



CONVERSATION PLINTH

THE FIRST HARDWOOD CROSS LAMINATED TIMBER STRUCTURE IN THE UNITED STATES

Yugon Kim and Tomomi Itakura from Boston Based architectural design firm IKD has just completed the First Hardwood Cross Laminated Timber Structure in the United States named the Conversation Plinth. Unveiled at the Exhibit Columbus Exhibition in midwestern modern art and architecture mecca, Columbus, Indiana. The Conversation Plinth is a winning proposal for the Cleo Rogers Memorial Library plaza that pays homage to J Irwin Miller and aims to celebrate the community of Columbus and has been installed in the Summer of 2017 in the Main plaza of the city during the Exhibit Columbus exhibition. Its form takes cues from the conversation pit in the living room in the Miller House, as well as the plinths that elevate the important landmarks immediately surrounding the site—the library designed by I. M. Pei, the First Christian Church designed by Saarinen church, and the Large Arch by Henry Moore. Illuminated at night, the project acts a lantern re-invigorating the plaza. The installation offers a place for the community to gather and converse, and elevates people, both literally and metaphorically.

The installation is made of a hi-tech engineered timber product called CLT, or Cross Laminated Timber. Although softwood CLT already exists in the US, Hardwood CLT(HCLT) does not. The Conversation Plinth is constructed from the first ever commercial pressing of Hardwood CLT here in the US that was developed by IKD and team partners out of mix species, low value grade 3 common hardwoods. IKD was awarded a 2017 Wood Innovation grant by the United States Forest Service to develop this material innovation for the installation and for product certification that may lead to mass production. IKD was selected from 114 national applicants and is the only architectural design firm to have won a grant this year.

Using the Conversation Plinth as a demonstration project, IKD hopes the installation to be a catalyst for a new timber industry by upcycling low-value hardwood sawn logs that are extracted from regional forests in Indiana and the mid-west. Indiana's largest cash crop is hardwood, but over 55% of each log processed is of low value. The idea is that low-value hardwood, such as grade 3 common oak, maple, and ash, can be used to create high-value HCLT, which can then be used in commercial applications. HCLT offers numerous benefits over softwood, included superior mechanical properties, material volume savings, increased resistance to fire, and higher quality appearance in visible settings.

The proposal aims to jumpstart and accelerate the development and use of HCLT fabricated from parts of logs harvested from Indiana forests that can currently only be used to produce low value wood products. It seeks to demonstrate the viability and the benefits of a new, high value timber market in Indiana and the mid-west. This has the potential to initiate a cascade of effects: positive job growth in rural forestry and manufacturing, expanding and diversifying hardwood lumber markets, higher forest land value, and improved forest management practices to reduce wildfires and encourage biodiversity leading to an abatement of climate change.

The project leverages the full support of the National Hardwood Lumber Association (NHLA) and the Indiana Hardwood Lumbermen's Association (IHLA), and has secured partnerships with SMARTLAM, the first CLT manufacturer in the United States, timber structural engineering expert Chris Carbone from Bensonwood, and Clemson University's Wood Utilization + Design Institute. IKD has also partnered with the Indiana department of Nation Resources, the Hoosier National Forest office, and the Indiana Society of American Foresters.

For more information please contact ykim@i-k-design.com



PROJECT TEAM

PROJECT LEAD/DESIGNER

IKD

Project leads - Yugon Kim (Partner IKD)

Project team – Tomomi Itakura (Partner, IKD), Brendan

Casimir, Christian Borger, Kotayba Qadour, Xinyi Ma

www.i-k-design.com

CLT FABRICATION

SmartLam

Casey Malmquist, Robert Tudhope, Fabrication

www.smartlam.com

TIMBER ENGINEERING

Bensonwood

Chris Carbone, timber engineering consulting

www.bensonwood.com

STEEL ENGINEERING

Katahdin Engineering, LLC

Elizabeth Woolf, steel engineering consulting

www.katahdinengineering.com

PHASE 2 CONVERSATION PLINTH HARDWOOD MATERIAL SUPPLIER

Koetter Woodworking

www.koetterwoodworking.com

PHASE 1 HARDWOOD TESTING MATERIAL SUPPLIER

Pike Lumber

www.pikelumber.com

STEEL FABRICATOR

Noblitt Fabricating

www.noblittfab.com

GENERAL CONTRACTOR

Taylor Brothers Construction Co, inc.

www.tbcci.com

TRANSPORTATION

TPS Industrial Services

SOFTWOOD MATERIAL SUPPLIER AND FABRICATOR

Sauter Timber LLC

www.sautertimber.com

FASTENER SUPPLIER

MyTiCon Timber Connector inc.

www.my-ti-con.com

LIGHTING PARTNER

Green LED Lighting Solutions llc

www.ledneoflex.com

REGIONAL MESSAGING PARTNER

Indiana Hardwood Lumberman Association

www.ihla.org

NATIONAL MESSAGING PARTNER

National Hardwood Lumber Association

www.nhla.com

GRANT FUNDING

United State Forest Service Wood Innovation Grant

USDA Forest Service

www.fs.fed.us

ikd



IMG 1



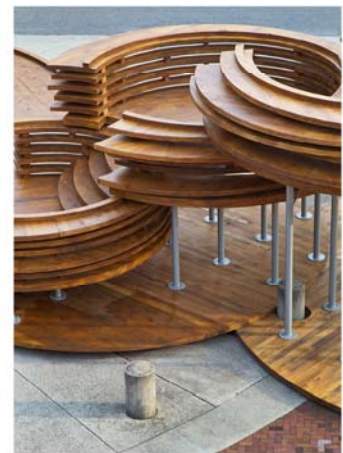
IMG 2



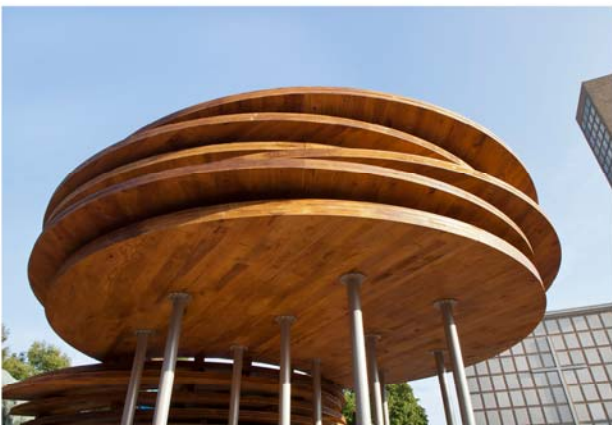
IMG 3



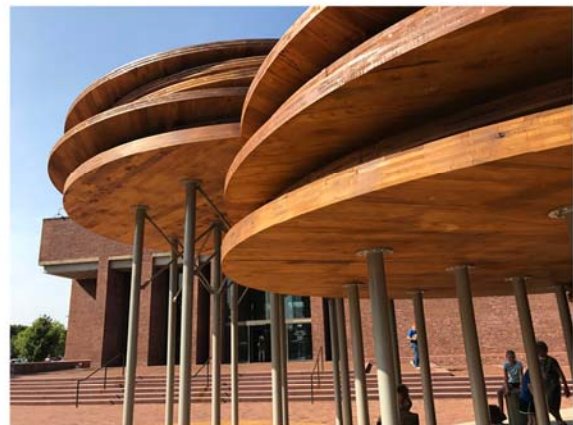
IMG 4



IMG 5



IMG 6



IMG 7



IMG 8



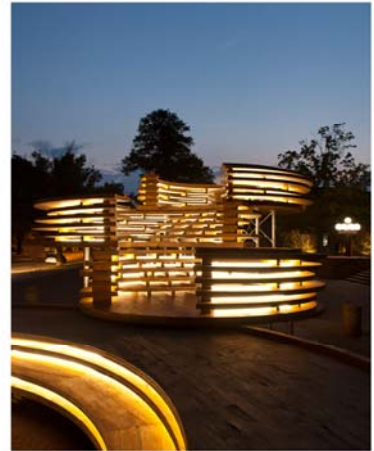
IMG 9



IMG 10



IMG 11



IMG 12



IMG 13



IMG 14

ikd



IMG 15



IMG 16



IMG 17



IMG 18



IMG 19



IMG 20

ikd



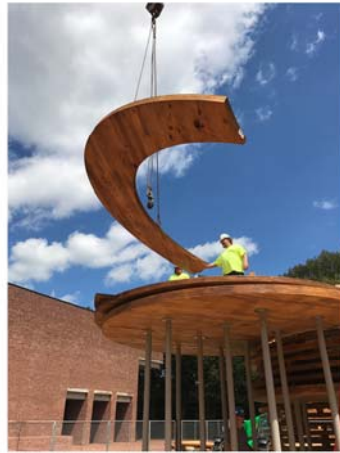
IMG 21



IMG 22



IMG 23



IMG 24



IMG 25



IMG 26



IMG 27



IMG 28

IMAGE LIST

IMG 01 – Description: Overview of the 1st Hardwood CLT structure in the US named the Conversation Plinth in the plaza starting at the base of the Henry Moore Large Arch with First Christian Church by Eliel Saarinen in the background, Credit: Courtesy of IKD, Image by Hadley Fruits.

IMG 02 - Description: Overview of the 1st Hardwood CLT structure in the US named the Conversation Plinth in the plaza starting at the base of the Henry Moore Large Arch with Cleo Rogers Memorial Library by IM Pei in the background, Credit: Courtesy of IKD, Image by Hadley Fruits.

IMG 03 - Description: Overview of the Conversation Plinth in the Library Plaza starting at the base of the Henry Moore Large Arch, Credit: Courtesy of IKD, Image by Hadley Fruits.

IMG 04 - Description: Overview of the Conversation Plinth in the Library Plaza starting at the base of the Henry Moore Large Arch with Cleo Rogers Memorial Library by IM Pei in the background, Credit: Courtesy of IKD, Image by Hadley Fruits.

IMG 05 - Description: Detail of overlapping tiers of the Conversation Plinth made up of shifted Hardwood CLT discs, Credit: Courtesy of IKD, Image by Hadley Fruits.

IMG 06 - Description: Upper tier of Conversation Plinth made up of shifted Hardwood CLT discs with First Christian Church by Eliel Saarinen in the background, Credit: Courtesy of IKD, Image by Hadley Fruits.

IMG 07 - Description: Detail of upper tiers of Conversation Plinth Hardwood CLT with Cleo Rogers Memorial Library by IM Pei in the background, Credit: Courtesy of IKD, Image by IKD.

IMG 08 - Description: Conversation Plinth in conversation with the Henry Moore Large Arch with Cleo Rogers Memorial Library by IM Pei in the background, restoring the original circulation to the site as IM Pei intend, Credit: Courtesy of IKD, Image by Hadley Fruits.

IMG 09 - Description: Visitors walking up the Conversation Plinth looking from above with the Henry Moore's Large Arch in the background, Credit: Courtesy of IKD, Image by Hadley Fruits.

IMG 10 - Description: Visitors walking up the Conversation plinth looking from below, Credit: Courtesy of IKD, Image by Hadley Fruits.

IMG 11 - Description: Detail of Hardwood CLT panels used as floor, stair and balustrade with Cleo Rogers Memorial Library by IM Pei in the background, Credit: Courtesy of IKD, Image by Hadley Fruits.

IMG 12 - Description: View from lowest plinth with visitors enjoying the installation and activating the plaza Credit: Courtesy of IKD, Image by Hadley Fruits.

IMG 13 - Description: Evening Conversations at the Conversation Plinth illuminating the entire plaza with First Christian Church by Eliel Saarinen in the background, , Credit: Courtesy of IKD, Image by Hadley Fruits.

IMG 14 - Description: Evening Conversations at the Conversation Plinth, Credit: Courtesy of IKD, Image by Hadley Fruits.

IMG 15 - Description: Evening Conversation at the Conversation Plinth, Credit: Courtesy of IKD, Image by Hadley Fruits.

IMG 16 - Description: View from highest Plinth with visitors enjoying the installation and activating the plaza , Image by Hadley Fruits.

IMG 17 - Description: Night image of the middle tiers of the Conservation Plinth illuminating the plaza, Credit: Courtesy of IKD, Image by Hadley Fruits.

IMG 18 - Description: Night image of the shifting upper tiers of the Hardwood CLT Conservation Plinth with Cleo Rogers Memorial Library by IM Pei in the background, Credit: Courtesy of IKD, Image by IKD.



IMG 19 - Description: Night image of the Conservation Plinth illuminating the plaza with First Christian Church by Eliel Saarinen in the background, Credit: Courtesy of IKD, Image by IKD.

IMG 20 - Description: Night image of the Conservation Plinth illuminating the plaza with Cleo Rogers Memorial Library by IM Pei in the background, Credit: Courtesy of IKD, Image by Hadley Fruits.

IMG 21 - Description: Construction image of Hardwood CLT lifted via Boom Crane on site with Cleo Rogers Memorial Library by IM Pei in the background, Credit: Courtesy of IKD, Image by IKD.

IMG 22 – Description: 30'x10' Hardwood CLT panel set in place amongst site bollards, Credit: Courtesy of IKD, Image by Hadley Fruits.

IMG 23 - Description: Construction image of Hardwood CLT lifted via Boom Crane on site , redit: Courtesy of IKD, Image by Hadley Fruits.

IMG 24 - Description: Construction images of Upper tier Hardwood CLT lifted via Boom Crane on site with Cleo Rogers Memorial Library by IM Pei in the background, Credit: Courtesy of IKD, Image by IKD.

IMG 25 – Description: Hardwood CLT installed on site with First Christian Church by Eliel Saarinen in the background, , Credit: Courtesy of IKD, Image by Hadley Fruits.

IMG 26 - Description: 40' long fingerjoint hardwood boards preparing to be loaded in CLT press, Credit: Courtesy of IKD, Image by IKD.

IMG 27 - Description: Detail of 7 Lam mix species Hardwood CLT, Credit: Courtesy of IKD, Image by SmartLam

IMG 28 - Description: 1st commercial pressing of Hardwood CLT in the United States at Smartlam's Facility in Montana. Credit: Courtesy of IKD, Image by IKD.

IMG 29 - Description: Conversation Plinth Concept diagram Credit: Courtesy of IKD, Diagram by IKD.

IMG 31 - Description: Model image of Conversation Plinth, Credit: Courtesy of IKD, Image by IKD.

IMG 32 - Description: Conversation Plinth exploded axon and project factoids, Credit: Courtesy of IKD, Diagram by IKD

IMG 33 - Description: Benefits of Hardwood CLT over conventual CLT diagram, Credit: Courtesy of IKD, Diagram by IKD.

IMG 34 - Description: Model image of Conversation Plinth, Credit: Courtesy of IKD, Image by IKD.

IMG 35 – Description: Process diagram of Hardwood CLT material development, Credit: Courtesy of IKD, Diagram by IKD.

TIMELAPSE – Description: 2 week construction process, Credit: Courtesy of IKD, Video by Curtis Hartwell.

High resolution images can be located at the following link.

<https://www.dropbox.com/sh/btqfti3113mri9m/AAAXxVTAN2xIb6Tto6fIYYva?dl=0>

For more requests for documentation, please email ykim@i-k-design.com