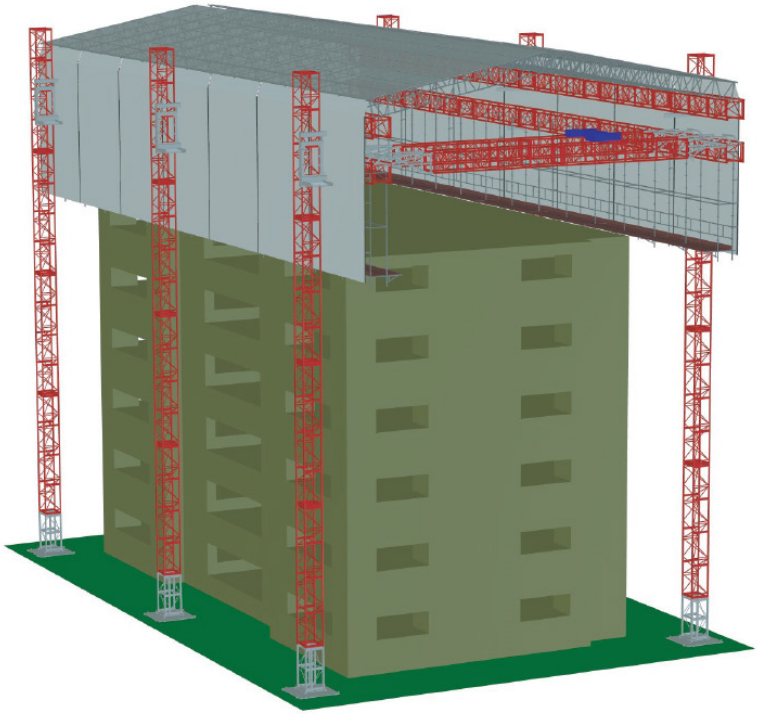
Self stabilizing climbing structure.

Fittings

- Overhead traveling crane
- Weather protection
- Occopational saftey

EXTOLER®

Säkerhet, Kvalitet och Effektivitet.



Montagesystemet EXTOLER

Inre Hamnen, Sundsvall; White arkitekter

Kv Limnologen, Växjö; Arkitektbolaget

Portvakten Söder, Växjö; bsv arkitekter & ingenjörer / Seth Bengtsson arkitekt & husbyggnadsingenjör.

Passive house

Challenges

- Airtightness of the climate shell
- Insulation
- Humidity
- Ventilation
- Cooling demand

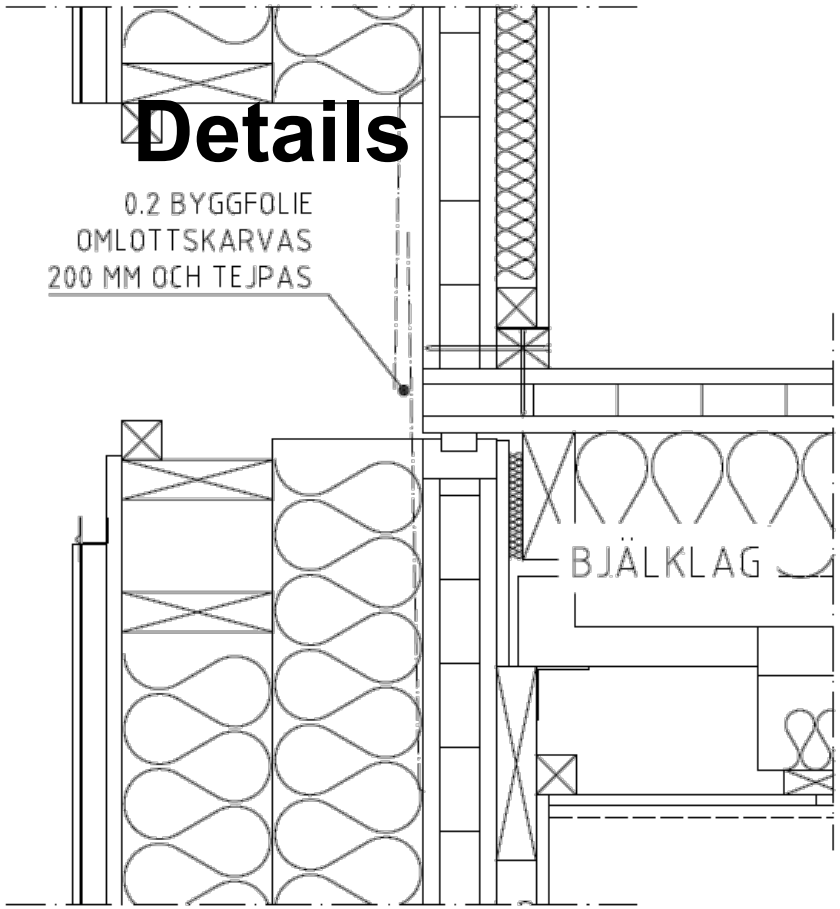
Airtightness of the climate shell

- Knowledge sharing
- Carefully considered details and joints
- Verification (pressure test)

Allowed air leakage for passive houses = 0,3 l/(sm^2)

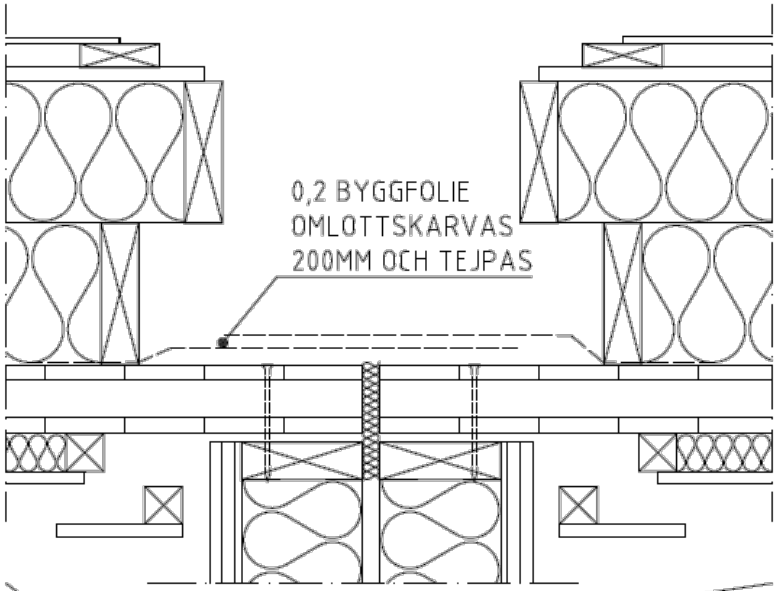
Allowed air leakage for Portvakten = 0,2 l/(sm^2)

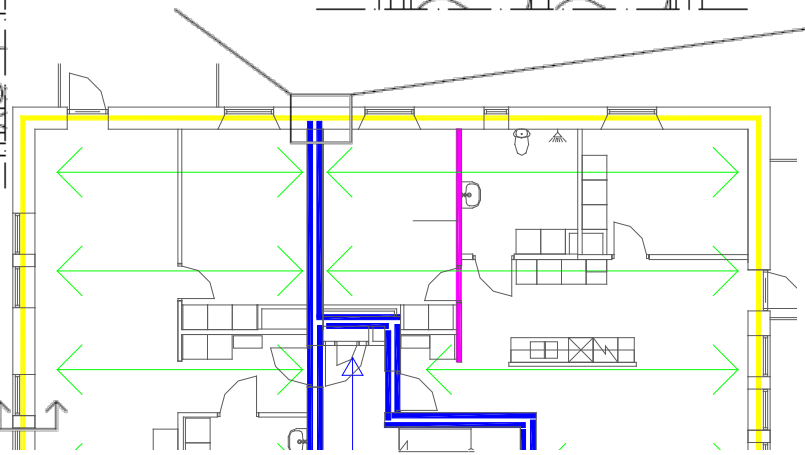
Details



VERTIKALSNITT

HORISONTALSNITT





Pressure test Results

- Wall elements 0,12 l/(sm^2)
- One floor 0,19 l/(sm^2)
- The entire building 0,19 l/(sm^2)

Allowed air leakage for passive houses = 0,3 l/(sm^2)

Allowed air leakage for Portvakten = 0,2 l/(sm^2)

Pressure test – wall elements

Strandparken, Sundbyberg; Wingårdh Arkitektkontor AB.

What about the future?

- More public and commercial buildings
- Increased flexibility for future changes in the buildings
- Taller buildings

Tips for a successful project

- Tight well-functioning project team
- Select your areas of focus carefully
- Right material in the right place

martinsons

” A naturul part of the future ”