

Case Study

Trial Partner: CEPT University, Ahmedabad
Project: Centre of Excellence Workshop



**Canadian
Wood**

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India's first large-scale commercial demonstration of long-spanned 28 cubic meters of Douglas fir glued laminated beams.

Canadian Wood species

Inspiring architects and manufacturers in India to build with wood

Institution Profile

Located in Ahmedabad, India, CEPT University (the Centre for Environmental Planning and Technology) focuses on understanding designing, planning, constructing and managing human habitats. Through education, research and advisory activities, the University aims to “improve the impact of habitat professions in enriching the lives of people in Indian villages, towns and cities.”

One of the core values of CEPT is its capacity to embrace change. An example of this capacity to embrace change was the construction of a new on-campus Workshop which features never before-used engineered wood products from Canada. Spread across 13,000 sq. ft. the space houses workshops for students of architecture and design across seven disciplines.

Challenges

Indian builders have limited experience using wood construction technologies and engineered wood products. This posed a challenge as the arches and beams would need to be manufactured with precision as no modifications would be possible in India. This would also be the first installation of long-span glulam beams made with Canadian softwood in a commercial application in India, requiring skilled workers to use their ingenuity to use familiar equipment to handle and install unfamiliar materials.

Opportunity

As a centre of excellence in architecture, design and engineering, the University recognized an opportunity to create an inspirational space for students by introducing engineered wood products from Canada's sustainably managed forests, in the construction of a new teaching space - the Centre of Excellence Workshop.

Project architect, Gurdev Singh, considered all materials before deciding to incorporate wood as a key building material. Wood is an environmentally friendly building material and by using certified wood products from B.C., Canada, the University was able to demonstrate to faculty and students new construction possibilities using natural, durable, functional and sustainable materials.



Wood Use in Project

Glue-laminated timber or glulam is an engineered wood product comprised of layers of dimensional lumber bonded together with structural adhesives. A highly innovative construction material, the resulting product is versatile and can be manufactured into various shapes including arches to produce visually stunning, durable and environmentally friendly construction solutions. While the engineered wood products for this project were manufactured in Canada, the steel connections and bolts necessary for construction were fabricated in India and fitted on-site.

Each of the 33 arches used in the roof measure 11 metres in length with a cross-section measurement of 215mm x 305mm with identical radii and CNC-framed end profiles. The glulam beams used in the partitions measured 75mm x 500mm. All of the glulam components were constructed from Douglas fir, a species known for its distinctive natural attributes including strength, durability and beauty.

To ensure the engineered wood products met strict specifications, they were manufactured by Structurlam - a B.C., based leader in the manufacturing of glulam products—and were transported to the construction site in 40-foot containers.

While the arches are the structure's focal point, the Workshop also features extensive use of Douglas fir, western hemlock and yellow cedar in a range of structural and interior applications including beams, purlins, fascia, partitions, doors and doorframes, window frames, trims, wall framing, false ceilings and wall panelling.



Key Takeaways

The project will not only inspire the school's students who work and design with wood but will also be a model of sustainable architecture and environmental responsibility for the Indian design community. By introducing Canadian Wood species through special projects and course curriculum, the project will provide a long-term opportunity for collaboration between the University with B.C. and Canada.

The building also creates awareness among CEPT alumni, many of whom are among the elite architects of India and is expected to increase interest in using high-quality Canadian Wood products in structural applications in India.

Why Use Canadian Wood?

Sustainable, Green Building Material

British Columbia, Canada is a world leader in sustainable forest management. The rigor of B.C.'s forest management laws is demonstrated by third-party forest certifications (PEFC/FSC).

Long-Term Performance

Wood's versatility, character and individuality are unmatched. When it is properly maintained, wood can be reused, repurposed, and reapplied to other projects. Canadian wood species produce stable lumber with consistently straight grain. The wood is easy to work, finish and glue.

Easy to Manufacture

With low to moderate density values, species like western hemlock, Douglas-fir, yellow cedar, western red cedar and spruce-pine-fir (S-P-F) are all easy to face-laminate, edge-glue, and/or finger-joint.

Quality Assurance

Canadian wood species from B.C. are separated into a wide variety of grades and each grade is intended for a specific end use. Factory grades are intended for ripping or cross cutting to recover the wood's clear fibre; the clear grades help produce knot-free products in a length range of 8-20 feet. This variety of grades allows buyers to choose a quality that suits both their needs and their price considerations.

Multipurpose Applications

Because of their low tangential to radial shrinkage (T/R) ratio, softwoods typically have better stability than hardwoods. Softwoods are well suited to many applications across outdoor, interior and structural uses.



If you're interested in incorporating Canadian wood species into your product line, the 'Try Canadian Wood' initiative is an ideal way to use, experiment and understand wood's numerous advantages.

For free technical/procurement assistance write to FII India at info@canadianwood.in or call +91 2249221600.

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Canada 

Western hemlock | Douglas-fir | Yellow cedar | Western red cedar | Spruce-Pine-Fir (S-P-F)

FII India has made every attempt to ensure the accuracy and reliability of the information provided with input from each trial partner.

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