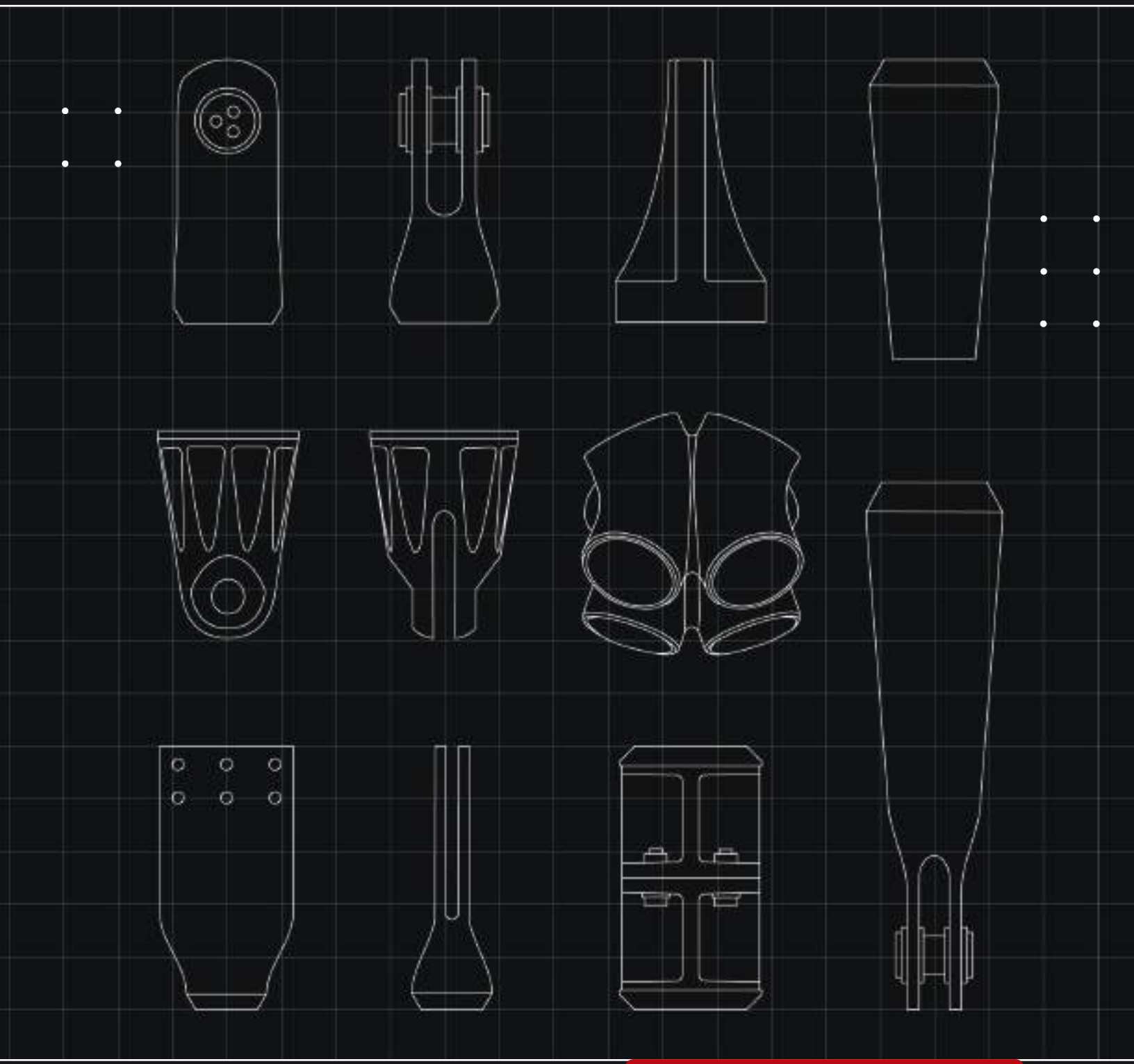
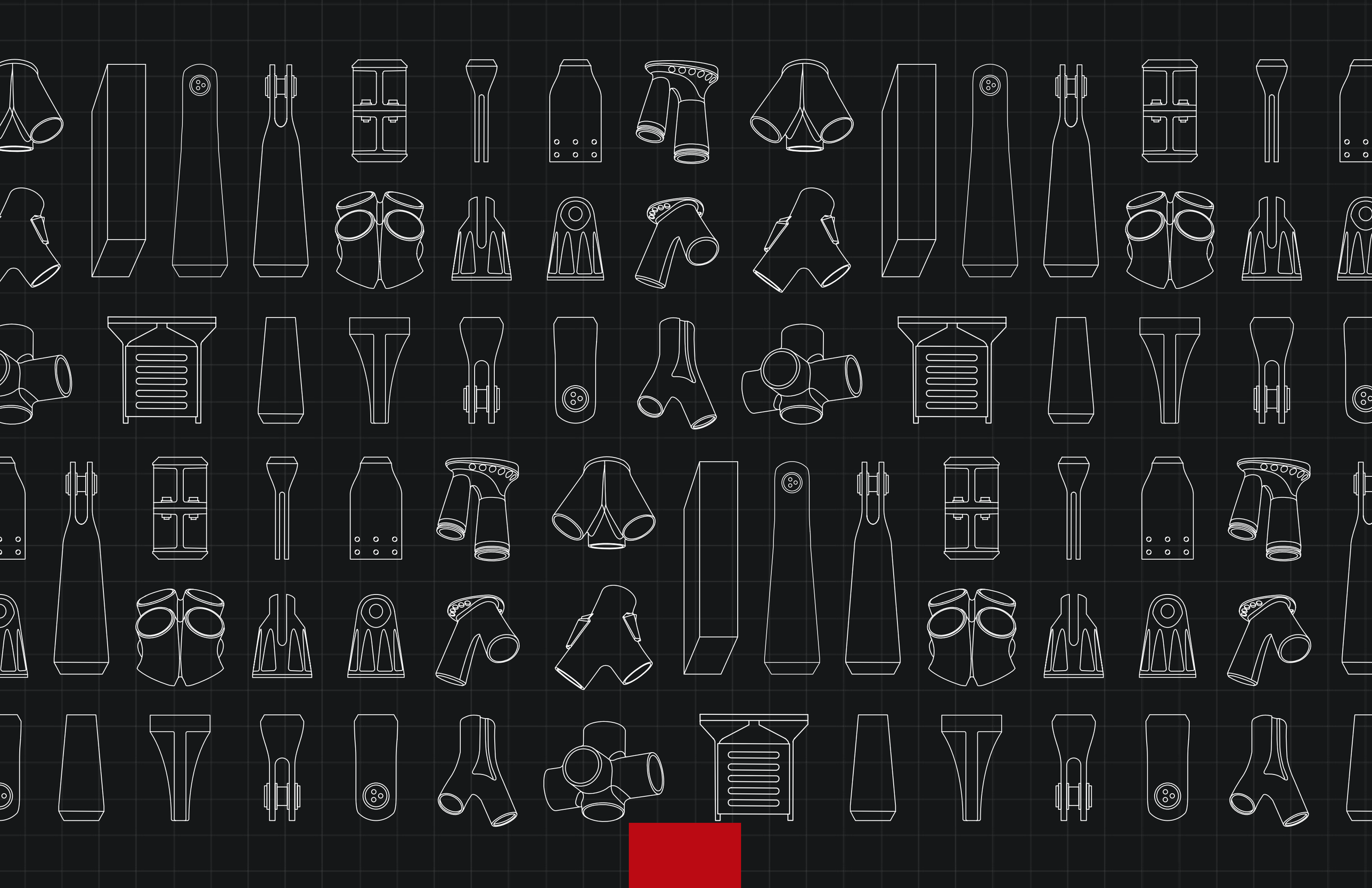
CASTCONNEX®

innovative components for inspired designs



PRODUCT CATALOG



CAST CONNEX® is the industry leader in the use of cast steel structural components in the design and construction of building and bridge structures.

Our products include pre-engineered connectors that simplify the design and enhance the performance of structures. We also offer design-build services for custom cast steel nodes and components.

We take pride in collaborating with architects and engineers in the creation of safer, innovative, and more beautiful built environments.

For more information visit
www.castconnex.com

UNIVERSAL PIN CONNECTOR.

CAST CONNEX Universal Pin Connectors (UPC) are standardized clevis-type fittings designed to connect to round hollow structural sections (HSS) or pipe elements for use in architecturally exposed structural steel (AESS) applications.

Their exterior shaping was developed to smoothly transition the geometry of the connection from the round cross section of the adjoining HSS/Pipe to the connector's forks, thereby minimizing the connector's profile from every viewpoint. Designed for AESS, Cast Connex Universal Pin Connectors are used in a broad range of applications, including: canopy hangers; compression struts that support roof overhangs or canopies; column or brace member end connections; and web member connections in roof trusses, pedestrian bridges and space frames.

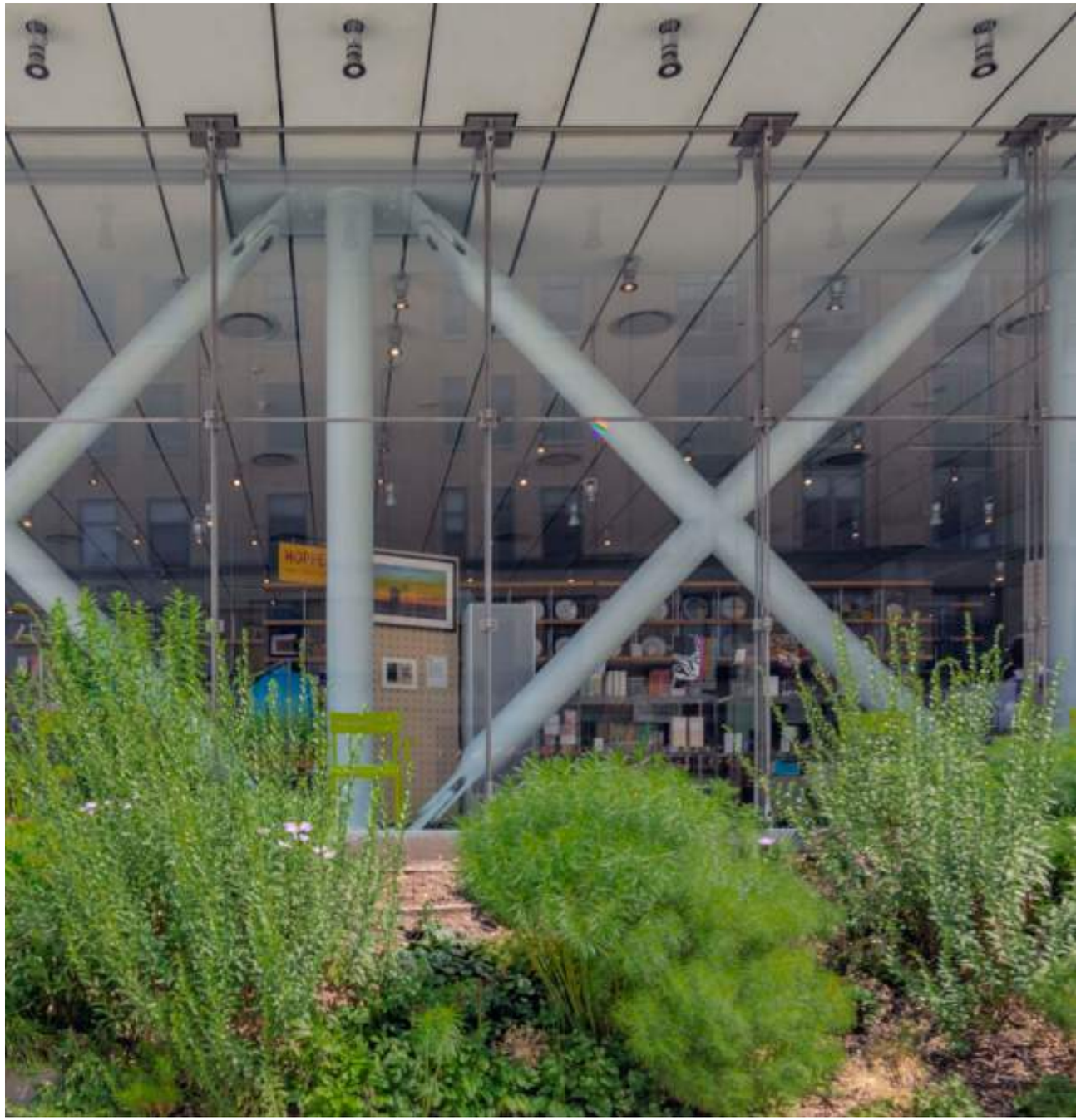
- ***Improves the consistency and simplifies the design, detailing and fabrication of pin-type AESS connections***
- ***More economical than conventionally fabricated pin-type AESS connections***
- ***Provides eye-catching connections for compression struts, column bases, truss web members, or anywhere a load bearing true-pin connection is desired***
- ***Offers an extensive application range including academic buildings, museums, hospitals, libraries, airports and entertainment venues***

Universal Pin Connectors are supplied with a hot dip galvanized steel pin and electropolished stainless steel washers, cap plates and cap screws.

FEATURED PROJECT (Left Page):
Whitney Museum of American Art. New York, NY

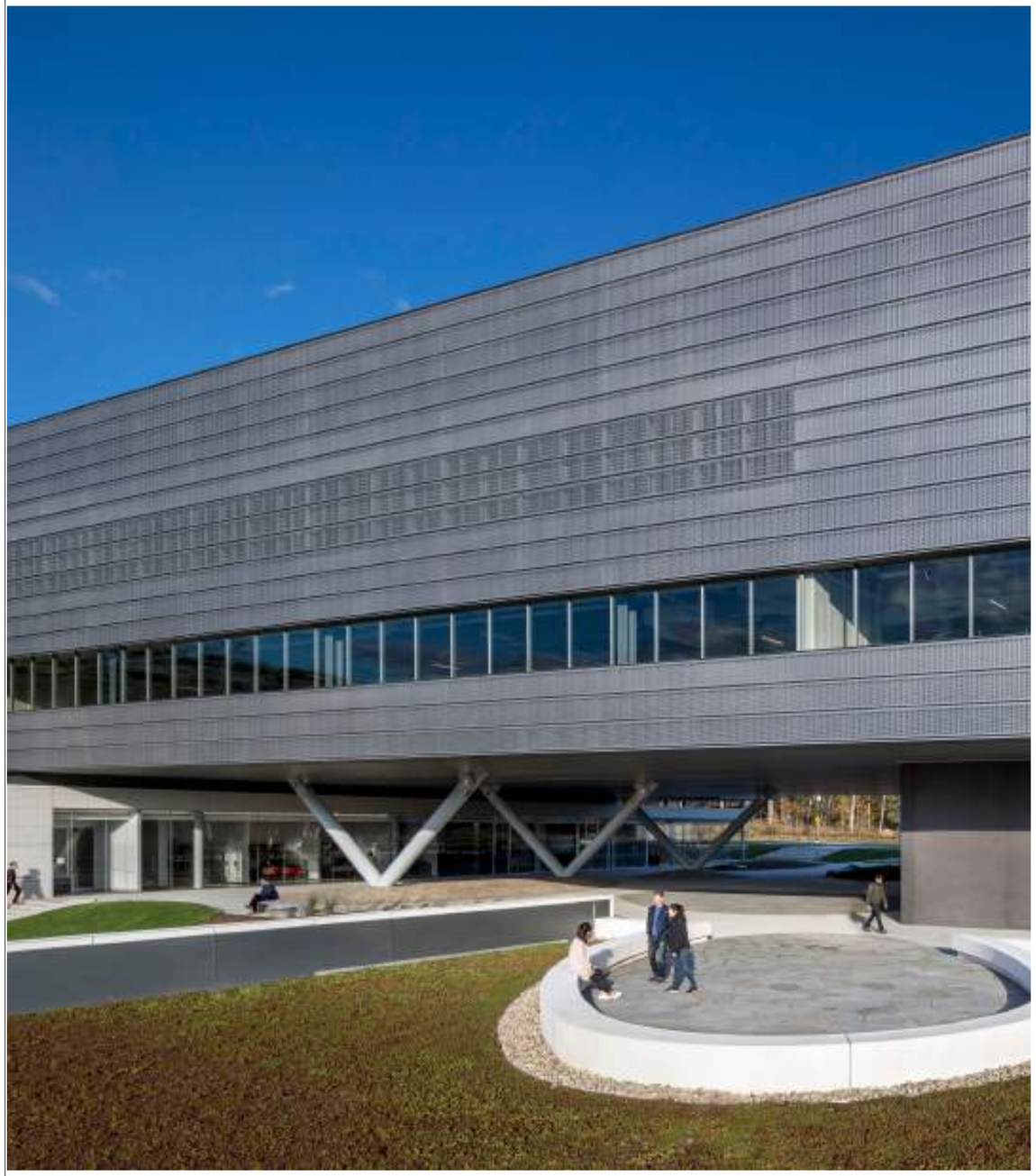
Whitney Museum of American Art
New York, NY

Universal Pin Connectors are available in a wide range of sizes; pictured to the right are the UPC-4.000L (left) and the UPC-24.00 (right).

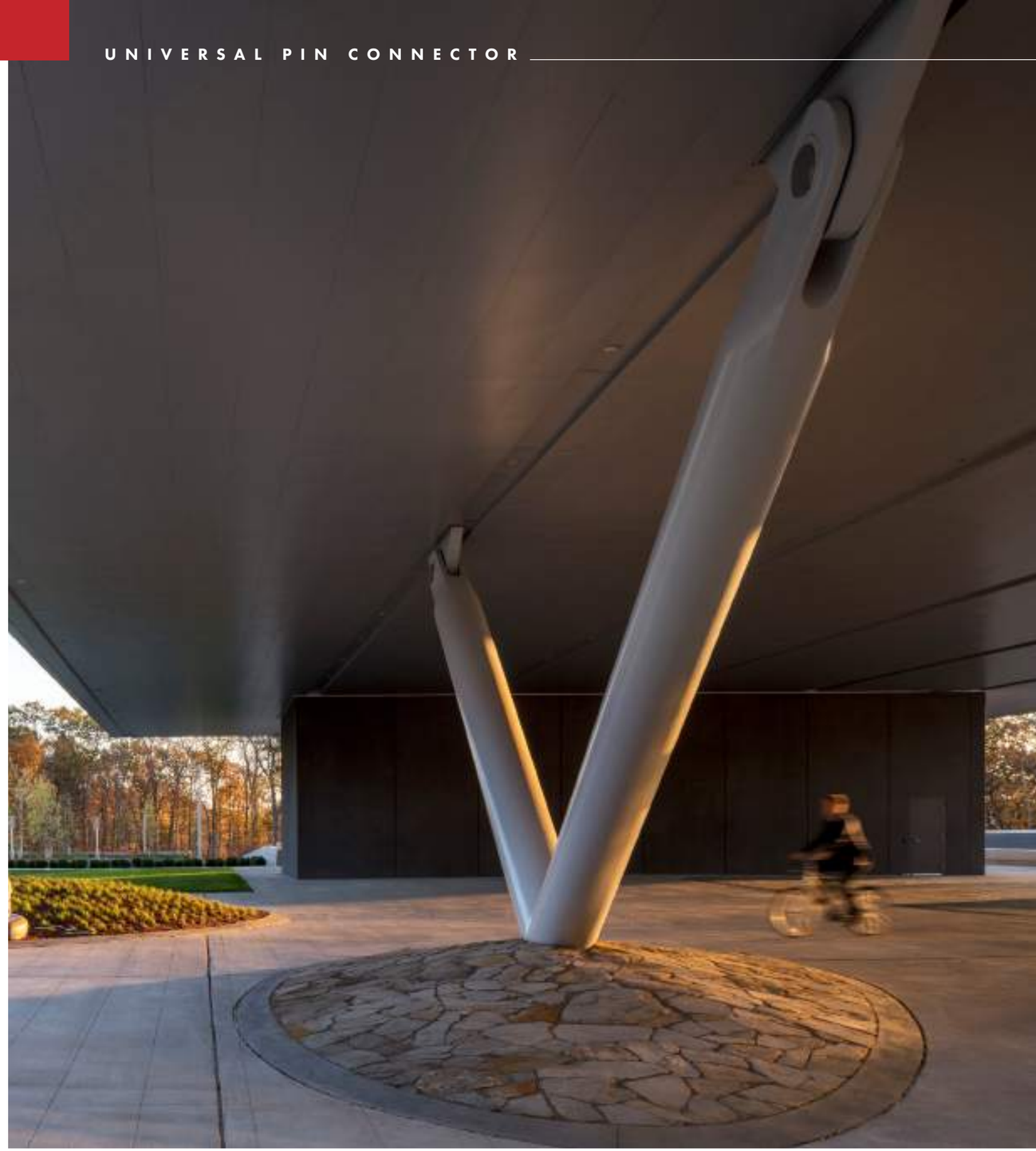


University of Lethbridge
Lethbridge, AB

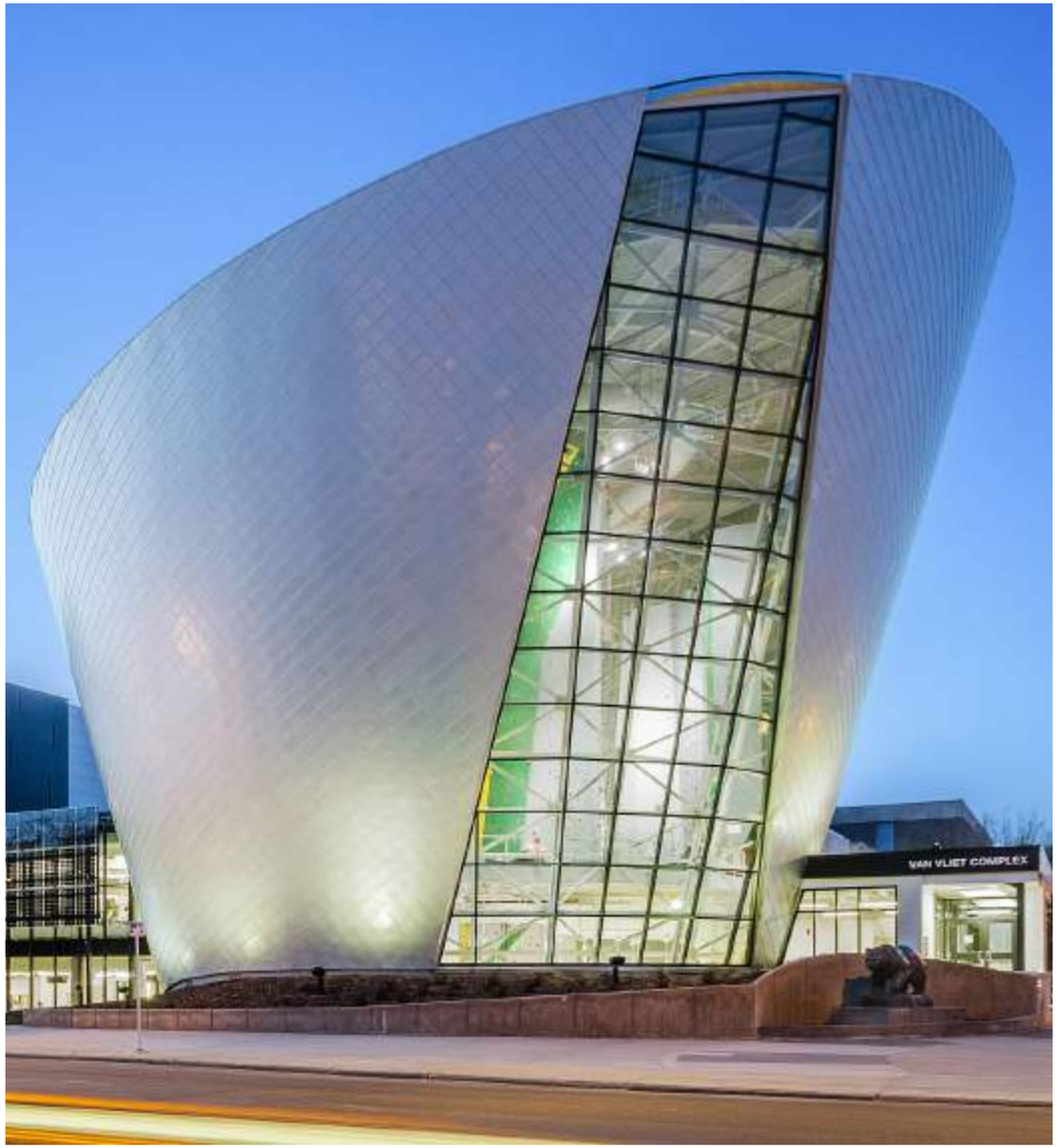
Emory University
Hospital Pedestrian Bridge
Atlanta, GA



University of Connecticut
Innovation Partnership Building
Storrs, CT



Nearly 1,000 CAST CONNEX Universal Pin Connectors were used in the space frame of the ***Physical Activity & Wellness Centre at The University of Alberta.***



Physical Activity and Wellness Centre, University of Alberta
Edmonton, AB

ARCHITECTURAL TAPER.

CAST CONNEX Architectural Tapers (ART) are standardized conical and hollowed, cast steel components that are tapered in shape. They are designed to connect to the end of round hollow structural section (HSS) or Pipe members, for use in architecturally exposed structural steel (AESS) applications.

- ***Lends a clean, tapered profile with substantial load bearing capacity***
- ***Often used at the ends of exposed steel columns***
- ***Cost effective and consistent in appearance and quality***

Architectural tapers are also an ideal companion product for CAST CONNEX Universal Pin Connectors.

FEATURED PROJECT (Left Page):
Cincinnati Ballet: Margaret & Michael Valentine Center for Dance. Cincinnati, OH

CAST CONNEX Architectural Taper used at the base of a round HSS column

University of Arizona Biomedical Sciences Partnership Building
Phoenix, AZ

**This project also features CAST CONNEX UPC's.*

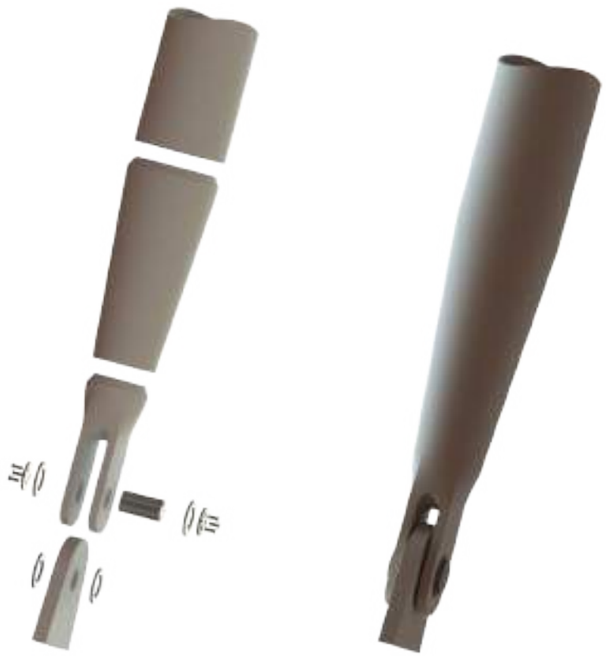
McDonald's Chicago Flagship Restaurant
Chicago, IL

ARCHITECTURAL TAPER + UNIVERSAL PIN CONNECTOR.

CAST CONNEX Architectural Tapers and CAST CONNEX Universal Pin Connectors (ART + UPC) can be combined to realize an aesthetic where the overall member appears more streamlined. Loads permitting, CAST CONNEX Architectural Tapers can be used as reducers to accommodate the use of smaller CAST CONNEX Universal Pin Connectors at the ends of axially loaded architecturally exposed structural steel (AESS) members.

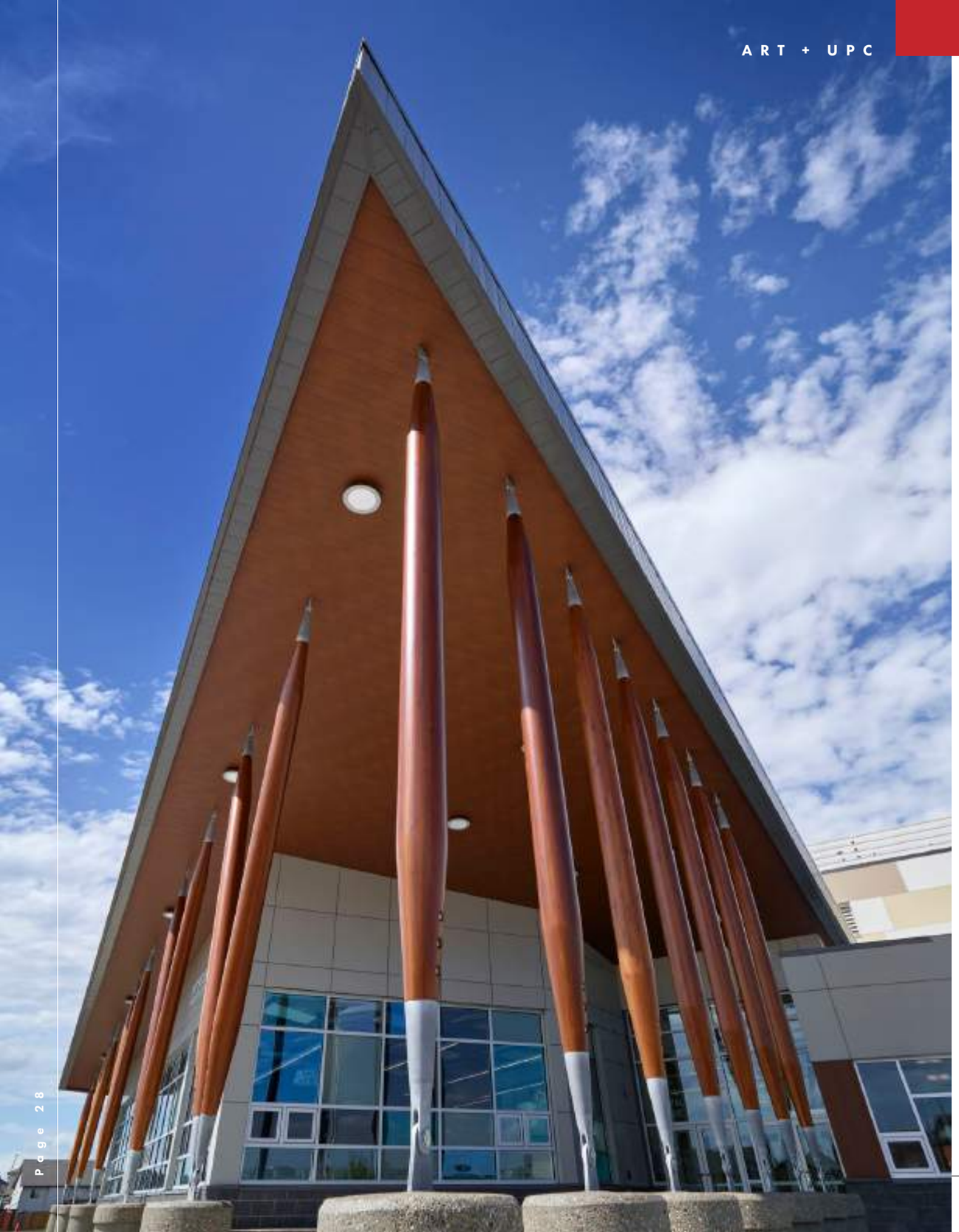
- ***Slender-appearing structural elements with smooth, curving transitions from every viewpoint***
- ***Provides eye-catching end connections for compression struts, column bases, truss web members or anywhere a load bearing true-pin connection is desired***
- ***Dramatically simplified fabrication and a fraction of the grinding that typically accompanies AESS***
- ***Consistent and reliable architectural appearance***

FEATURED PROJECT (Left Page):
University of Arizona Biosciences Partnership Building. Phoenix, AZ



CAST CONNEX Architectural Taper and Universal Pin Connector used together in a single connection assembly

Clark University Alumni and Student Engagement Center
Worcester, MA



Roy Bickell K-8 Public School
Grande Prairie, AB

Sandy Springs Performing Arts Center
Sandy Springs, GA

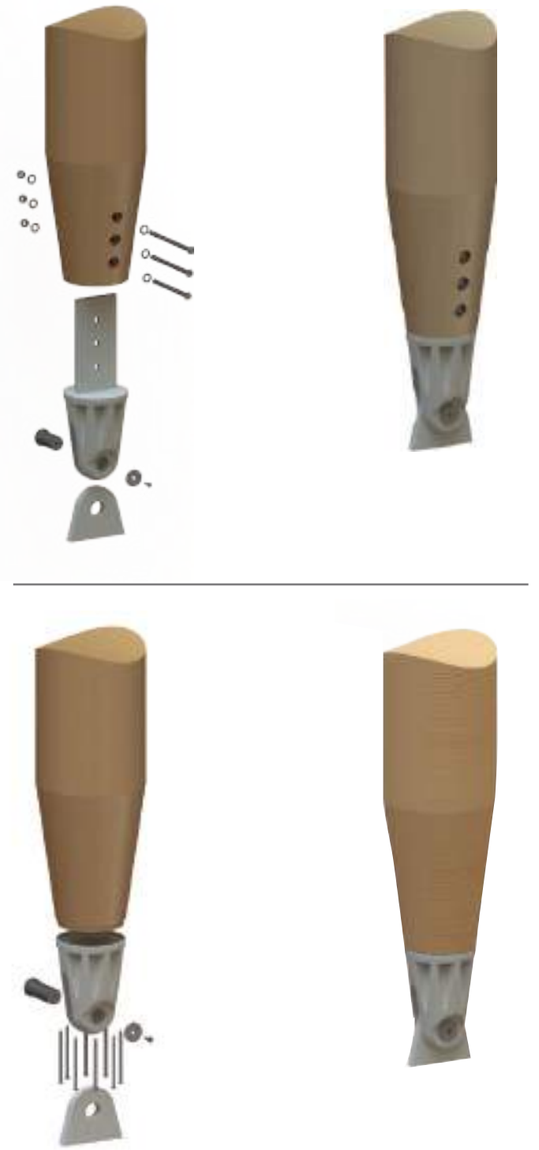
TIMBER END CONNECTOR.

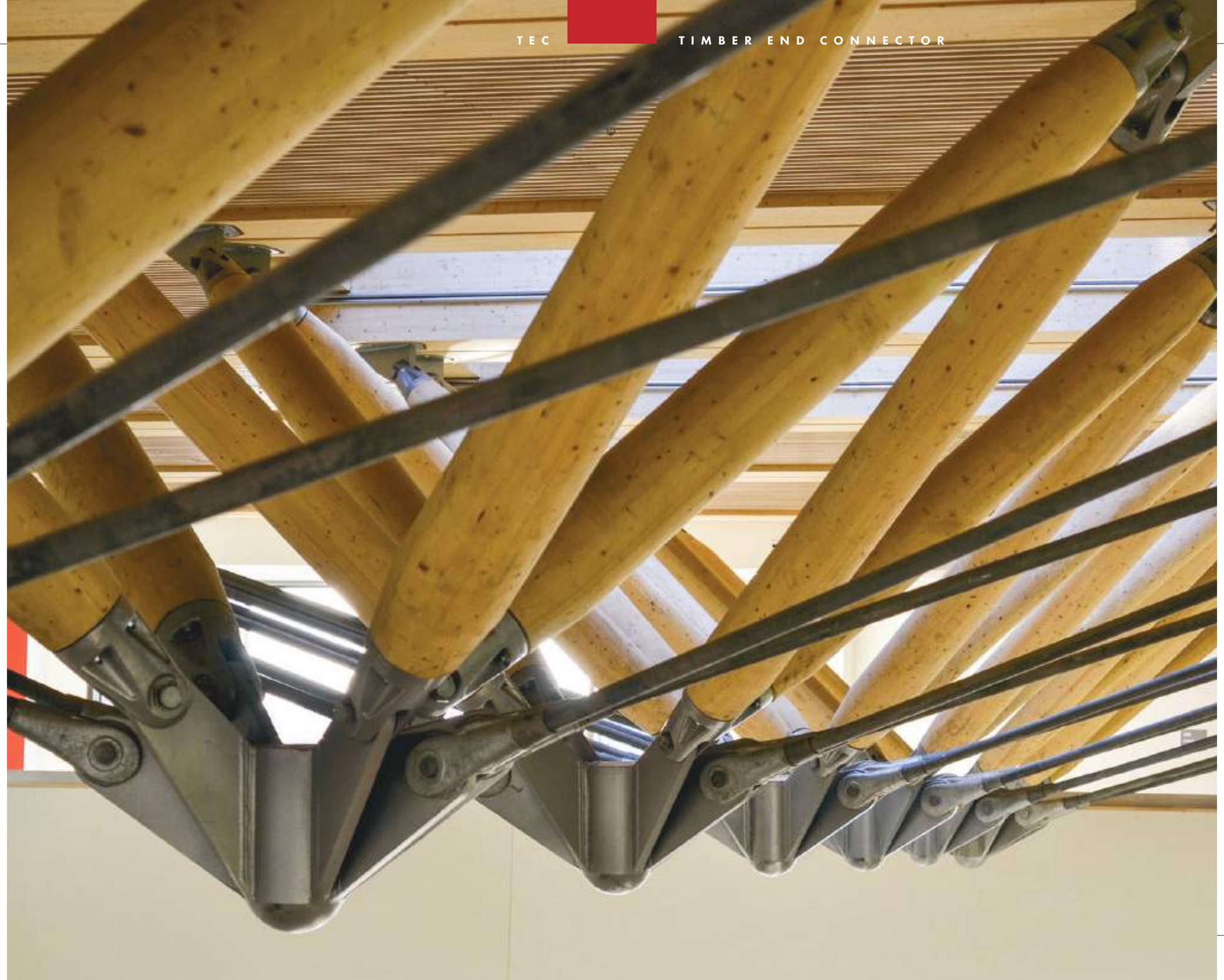
CAST CONNEX Timber End Connectors (TEC) are clevis-type fittings designed to connect to the ends of heavy timber or glue-laminated structural elements, loaded in predominately tension or compression for use in architecturally exposed applications.

FEATURED PROJECT (Left Page):
Vancouver International Airport (YVR). Richmond, BC

University of Massachusetts
John W. Olver Design Building
Amherst, MA

CAST CONNEX Timber End Connectors can be fastened to the ends of the connecting timber element via knife plate with lag bolts for members loaded in tension and compression (above) or via hanger bolts or glued-in rods for members loaded in compression only (below).





CUSTOM CASTING.

CAST CONNEX provides design-build services for custom cast steel components. We leverage steel casting manufacturing to offer our clients unparalleled opportunities for optimization and beauty in structural form.

We work with you to design custom cast steel components that provide the desired aesthetic and structural performance, carry loads safely, efficiently integrate with your structural steel framing, and are castable and economical.

Consider custom castings for:

- ***Architecturally exposed connections; particularly for connecting HSS elements or to mate between various materials (i.e. steel to timber)***
- ***Complex connections subjected to arduous loading or where increased stiffness is required***
- ***Fatigue critical connections***
- ***Advanced components providing specific performance or function (i.e. rockers, couplers, dissipaters, etc.)***

Our services include industrial design and 3-dimensional modeling, finite element stress analysis, steel connection design, casting detailing, steel casting manufacturing, destructive structural testing of full-scale cast steel components and structural assemblages, performance-based casting and non-destructive examination specification writing.

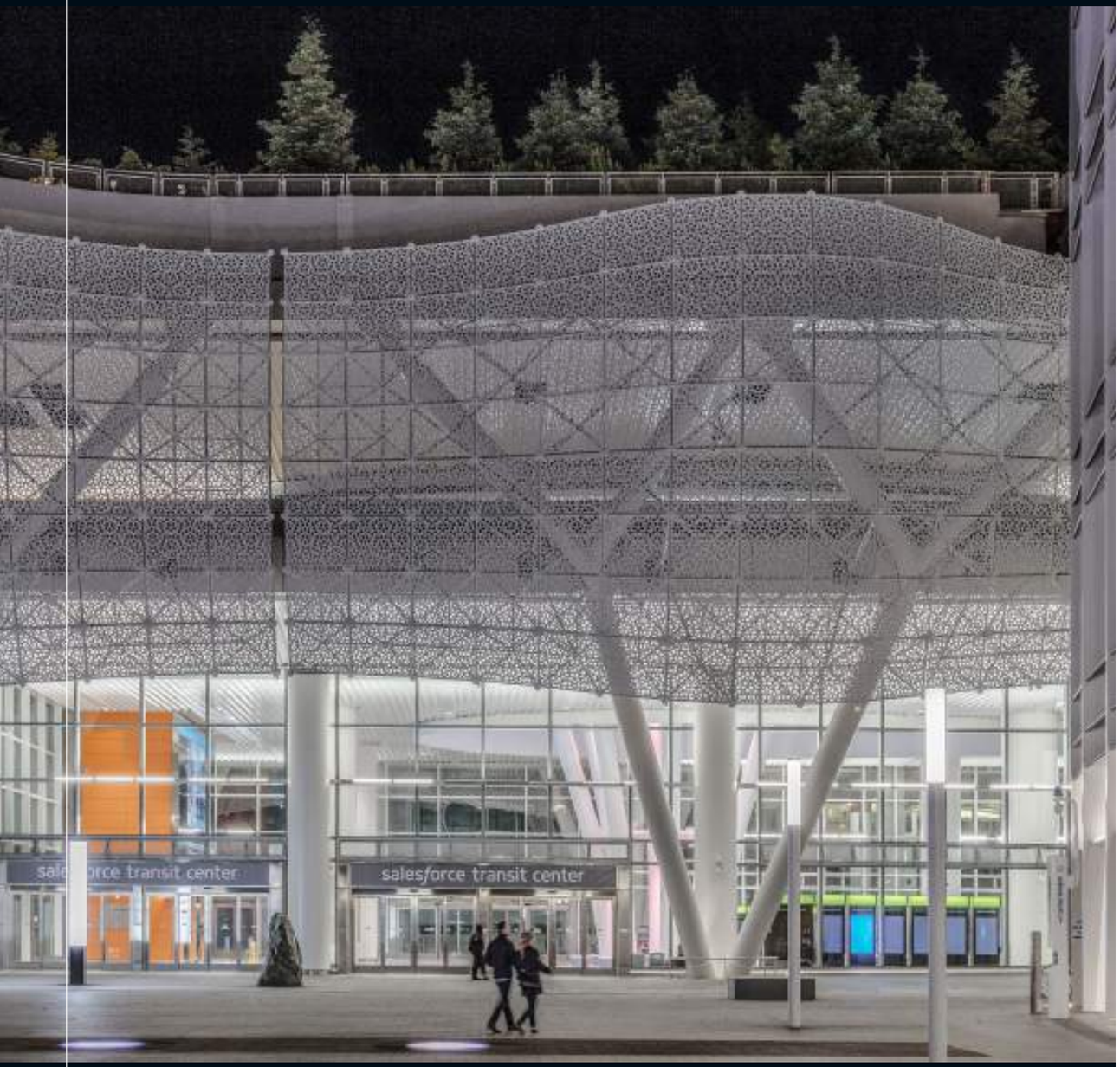
Queen Richmond Centre West
Toronto, ON

A 17.5-ton cast steel node is used at the center point of the 70-foot tall AESS frame that supports the 11-story ***Queen Richmond Centre West*** *above two heritage buildings in Toronto.*

Custom cast steel node designed for an expansion at
Charlotte Douglas International Airport

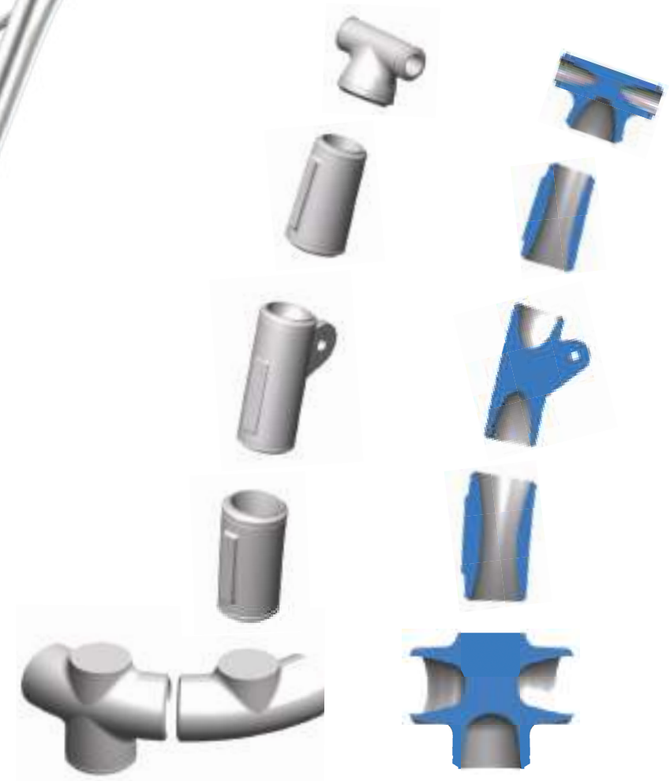
San Ysidro Land Port of Entry
San Diego, CA

CUSTOM CASTING



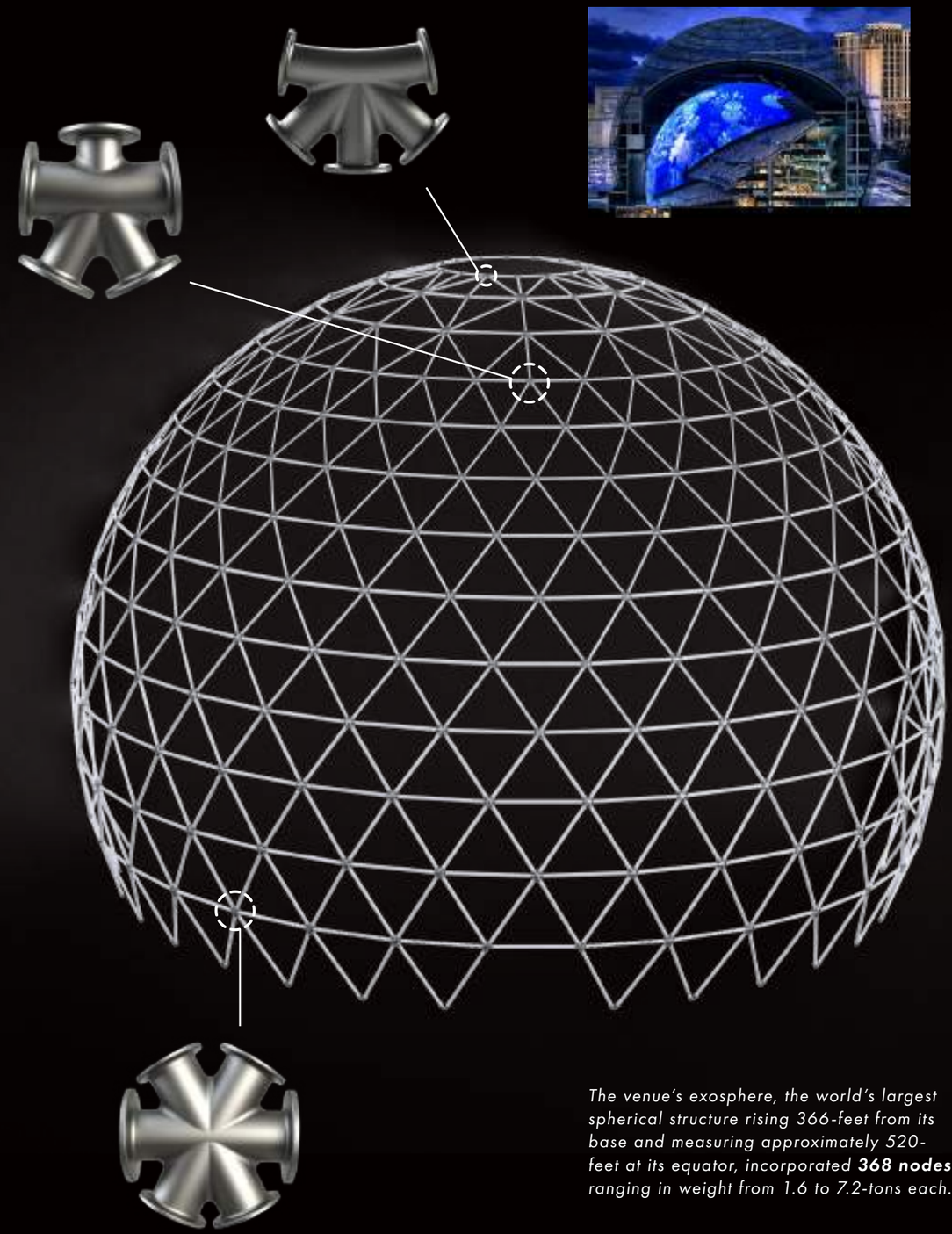
Salesforce Transit Center
San Francisco, CA

The SalesForce Transit Center's 150-foot tall "Light Column", an architecturally exposed structural steel oculus feature of the new transit terminal, includes 56 cast nodes having 26 unique geometries.



CAST CONNEX provided a variety of cast steel nodes and connectors for use in the construction of the MSG Sphere at the Venetian in Las Vegas.

CUSTOM CASTING



The venue's exosphere, the world's largest spherical structure rising 366-feet from its base and measuring approximately 520-feet at its equator, incorporated ***368 nodes*** *ranging in weight from 1.6 to 7.2-tons each.*

MSG Sphere
Las Vegas, NV

The Leaf at Canada's Diversity Gardens
Winnipeg, MB

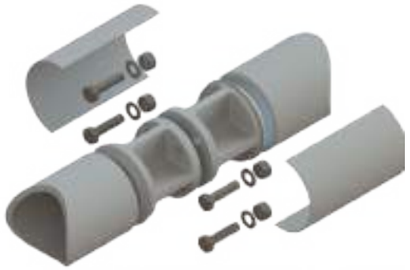
DIABLO BOLTED SPLICE.

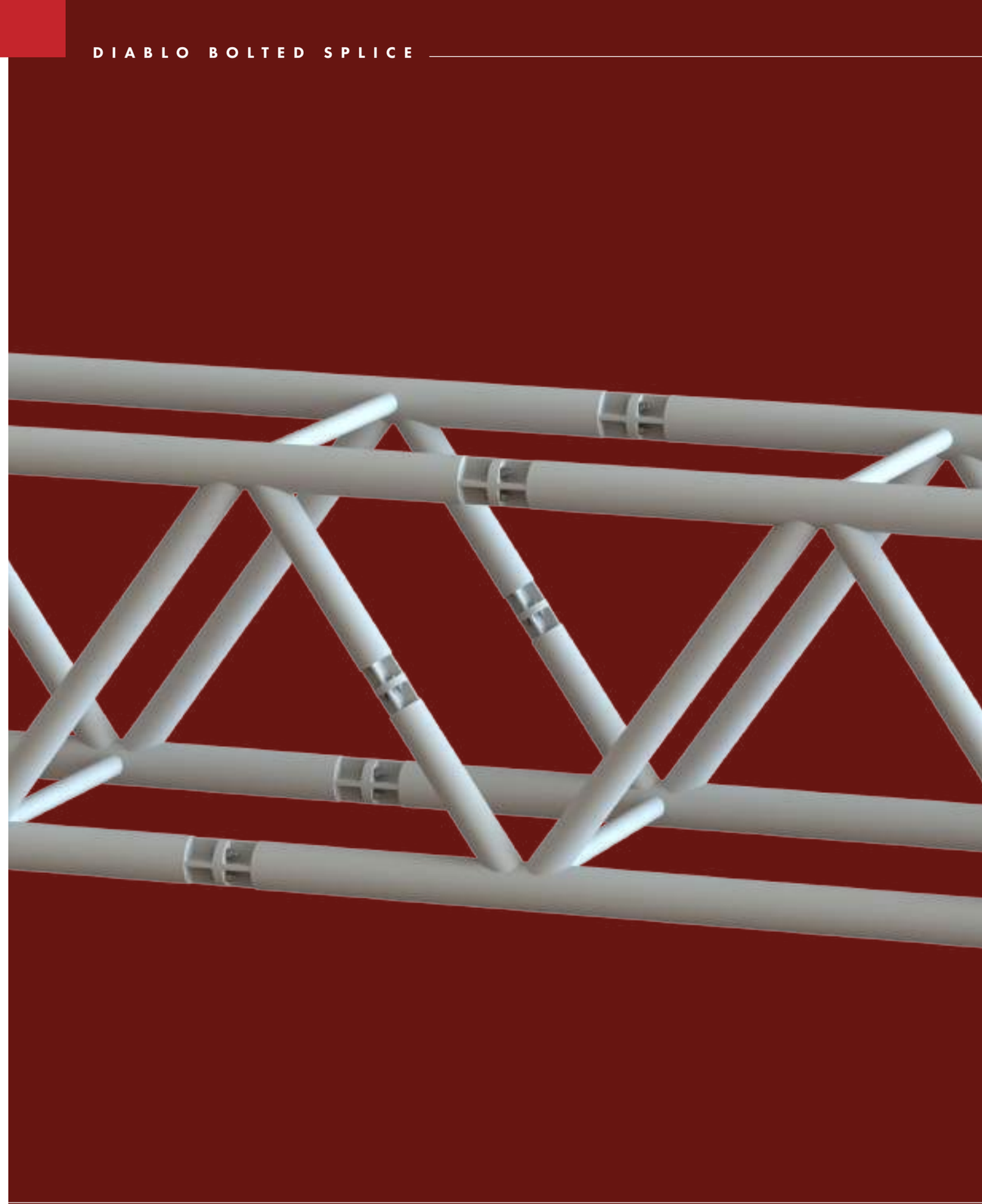
CAST CONNEX Diablo Bolted Splices (DBS) are cast steel fittings that enable unobtrusive field bolted splices between round hollow structural section (HSS) or Pipe members. The fittings are designed such that the bolted connection is inboard of the outer diameter of the connected elements and are thus ideal for use at HSS member splices in architecturally exposed structural steel (AESS).

- ***Can be sheathed in thin-gauge plate to completely conceal the splice or left uncovered for a sleek, technical aesthetic***
- ***Eliminates the need for the use of field welding to produce seamless HSS splices in AESS***
- ***Useful in tensile fabric structures where low-profile concealed splices support an appearance of lightness in the structural form***

FEATURED PROJECT (Left Page):
Harbourfront Centre Concert Stage. Toronto, ON

CAST CONNEX Diablo Bolted Splices eliminate the need for field welding in producing seamless HSS/Pipe member splices in AESS.





HIGH STRENGTH CONNECTOR.

CAST CONNEX High Strength Connectors (HSC) simplify and improve the performance of connections to round hollow structural section (HSS) or Pipe brace members for use in earthquake-resistant construction. High Strength Connectors are designed to be stronger than the steel member to which they're connected. As such, they can accommodate special structural performance in earthquake-resistant, post-disaster, or mission-critical construction.

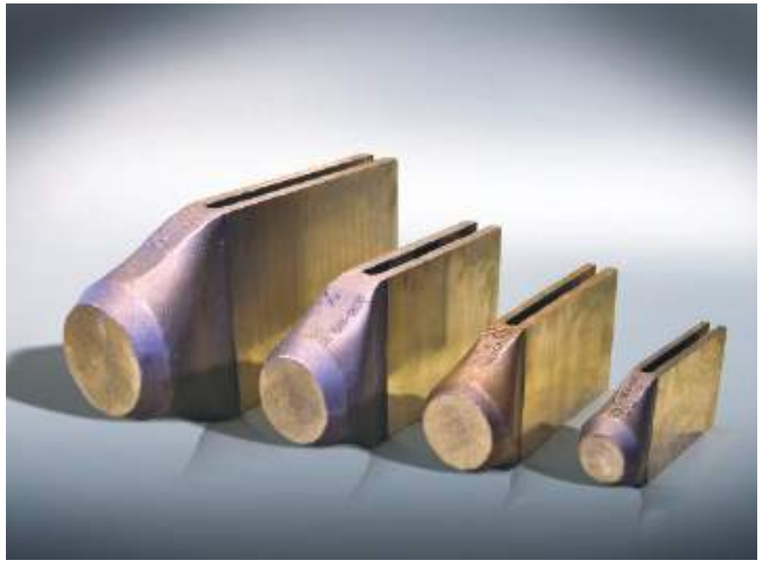
- ***Offers significant cost savings over conventionally fabricated connections capable of meeting similar structural performance requirements***
- ***Eliminates the need for field welding and the unsightly reinforcement of HSS brace connections***
- ***When exposed, the compact bolted connection is consistent with a high-tech aesthetic***

FEATURED PROJECT (Left Page):
Centre des loisirs de Saint-Lambert. Saint-Lambert, QC

Winery Fermentation Frames
Livingston, CA

Typical brace connection detail with CAST CONNEX High Strength Connector

High Strength Connectors are available in a wide range of sizes; pictured above are the HSC-8.625, HSC-6.625, HSC-5.563, and HSC-4.000.



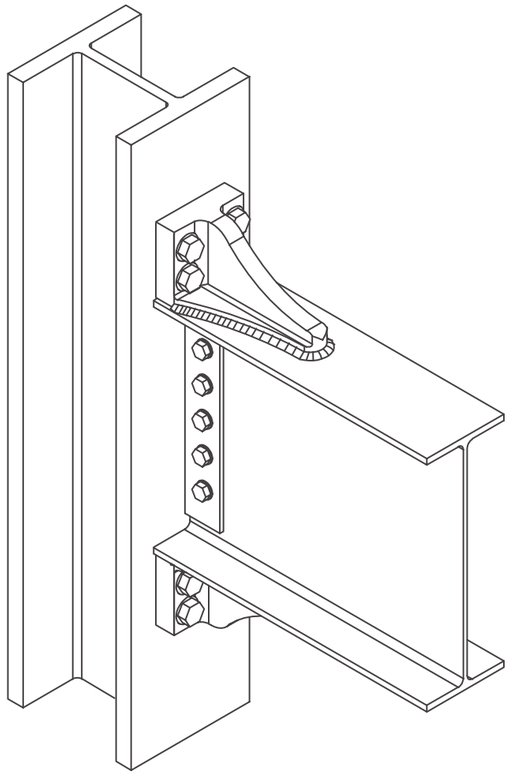
Berkeley Art Museum and Pacific Film Archive
Berkeley, CA

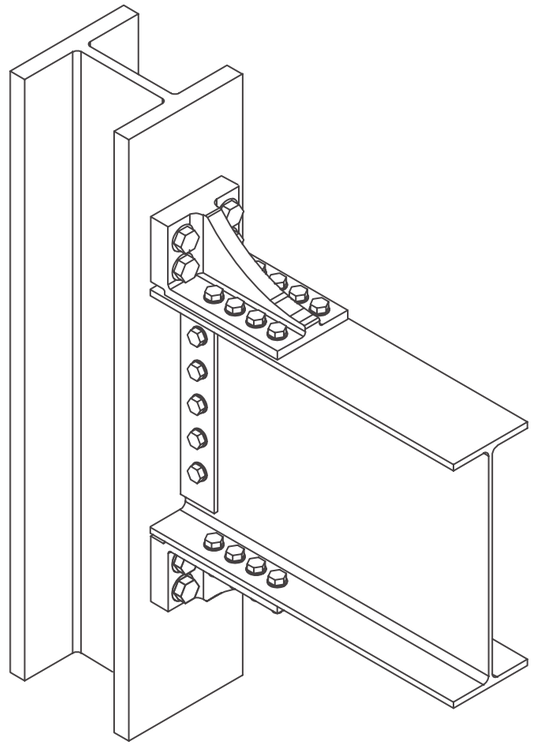
The Pavillion
San Jose, CA

CAST BOLTED BRACKET.

CAST CONNEX Cast Bolted Brackets (CBB) are a prequalified connection for Special and Intermediate Steel Moment Frames per AISC 358 and can be used in the retrofit of seismically deficient steel moment framed buildings or in new construction. The CBB moment connection is designed to eliminate field welding and when used in new construction, to facilitate rapid erection.

- ***Lowest cost special steel moment frame connection available on the market***
- ***Available in two types: those accommodating bolted connection to the beam flange (B-series) and those accommodating welded connection to the beam flange (W-series)***
- ***No field welding required. Both types are designed to enable field bolting of the beam to the column***
- ***Well-suited to retrofit (B-series), as they offer a weld-free option for addressing seismically deficient steel moment frames***





CAST CONNEX Cast Bolted Brackets - W Series.

CAST CONNEX Cast Bolted Brackets - B Series.

SCORPION YIELDING CONNECTOR.

CAST CONNEX Scorpion Yielding Connectors (SYC) are modular, replaceable, standardized hysteretic fuses that provide enhanced ductility and improved performance in the retrofit of seismically deficient structures, or for use in the seismic force resisting system of new structures.

Each Scorpion Yielding Connector consists of specially designed cast steel and fabricated elements which connect to and transmit forces between conjoined elements.

- ***Able to remain elastic during ordinary building service loading and provides energy dissipation during a sizable earthquake through cyclic inelastic flexural deformation of the SYC's cast steel yielding fingers***

- ***Exhibits a full, symmetric hysteresis characterized by an increase in stiffness at brace elongations greater than the design level***

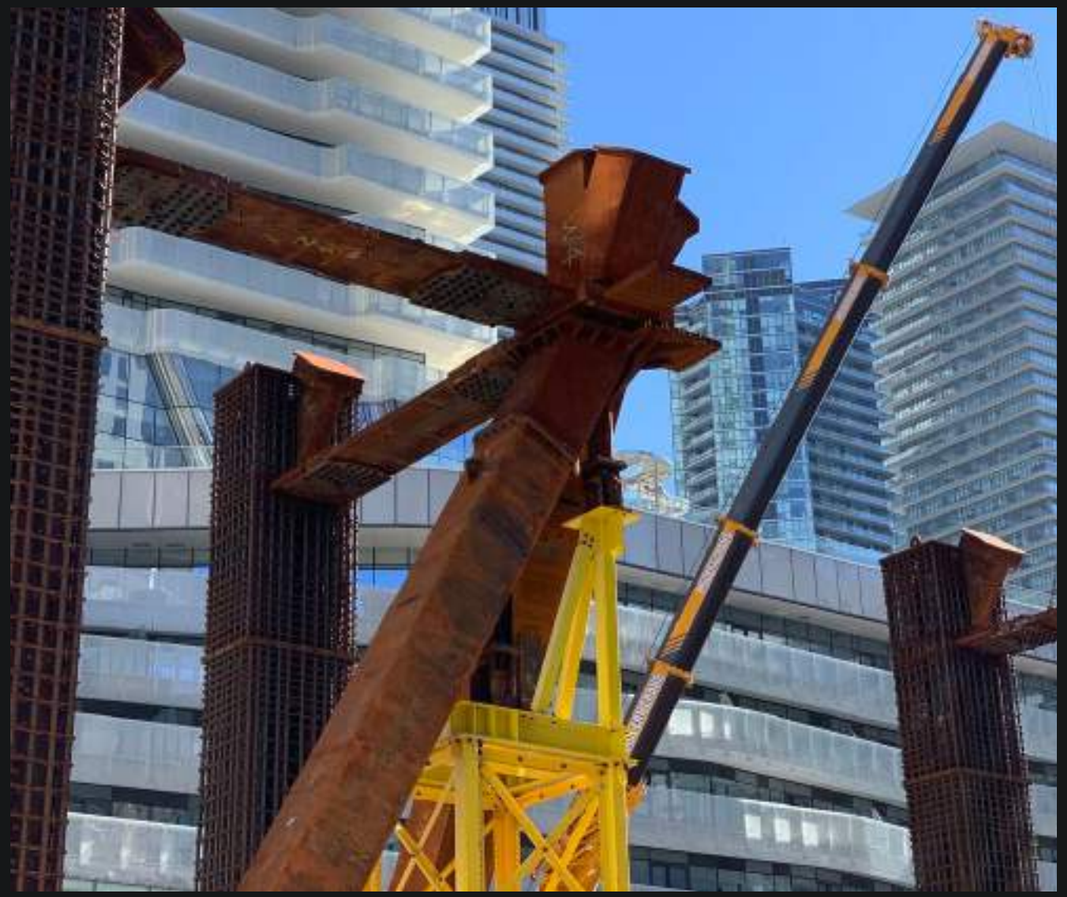
- ***The device's stiffening at extreme deformations mitigates P-Delta effects and decreases the likelihood of "soft story" response***

FEATURED PROJECT (Left Page):
Audain Art Museum. Whistler, BC

SYC's dissipate seismic energy through the flexural yielding of specially designed triangular-shaped yielding fingers.

Centre Educatif Saint-Aubin – Seismic Retrofit
Baie-Saint-Paul, QC

Audain Art Museum
Whistler, BC



HIGH INTEGRITY BLOCK.

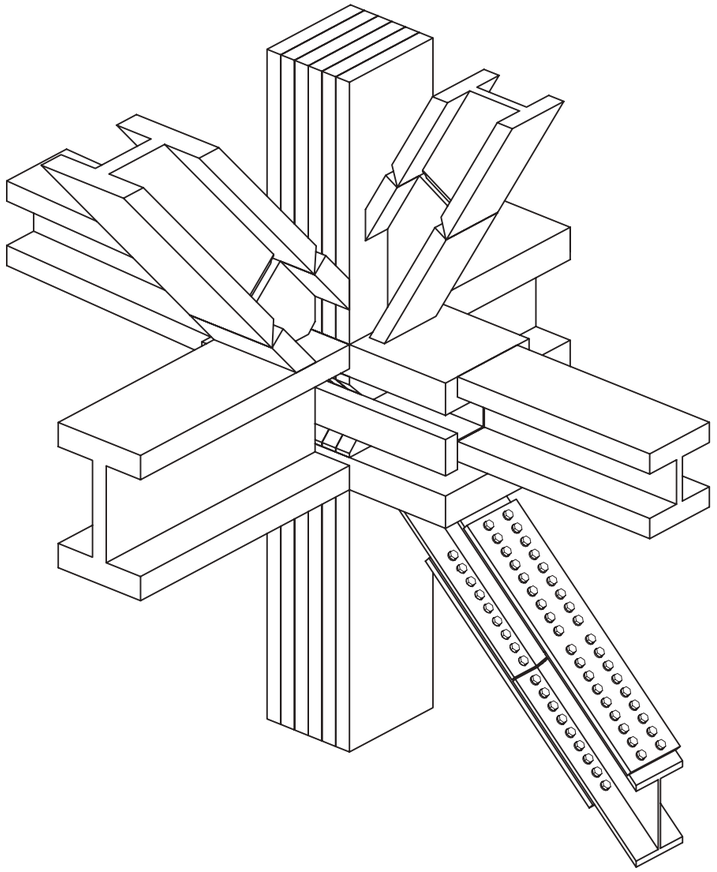
CAST CONNEX High Integrity Blocks are specially engineered and manufactured solid steel elements which simplify the design and fabrication of – and provide unparalleled strength, quality and reliability in – heavily loaded structural connections and elements. As a result of intensive research and development paired with careful manufacturing control, CAST CONNEX is able to deliver ultra-thick, weldable structural steel sections which exhibit elevated strength and fracture resistance in all three directions of loading and through the full cross section of the steel block.

- ***Insusceptible to lamellar tearing, making High Integrity Blocks ideal for use within the center of multi-axis loaded structural connections where tearing of hot rolled plate may compromise quality and strength***

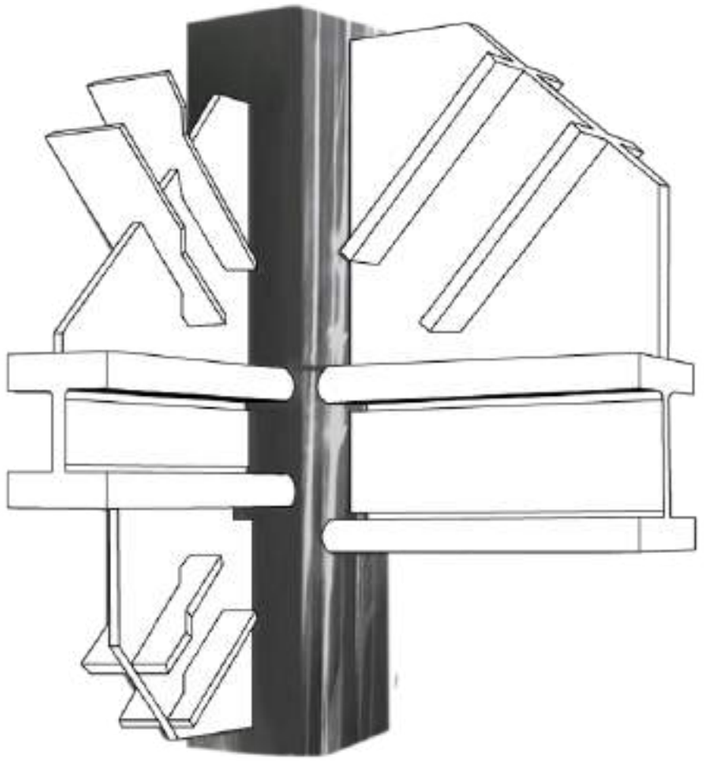
- ***Can be used where the lamination of multiple steel plates to build up a solid section is not advisable due to the need to transmit forces orthogonal to the laminations***

- ***Features low Carbon Content and an elevated CVN Toughness, allowing for the resistance of fracture in the presence of high triaxiality***

FEATURED PROJECT (Left Page):
The One. Toronto, ON



Original Node Design without High Integrity Block



Node Design with High Integrity Block

PROJECT CREDITS

Whitney Museum of American Art

Architect:
Renzo Piano Building Workshop and Cooper, Robertson & Partners
Structural Engineer:
Silman

6, 8, 9

University of Lethbridge

Architect:
KPMB with Stantec
Structural Engineer:
Entuitive

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Emory University Hospital Pedestrian Bridge

Architect:
SmithGroup
Structural Engineer:
Walter P Moore

12, 13

University of Connecticut Innovation Partnership Building

Architect & Structural Engineer:
Skidmore, Owings & Merrill

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Physical Activity and Wellness Centre, University of Alberta

Architect:
Group2 Architecture
Structural Engineer:
Stantec Consulting

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Cincinnati Ballet

Architect:
GBBN
Structural Engineer:
Schaefer

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University of Arizona Biomedical Sciences Partnership Building

Architect:
CO Architects and Ayers Saint Gross
Structural Engineer:
John A. Martin & Associates

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McDonald's Chicago Flagship Restaurant

Architect:
Ross Barney Architects
Structural Engineer:
Goodfriend Magruder Structure

22, 23

Clark University Alumni and Student Engagement Center

Architect:
Architerra Inc.
Structural Engineer:
Odeh Engineers, Inc.

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Roy Bickell K-8 Public School

Architect & Structural Engineer:
Stantec

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Sandy Springs Performing Arts Center

Architect:
Rosser International, Inc.
Structural Engineer:
Walter P Moore

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Vancouver International Airport (Pier D Expansion)

Architect:
Kasian Architecture
Structural Engineer:
Bush, Bohlman & Partners LLP

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UMass Amherst John W. Olver Design Building

Architect:
Leers Weinzapfel Associates
Structural Engineer:
Equilibrium Consulting Inc. and Simpson Gumpertz & Heger Inc.

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Queen Richmond Centre West

Architect:
Sweeny & Co Architects
Structural Engineer:
Stephenson Engineering

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Charlotte Douglas International Airport Expansion

Architect:
Perkins+Will and C Design
Structural Engineer:
Stewart

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San Ysidro U.S. Land Port of Entry

Architect:
The Miller Hull Partnership
Structural Engineer:
Magnusson Klemencic Associates

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Salesforce Transit Center

Architect:
Pelli Clarke Pelli
Structural Engineer:
Thornton Tomasetti and Schlaich Bergermann Partner

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MSG Sphere

Architect:
Populous
Structural Engineer:
Severud Associates

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The Leaf at Canada's Diversity Gardens

Architect:
Architecture 49 with KPMB Architects
Structural Engineer:
Blackwell

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Harbourfront Centre Stage

Architect:
Tensile Integrity Inc
Structural Engineer:
Blackwell

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Centre des Loisirs St-Lambert

Architect:
Leclerc architecte
Structural Engineer:
GENIVAR

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Winery Fermentation Frames

Industrial Engineer:
Eichleay Engineers
Structural Engineer:
Summit Engineering

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Berkeley Art Museum & Pacific Film Archive, University of California

Architect:
Diller Scofidio + Renfro and EHDD
Structural Engineer:
Forell/Elsesser Engineers

64

The Pavillion

Architect:
Feldman Architecture
Structural Engineer:
FTF Engineering

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Audain Art Museum

Architect:
Patkau Architects
Structural Engineer:
Equilibrium Consulting Inc.

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Centre Educatif Saint-Aubin

Architect:
NIVO9
Structural Engineer:
EMS Ingenierie

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The One

Architect:
Foster + Partners with CORE Architects
Structural Engineer:
Read Jones Christoffersen

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30 Hudson Yards

Architect:
Kohn Pedersen Fox Associates
Structural Engineer:
Thornton Tomasetti

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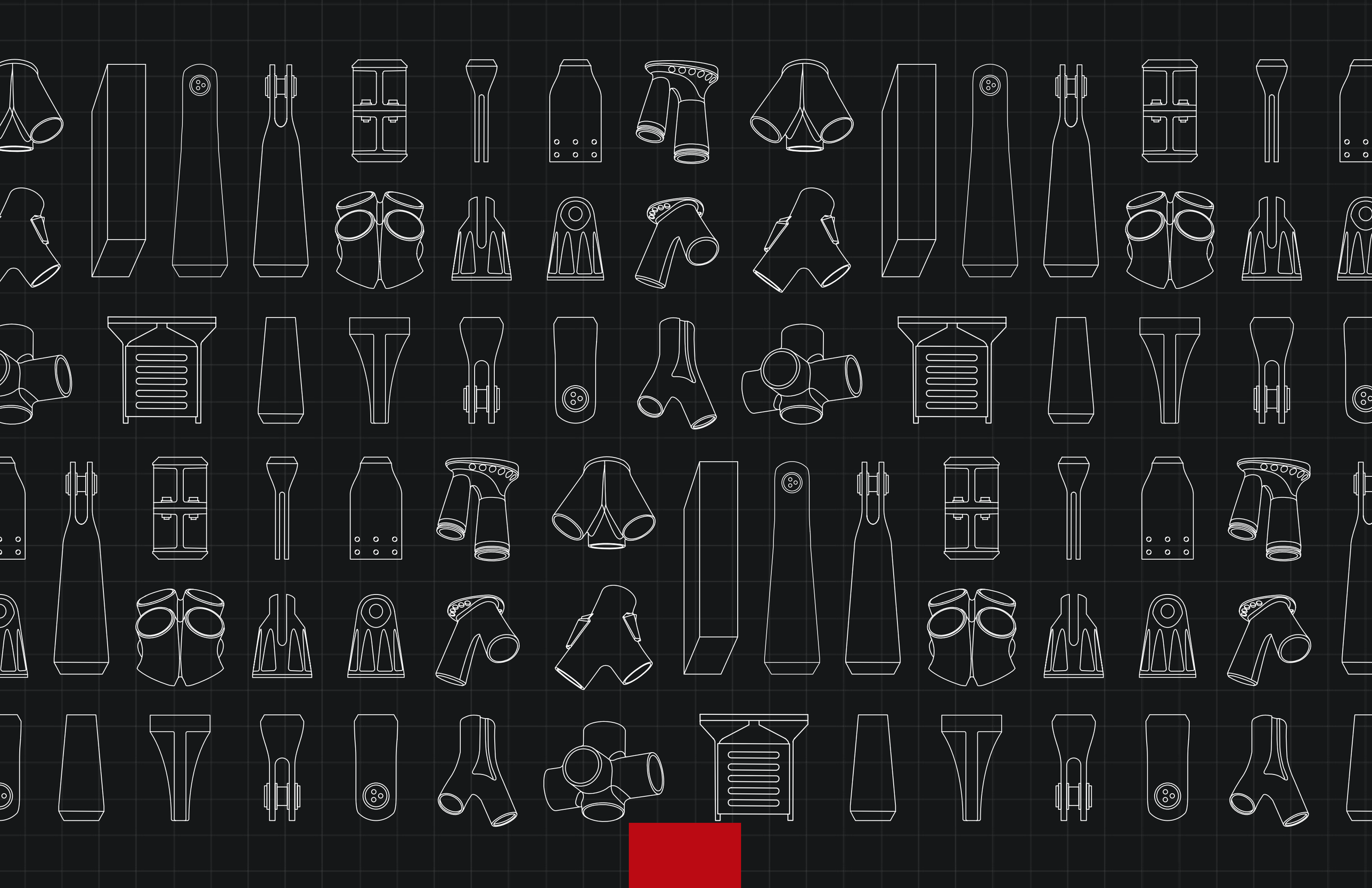

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