peikko®

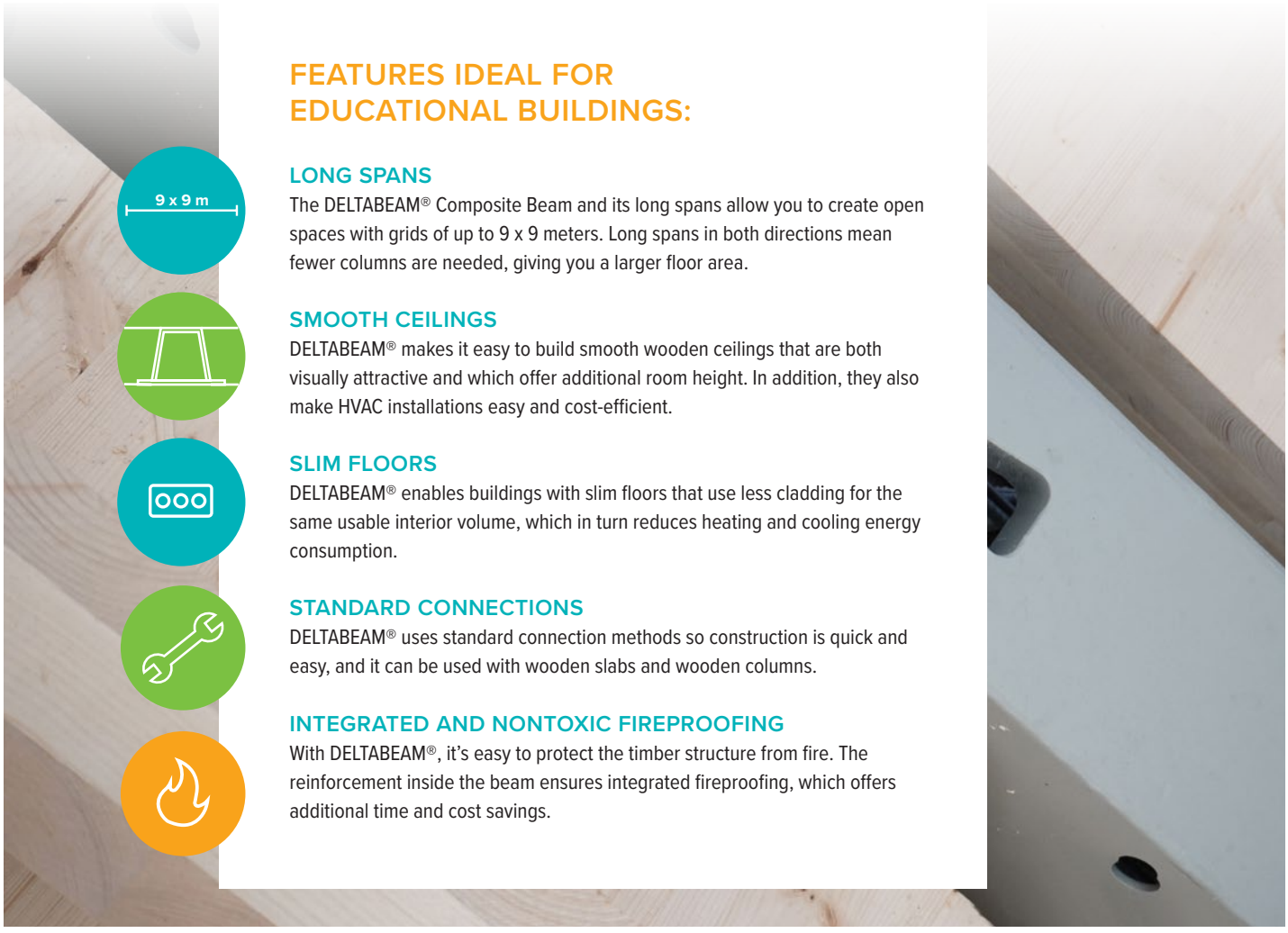
Create inspiring spaces for education and learning

PEIKKO SOLUTIONS FOR CONSTRUCTION OF TIMBER EDUCATIONAL BUILDINGS

DESIGN ATTRACTIVE OPEN SPACES THAT ARE FLEXIBLE AND FUNCTIONAL

Educational buildings need open spaces that are light and airy, and inspiring and flexible. They must be able to adapt to long-term needs and act as experiential learning environments. That's why building solutions which provide the maximum free space, as well as a welcoming indoor ambience, are ideal.

Peikko's DELTABEAM® Composite Beams with timber slabs are an excellent choice for the construction of educational buildings. DELTABEAM® gives architects the freedom to combine the attractive appearance of wood with the strength of steel and concrete in their designs, and it lets them use long spans and slim floors for the maximum usable interior volume.



FEATURES IDEAL FOR EDUCATIONAL BUILDINGS:

LONG SPANS

The DELTABEAM® Composite Beam and its long spans allow you to create open spaces with grids of up to 9 x 9 meters. Long spans in both directions mean fewer columns are needed, giving you a larger floor area.

SMOOTH CEILINGS

DELTABEAM® makes it easy to build smooth wooden ceilings that are both visually attractive and which offer additional room height. In addition, they also make HVAC installations easy and cost-efficient.

SLIM FLOORS

DELTABEAM® enables buildings with slim floors that use less cladding for the same usable interior volume, which in turn reduces heating and cooling energy consumption.

STANDARD CONNECTIONS

DELTABEAM® uses standard connection methods so construction is quick and easy, and it can be used with wooden slabs and wooden columns.

INTEGRATED AND NONTOXIC FIREPROOFING

With DELTABEAM®, it's easy to protect the timber structure from fire. The reinforcement inside the beam ensures integrated fireproofing, which offers additional time and cost savings.

WHAT CAN WE OFFER?

The freedom to combine wooden building structures with precast and cast-in-situ solutions.

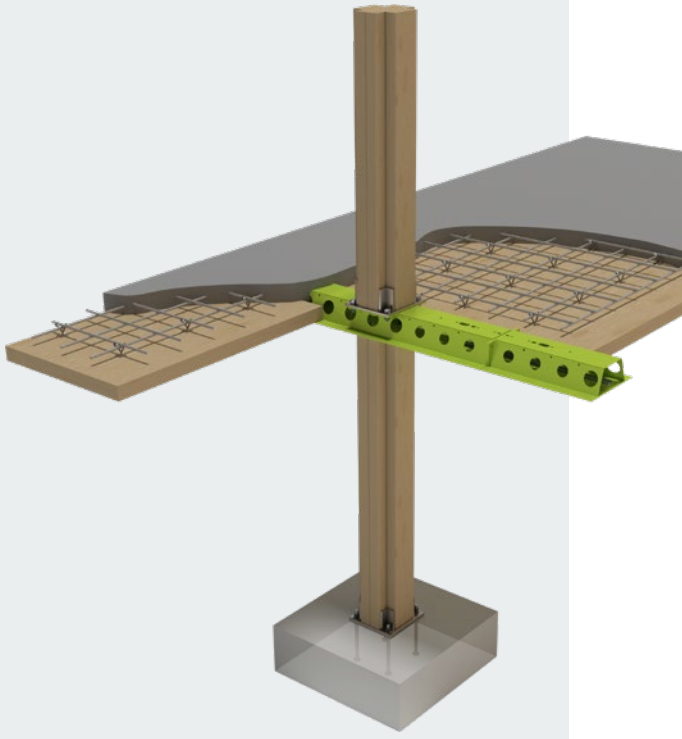
BENEFITS OF USING DELTABEAM® WITH WOODEN SLABS:

- Architectural freedom
- Standard connections
- Open spaces with minimum columns
- A flexible floor plan over the building life cycle
- Lower heating and cooling costs
- Lower CO_2 emissions

RECOMMENDED PEIKKO PRODUCTS FOR EDUCATIONAL BUILDING CONSTRUCTION

DELTABEAM® COMPOSITE BEAM

DELTABEAM® is compatible with timber, precast and cast-in-situ slabs as well as any type of columns, DELTABEAM® makes your construction process faster and more efficient. In addition, the beams are not visible because they are integrated into the slabs.



DELTABEAM® BENEFITS FOR EDUCATIONAL BUILDINGS

- A fast and safe erection process
- Enables open spaces even with architecturally demanding shapes
- Long spans
- Slim floors

LOWER YOUR BUILDING'S ENVIRONMENTAL FOOTPRINT

DELTABEAM® GREEN

The demand for environmentally friendly construction solutions is steadily increasing and Peikko developed DELTABEAM® Green to meet these needs. It is made from over 90% recycled material and manufactured using renewable energy, which cuts its CO_2 footprint by up to 50%. By combining DELTABEAM® Green with timber elements, you can reduce the environmental footprint of your buildings even further.

DELTABEAM® GREEN BENEFITS FOR EDUCATIONAL BUILDINGS

- → All standard DELTABEAM® benefits
- → Cuts CO_2 emissions by up to 50%
- → 90% recycled materials

BENEFITS OF WOODEN CONSTRUCTION ELEMENTS

Hybrid structures that incorporate timber slabs and columns together with concrete and steel are growing in popularity. Part of the reason for this is that wood is a renewable raw material with a low CO_2 emissions. In addition, wood brings a welcoming warmth to architectural design.

WOOD AS A CONSTRUCTION MATERIAL

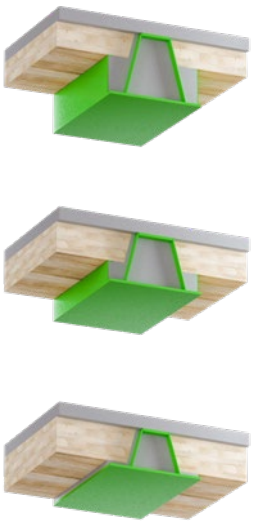
- → Warm appearance
- → Pleasant to touch
- → Good indoor air quality
- → A renewable material

DELTABEAM® HYBRID SLIM FLOOR STRUCTURE

Matrix for timber educational buildings

Concrete slab 100 mm
CLT slab 160-280 mm
DELTABEAM® thickness 320-500 mm

CLT (m)	CLT/DELTABEAM® thickness (mm)		
9			> 280/400 or 500
8		280/320	280/320 or 400
7	200/320	240/320	280/320
	7	8	9



DELTABEAM® span (m)

DELTABEAM® AND CONNECTION COMPONENTS

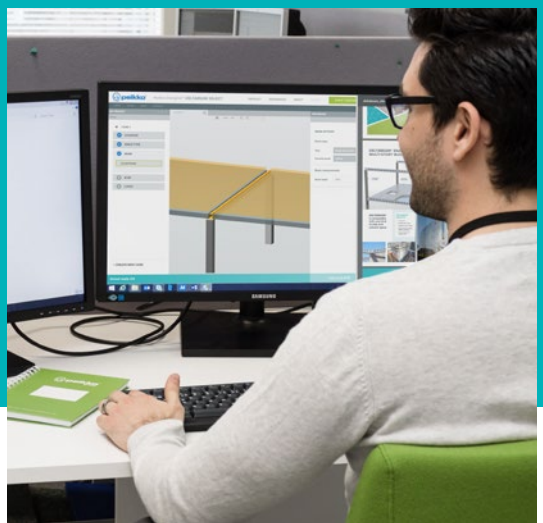
We provide comprehensive product details and technical specifications to help you select the optimal span lengths, connections and materials for the structure of your educational building. Take a look at the following table to see the kind of standard products we offer and get in touch to find out more about the best options for your projects.

PEIKKO DESIGN TOOLS

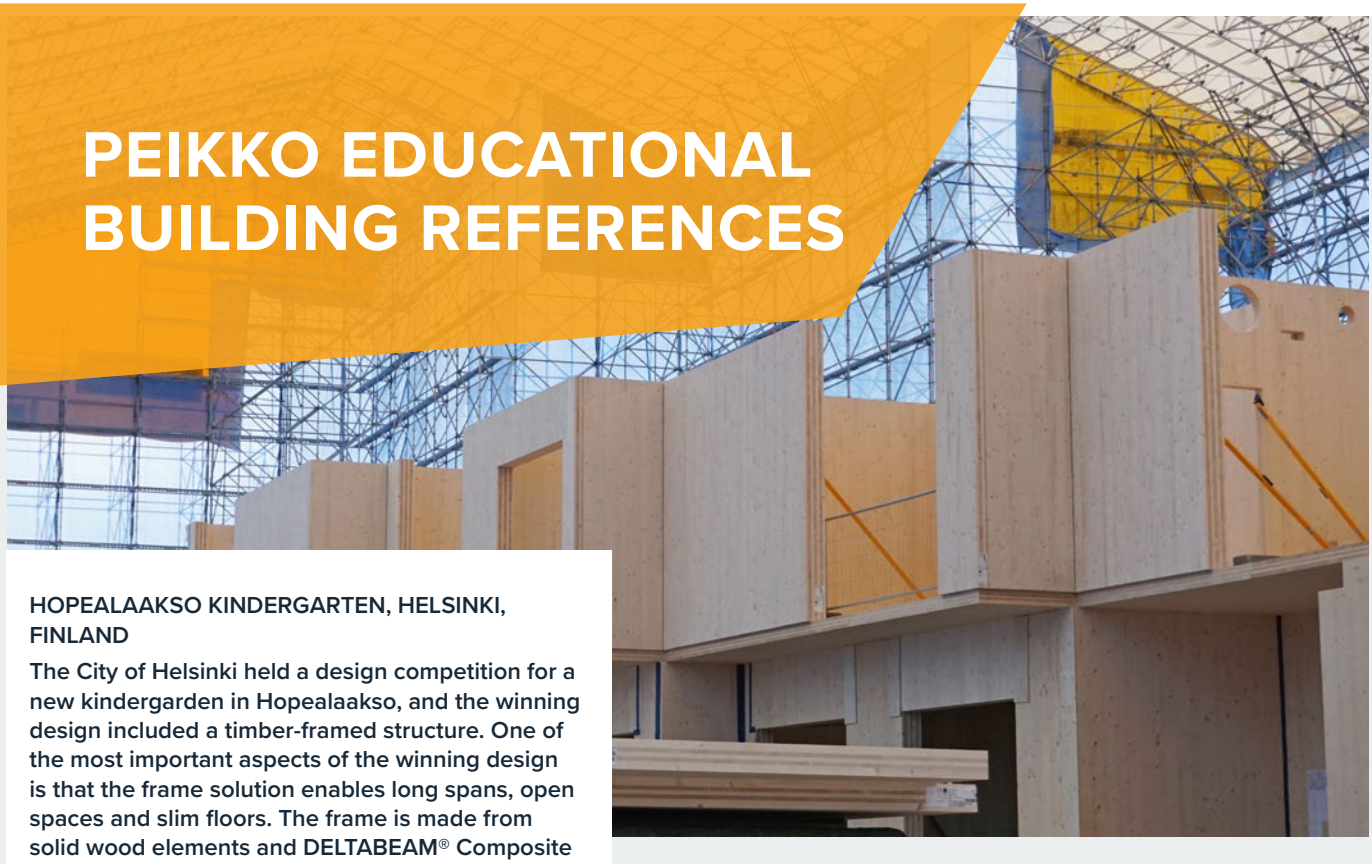
Our free and powerful software makes your work faster, easier and more reliable. Peikko design tools include design software, 3D components for modelling programs, installation instructions, technical manuals, and product approvals of Peikko's products. We also offer cloud based BIM with Tekla Model Sharing.

Peikko for Designers

See all our solutions in peikko.com/for-designers



PEIKKO EDUCATIONAL BUILDING REFERENCES



HOPEALAAKSO KINDERGARTEN, HELSINKI, FINLAND

The City of Helsinki held a design competition for a new kindergarden in Hopealaakso, and the winning design included a timber-framed structure. One of the most important aspects of the winning design is that the frame solution enables long spans, open spaces and slim floors. The frame is made from solid wood elements and DELTABEAM® Composite Beams. These were connected using standard connections, which made installation easy.

PROJECT FACTS

Project size: 2,150 m²

Architect: AFKS architect

Developer: City of Helsinki KYMP/RYA

Main contractor: Oy Rakennuspartio

Wood frame contractor: Puurakentajat Rakennus Oy

Completion year: 2021

COLLEGE, ST-PREX, SWITZERLAND

Peikko's DELTABEAM® Composite Beam was used together with wooden structures in the construction of a college in St-Prex, Switzerland. The wood-concrete-composite slab-solution was developed in collaboration with Peikko and ERNE Wood Construction, and it was the first project in Switzerland which combining wood, concrete and composite structures.

PROJECT FACTS

Project size: 4000 m²

Floors: 3

Structural Designer: ERNE Holzbau AG

Products: DELTABEAM® Composite Beam

Completion year: 2015

FRANKFURT WESTEND SCHOOL CAMPUS, FRANKFURT, GERMANY

Peikko designed the slab system for this timber-concrete composite structure. The building has 3 levels, approximately 122 m long and 30 m wide. Using DELTABEAM® Composite Beam enabled the building to have slim floors with very high load capacities and a low construction height. The Swiss company ERNE AG Holzbau produced the prefabricated wood-composite components and combined them with DELTABEAM® Composite Beams to form an efficient slim-floor structure.

PROJECT FACTS

Project size: 16,600 m²

Floors: 3

Developer: Stadtschulamt Frankfurt a.M.

Construction Company:
ERNE AG HOLZBAU & Grossmann

Structural Designer:
MWV Bauingenieure AG

Architect: gmp International GmbH

Completion year: 2019

EXPERT ADVICE LOCALLY AVAILABLE

Peikko offers expert advice during both design and construction phases, making building of education facilities as safe as possible.

www.peikko.com

A faster, safer, and more efficient way to design and build

Peikko supplies slim floor structures, wind energy applications and connection technology for precast and cast-in-situ construction. Peikko's innovative solutions make your construction process more efficient.