

A CLOSER LOOK AT WOOD AS A BUILDING MATERIAL

TIMBER

FROM TRADITIONAL TO
CONTEMPORARY
ARCHITECTURE

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Head of a local construction company

Development of the application concept
For the 2031 | 2033 World Championship (together with Sebastian Scholz)



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CO ROSA Architektur
Member IG Lifecycle
and sustainable Buildings –

Publisher + Speaker



ROSA Architektur

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HBLFA | Raumberg Gumpenstein



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KIGAS

KINDERGARDENS

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KINDERKRIPPE | Aigen

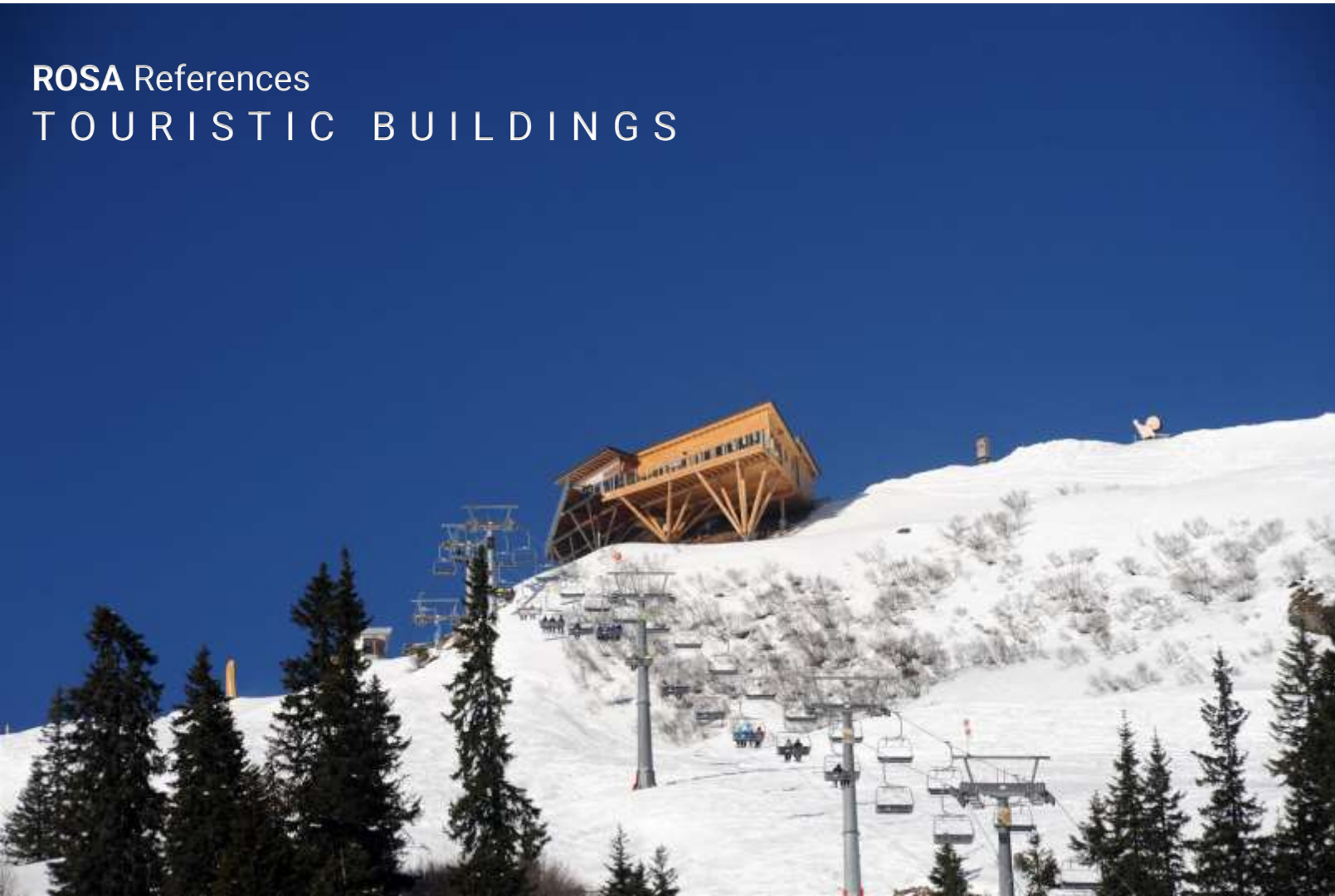


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TOURISTIC BUILDINGS





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HOUSING

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RENOVATIONS

HOSPITAL
TO
HOUSING















RENOVATION AND EXTENSION
OF A HISTORIC FARMBUILDING

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RECYCLING OF INDUSTRIAL WASTELAND

RE-USE | VACANCY ACTIVATION



ehem. HOFER-AREAL
Stainach

The

REGION

we are living and working in.





WOOD

SOIL



**BUILDING
CULTURE**

**TOWNSCAPE
LANDSCAPE**

How much

SOIL

GROUND

Is used for buildings in Austria each day?

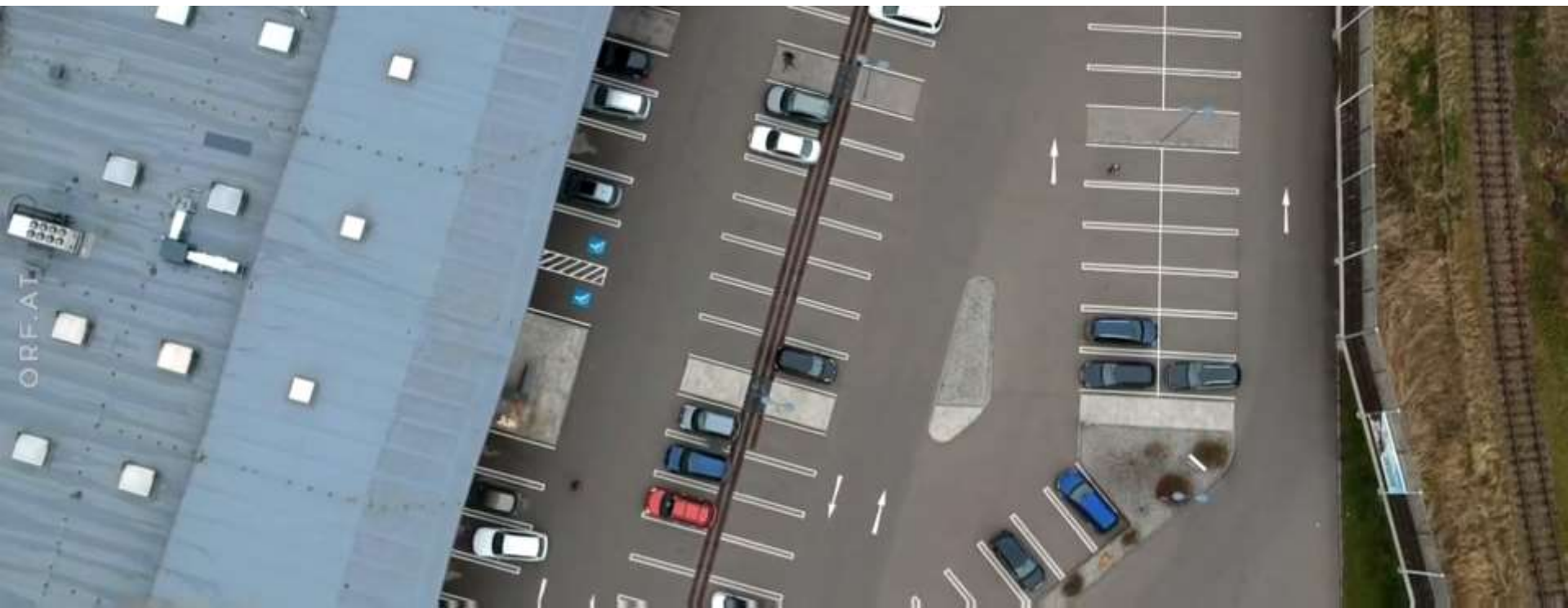
11,5 ha

115.000 m²



11,5 ha

= 16 soccer fields valueable farmland per day
= every 10 years the whole area of Vienna



Reasons for soil protection



Food sovereignty

*Each year we destroy farmland for nutritional basis for 20.000 people in Austria.
This means dependency for food import in 2030!*

Generation-Fairness

*The 2 Generations since WW2 used more land
than all the generations before collectively in history.
Next Generations might not be able to plan their development carefree.*

Ecologically Funktion

Biodiversity, natural life resources for humans, fauna and flora

Climate protection

*Land & Soil = 2.largest greenhouse gas-reservoir!
Achieving Climate targets impossible without massive soil protection.
Soil = Water storage and filter (flood risk, overheating)*

If we keep on going without change,
there might be no farmland anymore in 140 years



How many empty,

VACANT BUILDINGS

exist in Austria?



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**= Area of Vienna
= 5.000.000 flats**

40.000 ^{400.000.000 m²} **ha**

“

**Austria is
already built!**

”

Reasons for

BUILDING IN EXISTING STOCK



- Local revitalisation, frequency
- Sustainable use of existing resources
- Qualities of central housing
- Strengthening the needs of the community
- Preserving and developing building culture
- Strengthen local economy & craft

BUILDING INDUSTRY

has a considerable influence on the global use of raw materials and resources



- ❖ Responsible for 40% (!!!) global CO2 emissions
- ❖ Buildings account for 40% of the EU's energy demand (new buildings twice as much as renovations)
- ❖ 80% of mineral raw materials: construction sector
- ❖ 36% of global waste: construction sector
- ❖ 50% of global resources

→ **vice versa key role in potential savings and climate protection**

CONCLUSION

OUR RESPONSIBILITY

→ We architects are part of the problem and can be part of the solution!

HOW?

- Putting an end to enormous land consumption!
 - Vacancy activation and brownfield recycling
- Renovation | extension instead of new buildings
 - Raising awareness and setting an example
 - Multifunctional use of space
- Ecological, CO2 neutral building & design: W O O D | T I M B E R!

CONCLUSION

OUR CHANCE

→ We architects are part of the problem and can be part of the solution!

→ Renovation culture and working on existing buildings
**opens up a wide-ranging and lucrative field of activity for us architects,
that requires a lot of expertise.
Specialise in this!**



LANDSCAPE TOWNSCAPE



Traditional, grown rural architecture





Old and new combined



Modern interpretations (material, form, roof)









TOURISM

TOWNSCAPE & LANDSCAPE



Some alpine regions suffer from Overtourism and Overbuilding – affect on Town- and Landscape!

Some alpine regions suffer from Overtourism and Overbuilding – affect on Town- and Landscape!



Authentic Village structure...? Or superficial Alps-Disneyland....?!





TIMBER

TRADITION vs INNOVATION

Holzbau traditionell



Pfahlbauten Unteruhldingen, Bodensee



Holzbaukirche Kolomansberg – erbaut 1742



Mondseer Einbaum



Rauchhaus Mühlgrub in Hof bei Salzburg, 16. Jh.

















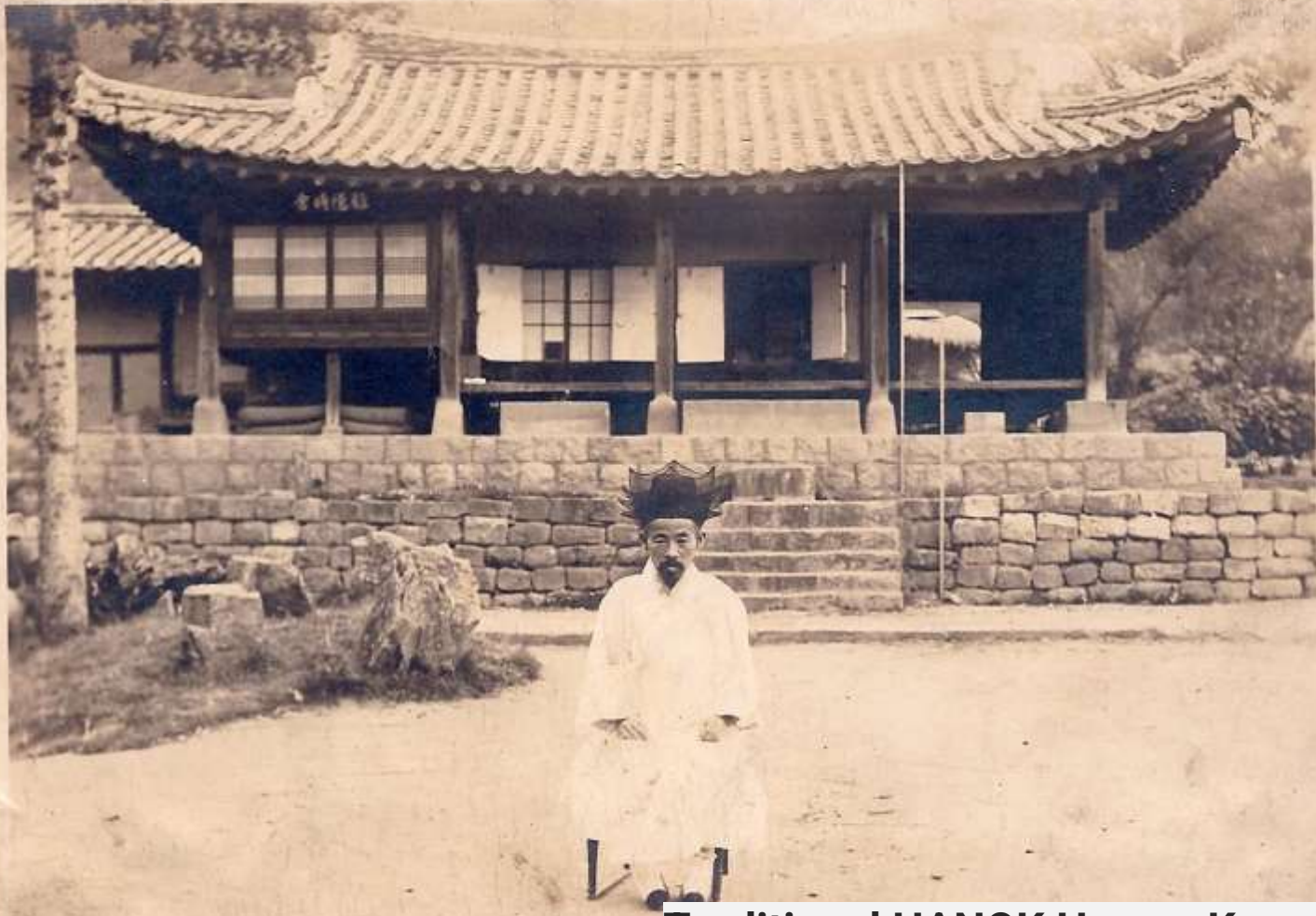


Contemporary interpretation of traditional architecture





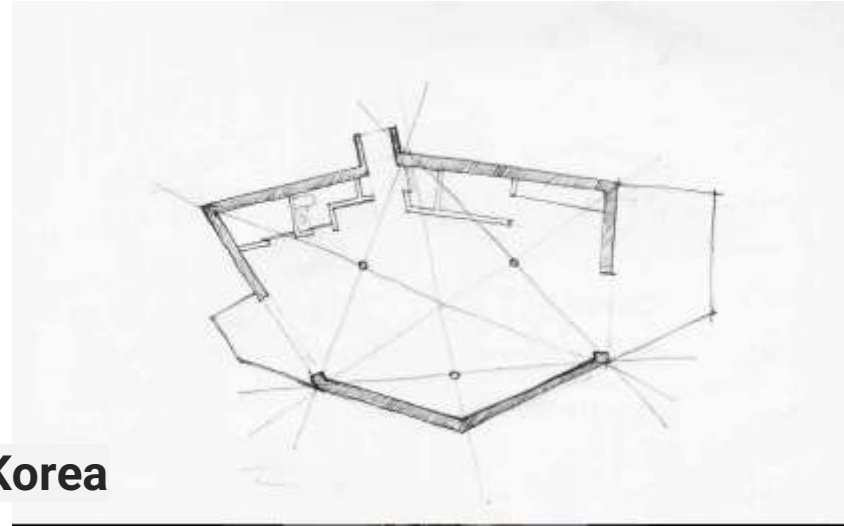
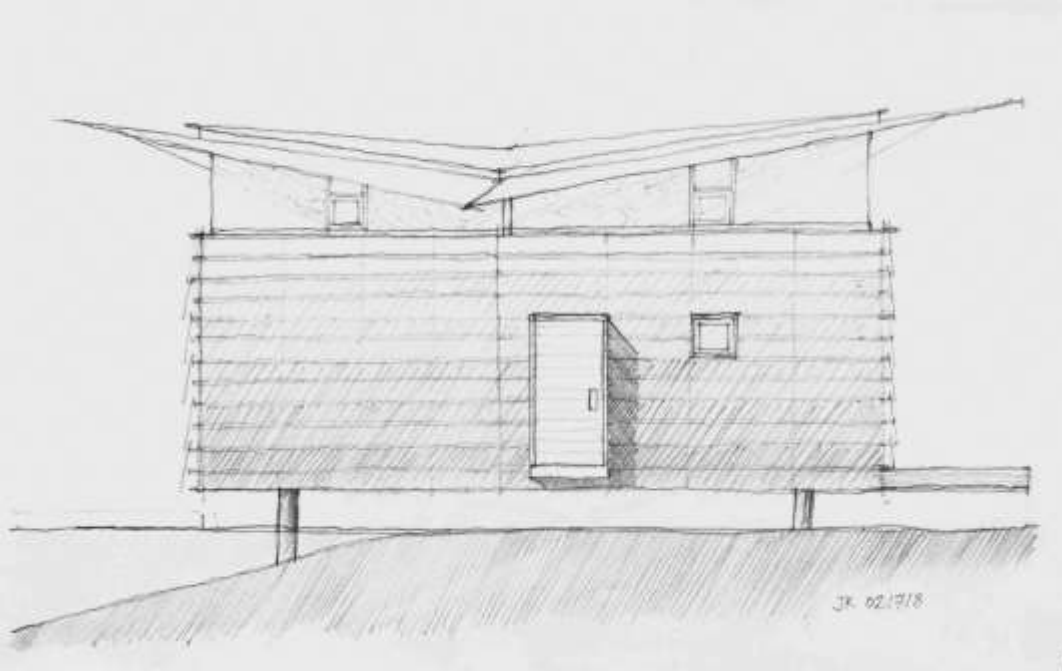
Contemporary interpretation of traditional architecture



Traditional HANOK House, Korea



Traditional HANOK House, Korea



Contemporary interpretation of HANOK House, Korea







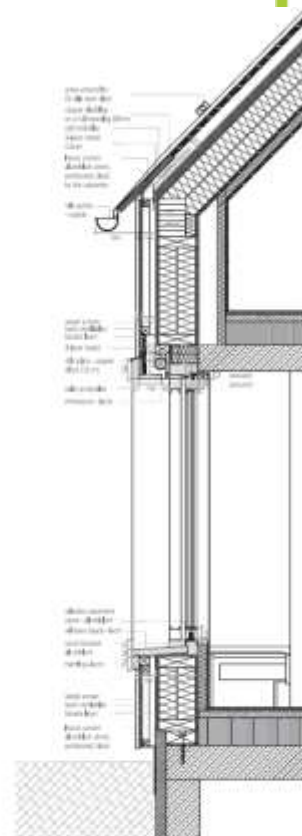
Contemporary interpretation of HANOK House, TRU Architects, Korea

Bugok Friday House by TRU Architects, Yangju-si, South Korea, 2021.

Contemporary interpretation of HANOK House, TRU Architects, Korea



Contemporary interpretation of HANOK House in Austria?





Contemporary interpretation of HANOK House in Austria?



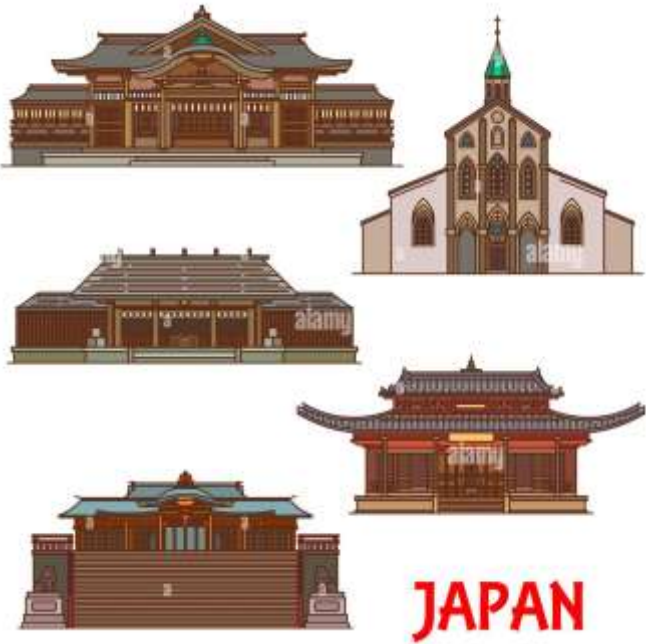
Contemporary interpretation of HANOK House in Austria?



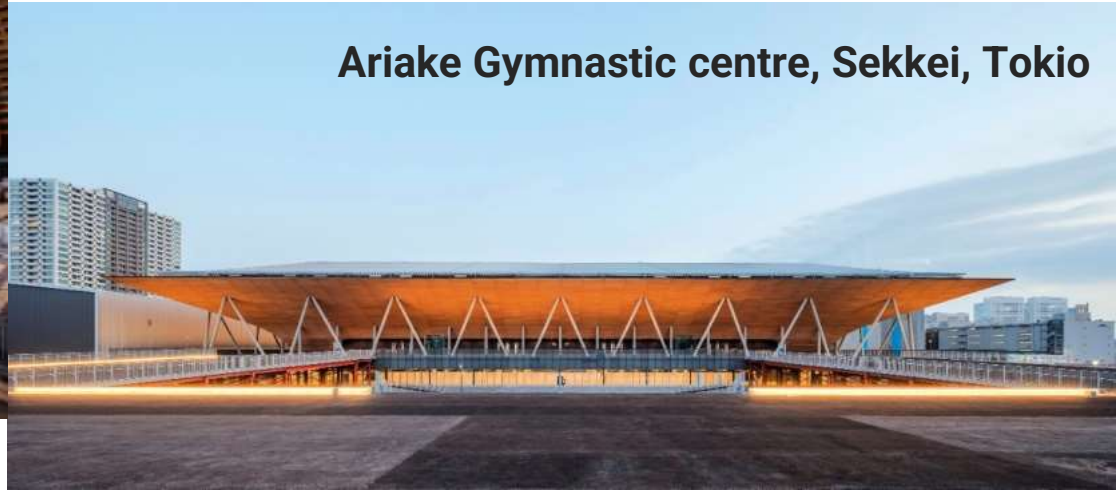
Forest Pavillon, IDS, South Korea,



Golf Club. Yeosu, Shigeru Ban, South Korea,



Ariake Gymnastic centre, Sekkei, Tokio



Zenbo Seinei, Shigeru Ban, Awaji



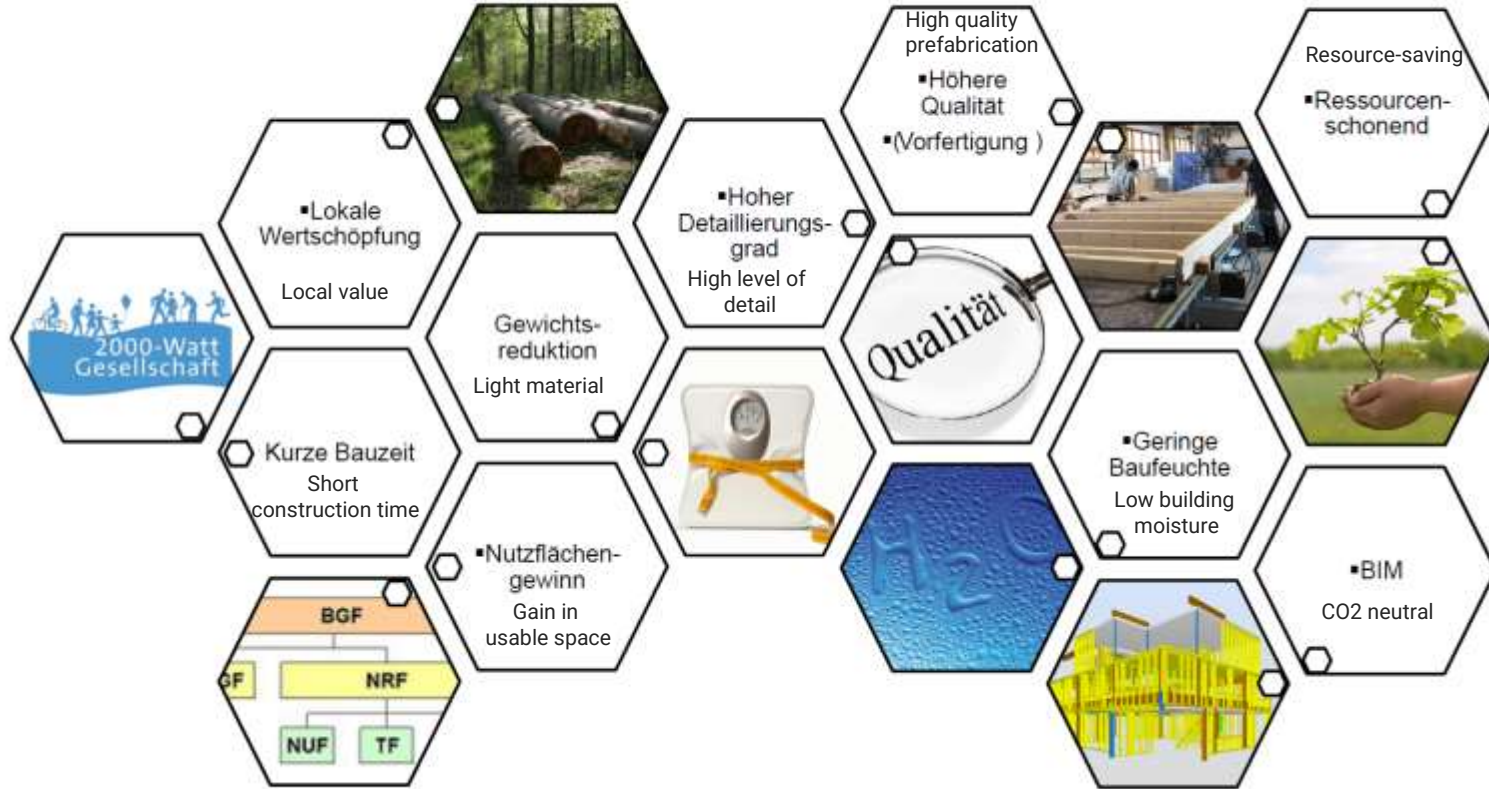
Mt. Fuji Heritage Centre, Shigeru Ban, Shizuoka

TIMBER

BUILDING MATERIAL OF THE FUTURE

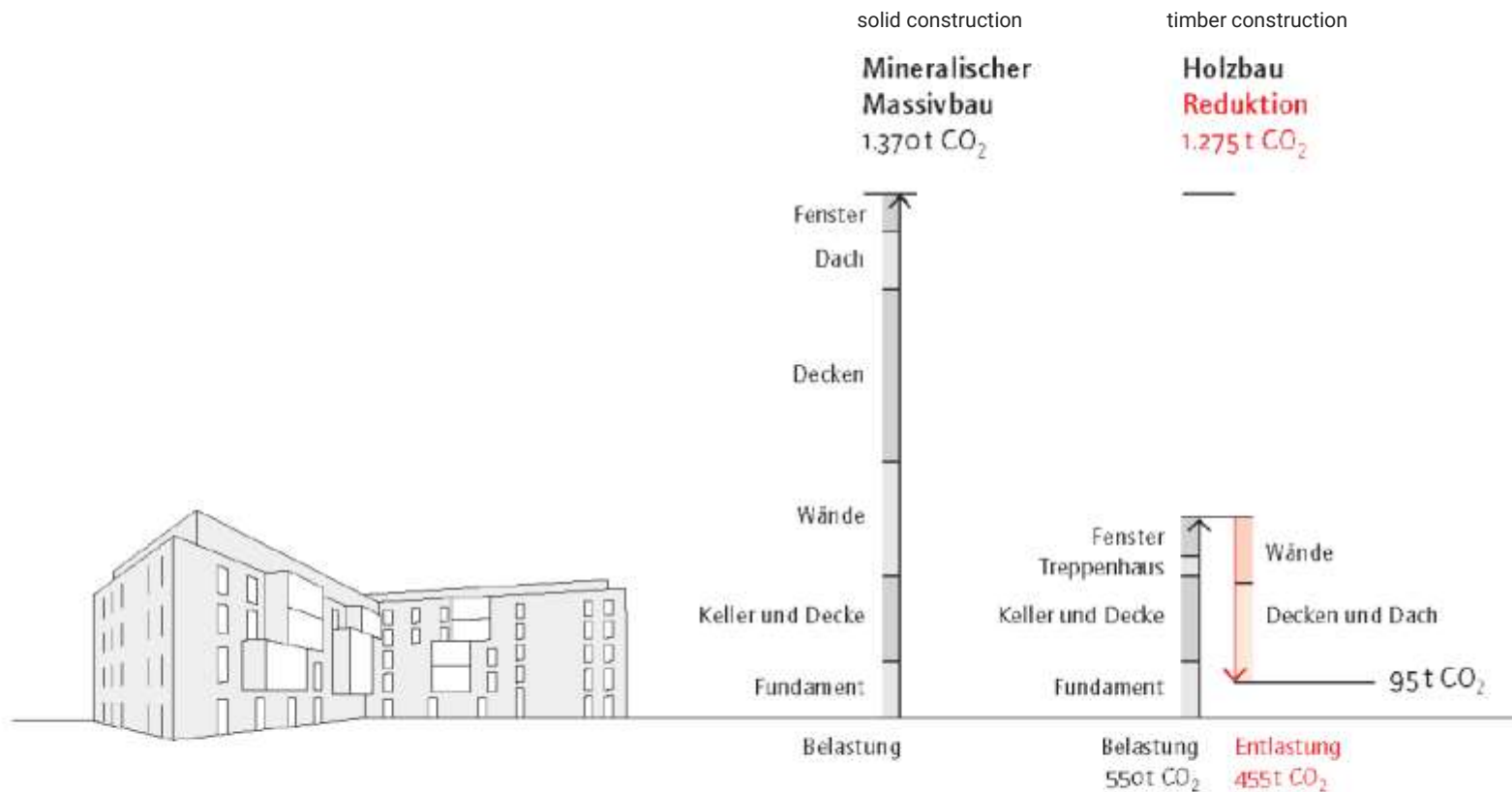
Warum baut man mit Holz?

Why building with timber?



Vergleich CO₂-Bilanz I Holzbau - Mineralischer Massivbau

Comparison of CO₂ balance timber construction and solid construction

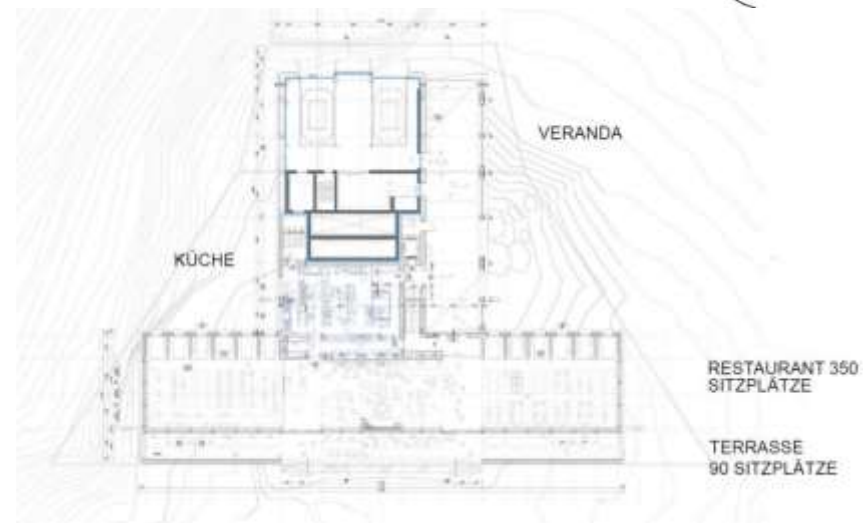
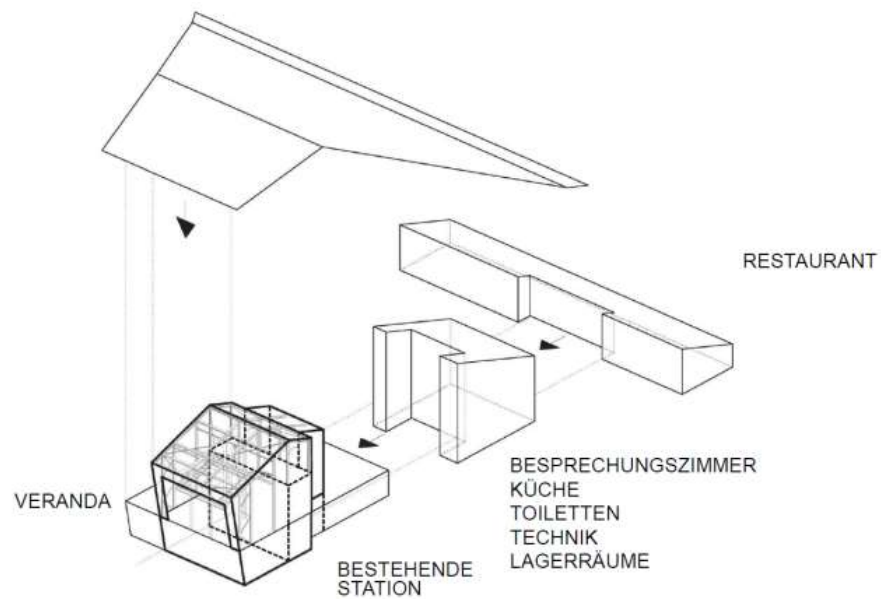
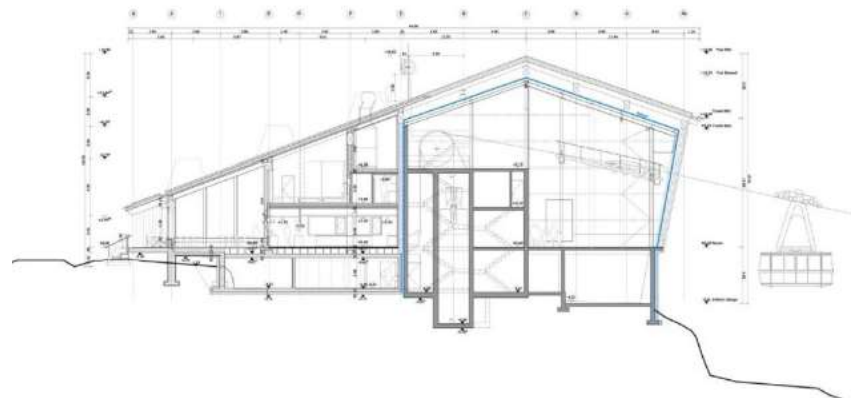


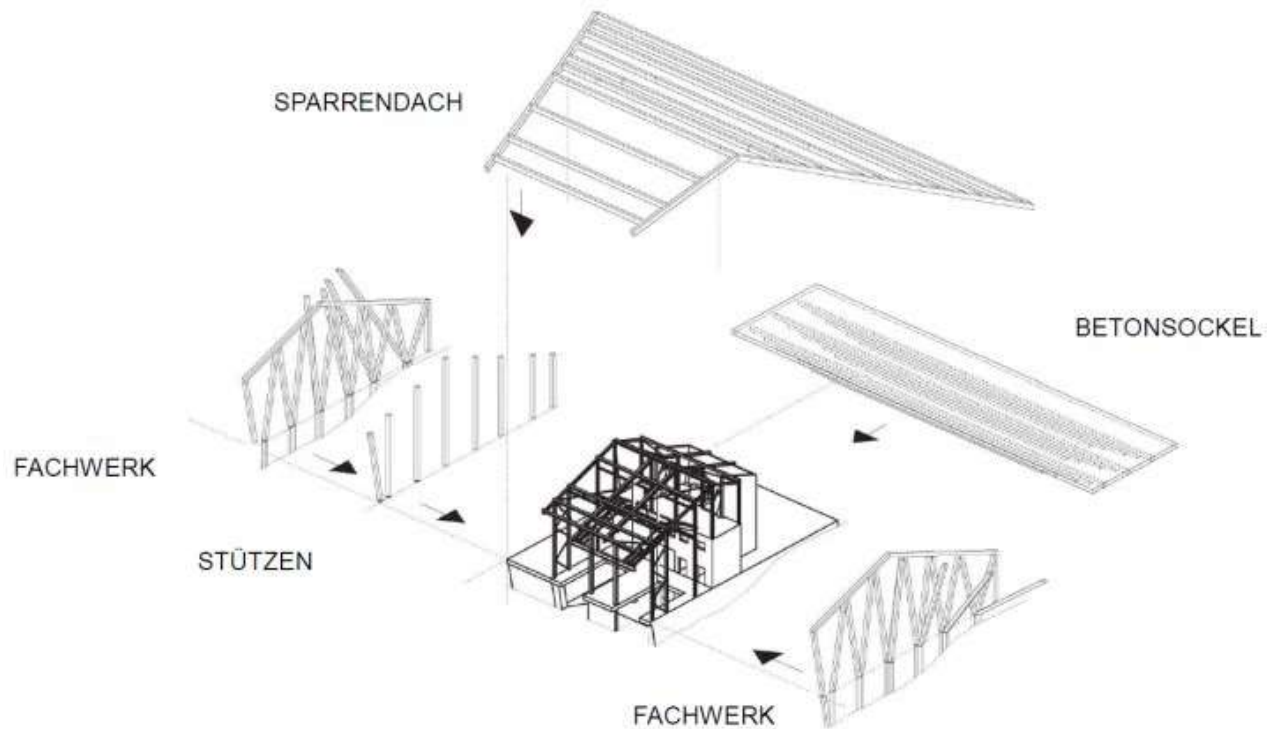
Vergleichsrechnung für einen sechsgeschossigen
Wohnbau nach 013 Index 3.0





Alpine Ski-Cablecar Building, Herzog de Meuron, Switzerland





Alpine Ski-Cablecar Building, Herzog de Meuron, Switzerland



Design principles

A sustainable approach to agriculture

Aesthetics in tourism infrastructure

Local architecture – material, form

respect for the impressive surroundings





Prefabricated timber constructions in residential building



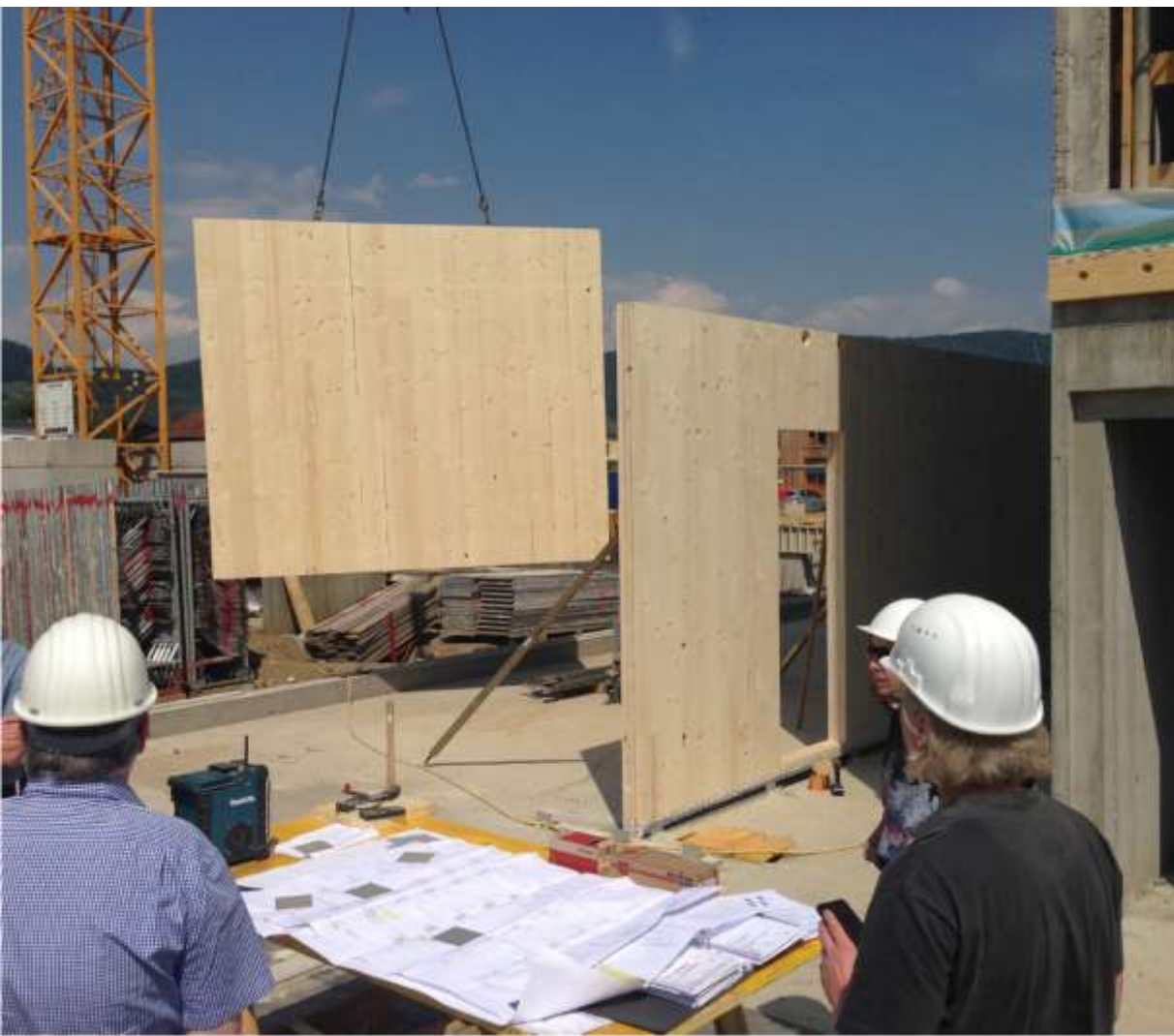
Prefabricated timber constructions in residential building



Prefabricated timber constructions in residential building









Prefabricated timber constructions in school buildings, LP architecture, Austria

HOLZTECHNIKUM
KUCHL 2017





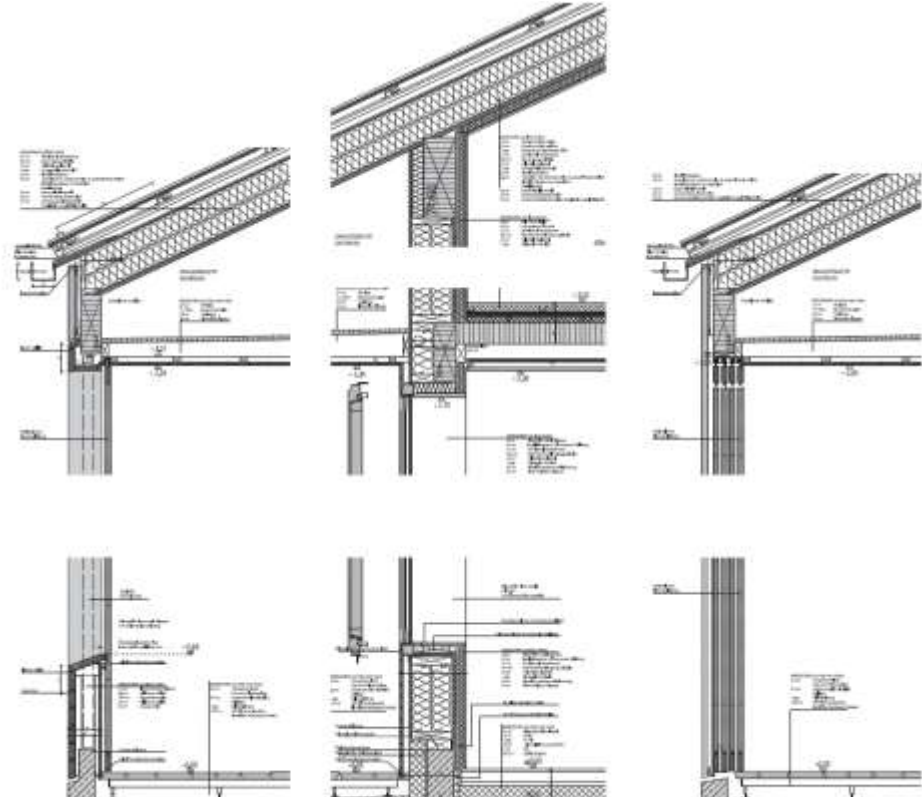














FORUM
HOLZBAU
INTERNATIONAL

5.-7. Dezember 2018



STRUCTURLAM

Intelligence In Wood

SHANE HOMES YMCA, ROCKY RIDGE

Calgary, AB, Canada

& other Projects of Interest

Nicholas Sills, Msc.

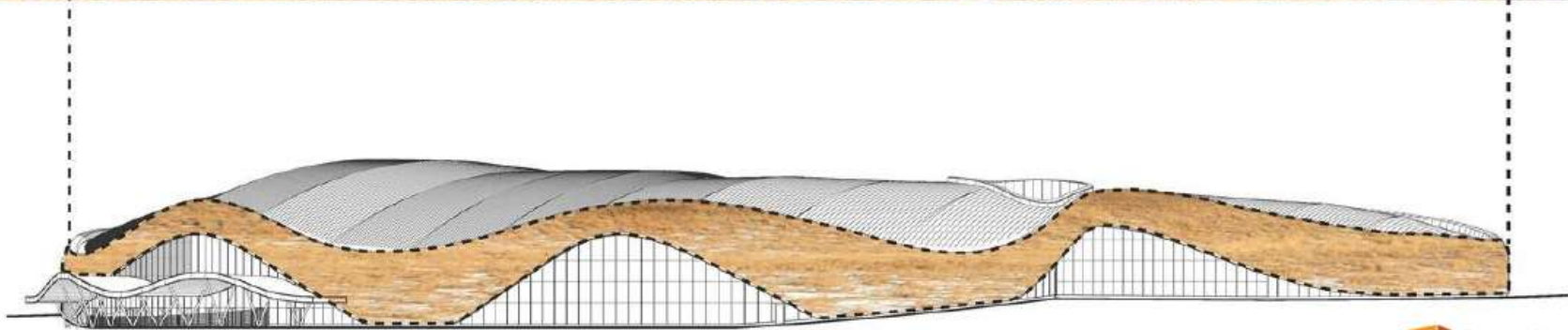
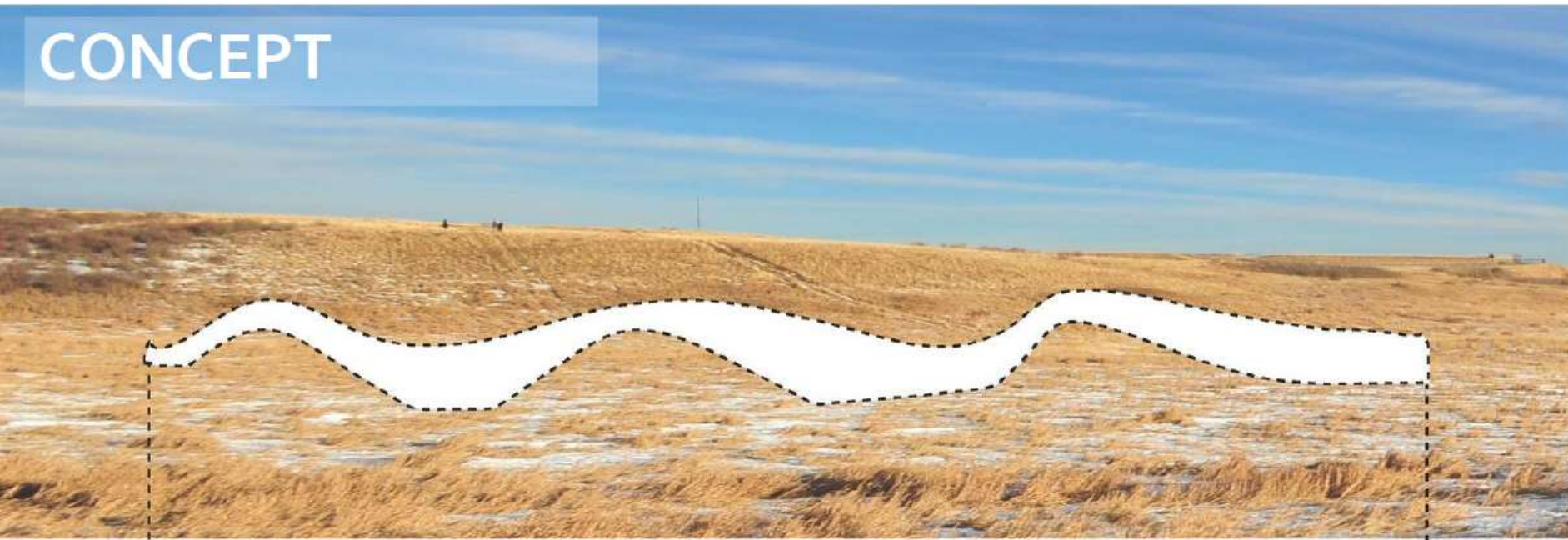


Shane Holmes YMCA Rocky Ridge Recreation

Calgary, AB

- Largest Freeform timber roof structure in North America: 26,300 m² roof area, 2850 m³ of glulam
- Pre-engineered purlin to glulam connections used for quick install
- Fully coordinated BIM system
- Large moment splices to save costs

CONCEPT





Transformation of an ancient stable building into a contemporary house





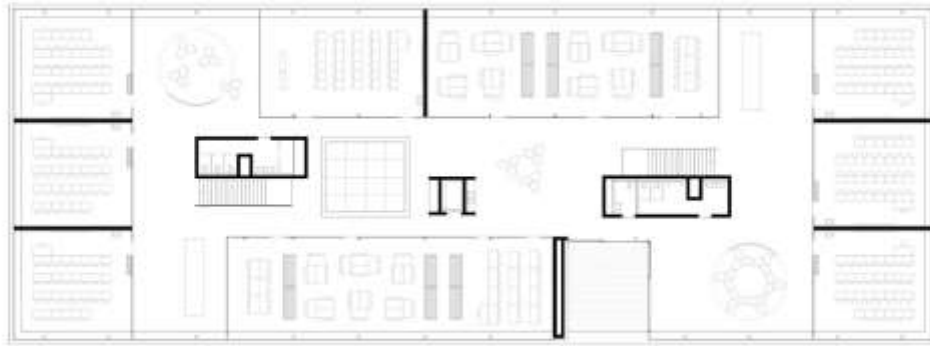
Transformation of an ancient stable building into a contemporary house

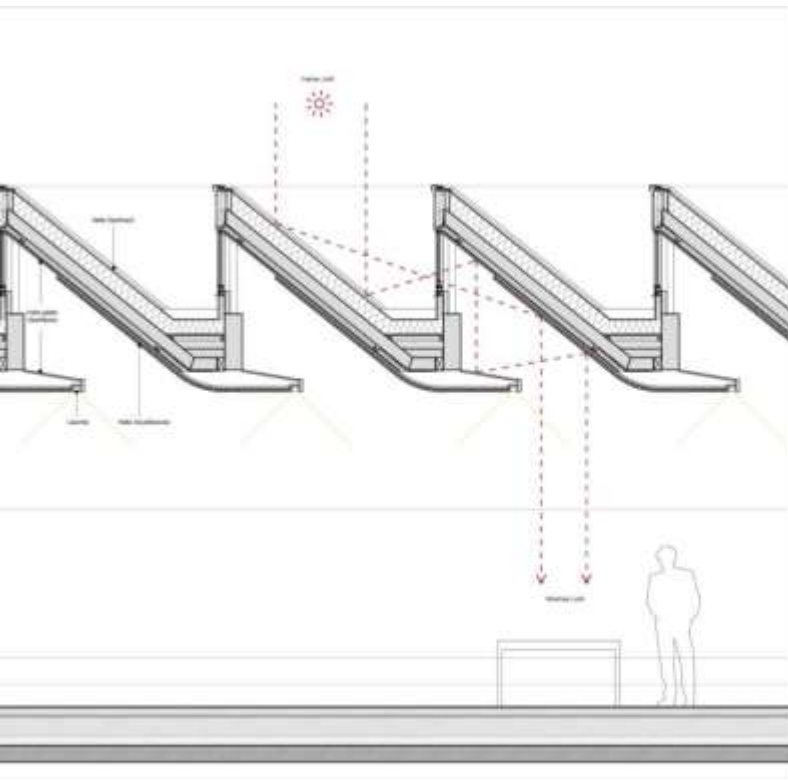




Aufstockung - HTL Bau und Design – Innsbruck - **ao**architekten

School building, **ao**architects, Austria









Prefabricated timber constructions in office buildings, Austria





Prefabricated timber constructions in office buildings, Austria

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Prefabricated timber constructions worldwide – built from Austrian Timber companies

A young evergreen sapling with vibrant green needles and a thin, light-colored trunk stands prominently in the center-left of the frame. It is growing out of a forest floor covered in a thick layer of bright green moss, with some dry pine needles and small twigs scattered around. The background is a soft-focus forest scene with more trees and foliage, creating a sense of a natural, wooded environment.

From wood

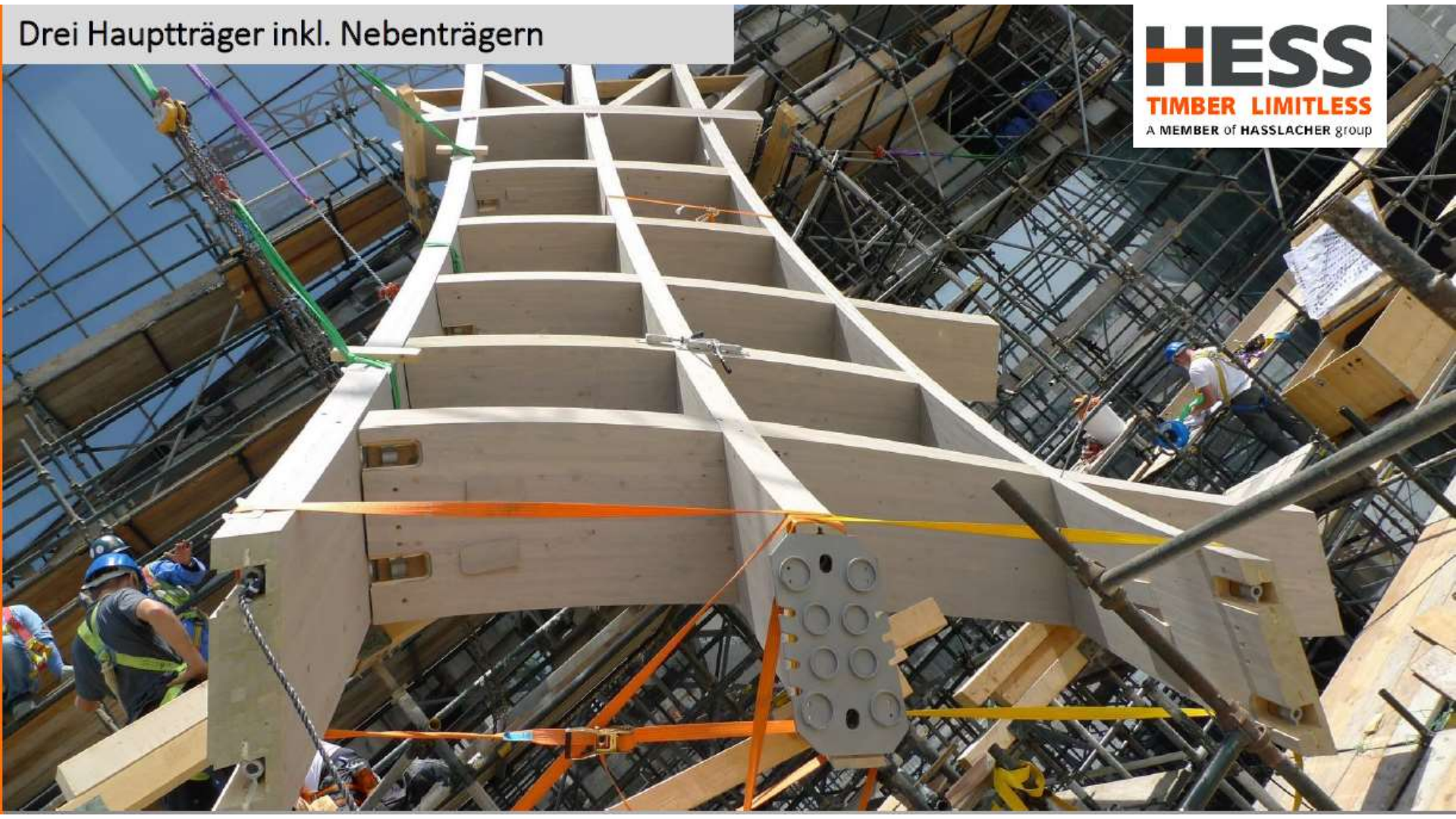
Prefabricated timber constructions worldwide – built from Austrian Timber companies

HESS
TIMBER LIMITLESS
A MEMBER of HASSLACHER group

The wooden Flowers of D1 Tower | Dubai

to wonders.

Drei Hauptträger inkl. Nebenträgern





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Prefabricated timber constructions worldwide – built from Austrian Timber companies



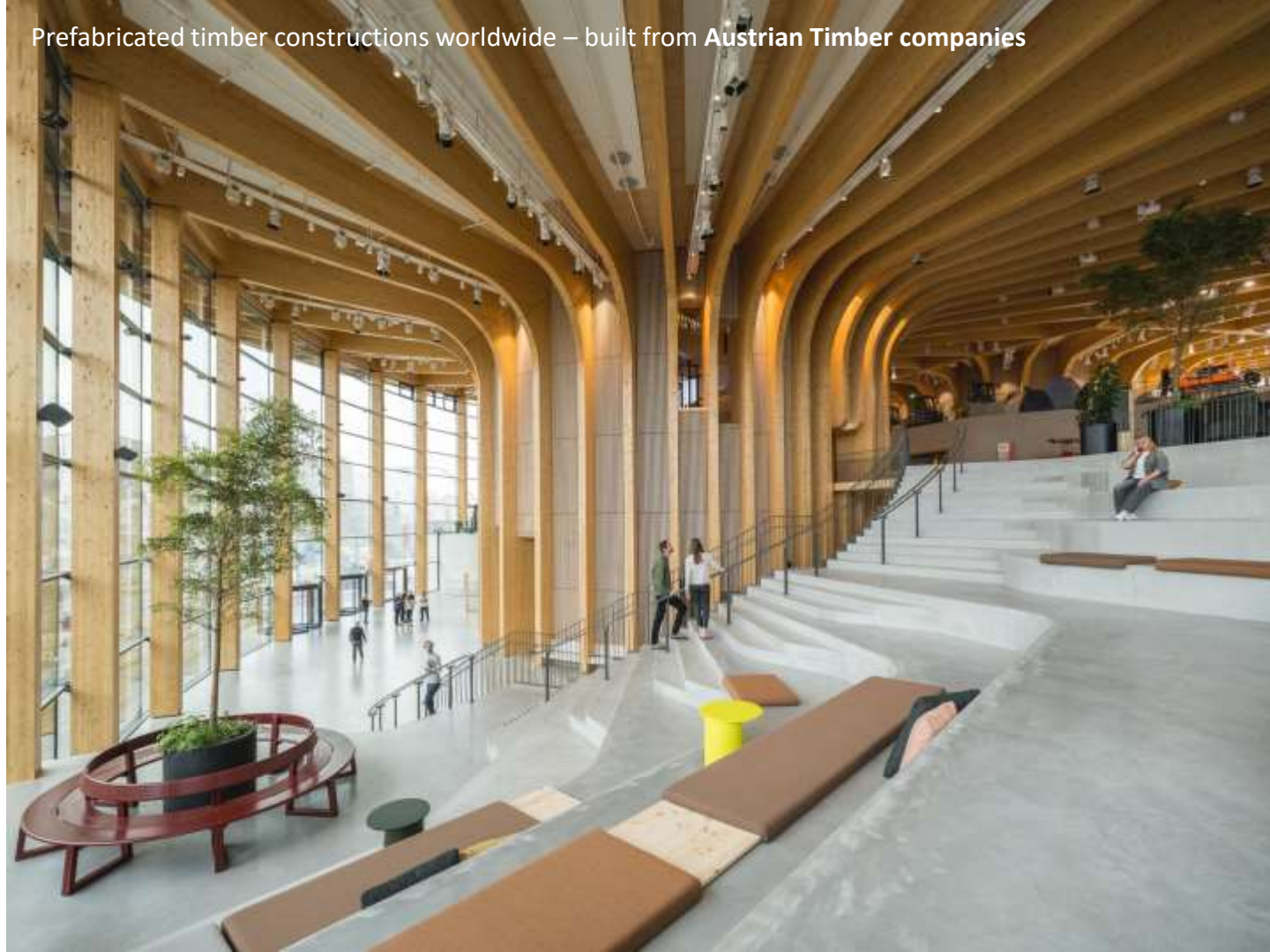
Prefabricated timber constructions worldwide – built from **Austrian Timber** companies



World of Volvo, Sweden, Henning Larsen

Prefabricated timber constructions worldwide – built from **Austrian Timber companies**

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Prefabricated timber construction worldwide – built from Austrian Timber companies



Ice-Hall, Sweden, Wahlström & Steijner

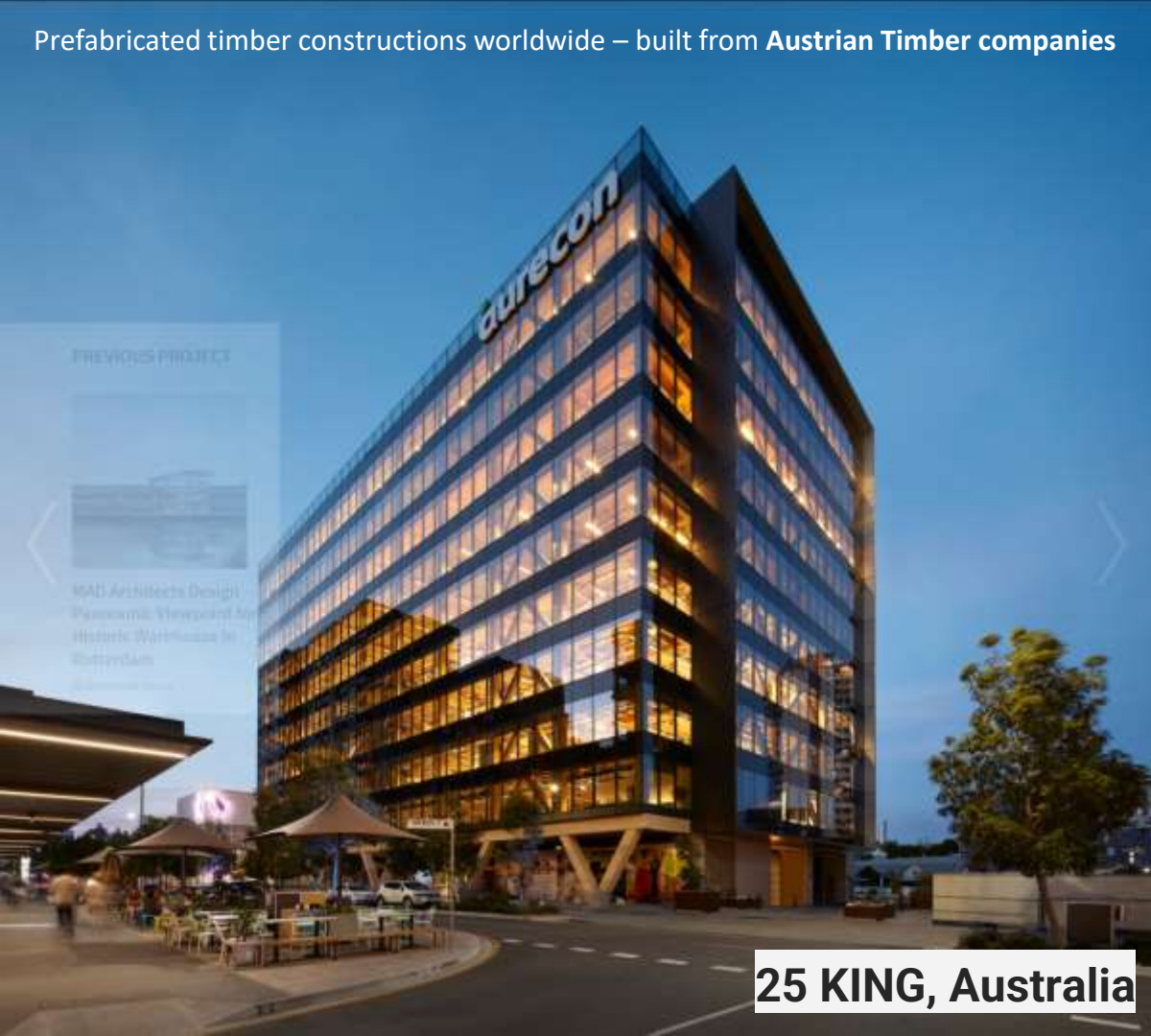
Prefabricated timber constructions worldwide – built from Austrian Timber companies

GAIA, Singapore, Toyo Ito



Prefabricated timber constructions worldwide – built from **Austrian Timber** companies

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25 KING, Australia



“

**The best way
to predict the future is,
by shaping it yourself.**

”